Slip 1

Q1. Create a Simple Application which shows the Life Cycle of Activity. [10 Marks]

Solution:-

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="#00B8D4"
   android:gravity="center"
   tools:context=".MainActivity">

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/text"
      android:text="Activity Lifecycle"
      android:textColor="@color/white"
```

```
        android:textSize="20sp"
        android:layout_margin="20dp"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
```

```
        Toast.makeText(this, "Activity Created..!!",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onPause() {
        super.onPause();
        Toast.makeText(this, "Activity Paused",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStart() {
        super.onStart();
        Toast.makeText(this, "Activity Started",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Toast.makeText(this, "Activity Paused",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onDestroy() {
```

```
        super.onDestroy();
        Toast.makeText(this, "Activity Destroyed",
    Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onResume() {
        super.onResume();
        Toast.makeText(this, "Activity Resumed",
    Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStop() {
        super.onStop();
        Toast.makeText(this, "Activity Stopped",
    Toast.LENGTH_SHORT).show();
    }
}
```

Q2. Create an Android application to demonstrate Progress Dialog Box using AsyncTask [20 Marks]

Solution:-


```
<!-- activity_main.xml -->

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"

   xmlns:tools="http://schemas.android.com/tools"

   android:layout_width="match_parent"

   android:layout_height="match_parent"

   android:padding="16dp"

   tools:context=".MainActivity">


   <Button

      android:id="@+id/btn_fetch_data"

      android:layout_width="wrap_content"

      android:layout_height="wrap_content"

      android:layout_centerInParent="true"

      android:text="Fetch Data" />
```

```
</RelativeLayout>

// MainActivity.java
import android.app.ProgressDialog;
import android.os.AsyncTask;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

   Button fetchDataButton;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      fetchDataButton = findViewById(R.id.btn_fetch_data);
      fetchDataButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            fetchData();
```

```
        }
    });
}

private void fetchData() {
    // Execute AsyncTask to fetch data
    new FetchDataTask().execute();
}

private class FetchDataTask extends AsyncTask<Void, Integer, Boolean> {

    ProgressDialog progressDialog;

    @Override
    protected void onPreExecute() {
        super.onPreExecute();
        // Show progress dialog before executing AsyncTask
        progressDialog = new ProgressDialog(MainActivity.this);
        progressDialog.setMessage("Fetching data...");
        progressDialog.setProgressStyle(ProgressDialog.STYLE_HORIZONTAL);
        progressDialog.setMax(100);
        progressDialog.setCancelable(false);
        progressDialog.show();
    }
```

```
@Override
protected Boolean doInBackground(Void... voids) {
    // Simulate background operation (e.g., fetching data from server)
    try {
        for (int i = 0; i < 100; i++) {
            // Simulate network delay
            Thread.sleep(50);
            // Publish progress
            publishProgress(i);
        }
    } catch (InterruptedException e) {
        e.printStackTrace();
        return false;
    }

    // Return true if data fetching is successful, false otherwise
    return true;
}

@Override
protected void onProgressUpdate(Integer... values) {
    super.onProgressUpdate(values);
    // Update progress dialog
    progressDialog.setProgress(values[0]);
}
```

```
    @Override
    protected void onPostExecute(Boolean success) {
        super.onPostExecute(success);
        // Dismiss progress dialog
        progressDialog.dismiss();

        if (success) {
            // Data fetched successfully
            Toast.makeText(MainActivity.this, "Data fetched successfully!",
Toast.LENGTH_SHORT).show();
        } else {
            // Failed to fetch data
            Toast.makeText(MainActivity.this, "Failed to fetch data!",
Toast.LENGTH_SHORT).show();
        }
    }
  }
}
```

Q2. Create an Android Application that demonstrate DatePicker and DatePickerDailog. [20 Marks]

Solution:

```
<!-- activity_main.xml -->
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

```
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btn_select_date"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Select Date" />

</RelativeLayout>

// MainActivity.java
import android.app.DatePickerDialog;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.Toast;

import java.util.Calendar;
```

```
public class MainActivity extends AppCompatActivity {

    Button selectDateButton;
    DatePickerDialog datePickerDialog;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        selectDateButton = findViewById(R.id.btn_select_date);
        selectDateButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showDatePickerDialog();
            }
        });
    }

    private void showDatePickerDialog() {
        // Get current date
        final Calendar calendar = Calendar.getInstance();
        int year = calendar.get(Calendar.YEAR);
        int month = calendar.get(Calendar.MONTH);
```

```
        int dayOfMonth = calendar.get(Calendar.DAY_OF_MONTH);


        // Create DatePickerDialog
        datePickerDialog = new DatePickerDialog(MainActivity.this,
                new DatePickerDialog.OnDateSetListener() {
                    @Override
                    public void onDateSet(DatePicker view, int year, int monthOfYear,
int dayOfMonth) {
                        // Display the selected date
                        Toast.makeText(MainActivity.this, "Selected Date: " +
(monthOfYear + 1) + "/" + dayOfMonth + "/" + year,
Toast.LENGTH_SHORT).show();
                    }
                }, year, month, dayOfMonth);


        // Show DatePickerDialog
        datePickerDialog.show();
    }
}
```

Slip 2

Q1. Create a Simple Application, which reads a positive number from the user and display its factorial value in another activity. [10 Marks]

Solution:

(Note:- For this program we need to create two activities)

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="#00B8D4"
   android:gravity="center" tools:context=".MainActivity">


   <com.google.android.material.textfield.TextInputLayout
      android:layout_width="match_parent"
      android:layout_margin="50dp"
      android:hint="Enter any number"
      app:boxBackgroundColor="@color/white"
      android:layout_height="wrap_content">

      <EditText
         android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:id="@+id/text"
         />
</com.google.android.material.textfield.TextInputLayout>

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="50dp"
    android:id="@+id/button"
```

```
        android:text="Send"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.content.Intent;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;



public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```
EditText text = findViewById(R.id.text);
Button submit = findViewById(R.id.button);

submit.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      int fact=1;
      Integer num =Integer.parseInt( text.getText().toString());
      if (num>0)
      {
         for (int i=1;i<=num;i++)
         {
            fact = fact*i;
         }
         Intent intent = new Intent(MainActivity.this,
Homepage.class);
         intent.putExtra("fact",String.valueOf(fact));
         startActivity(intent);
      }
      else
      {
         Toast.makeText(MainActivity.this, "Invalid Number..!!",
Toast.LENGTH_SHORT).show();
      }
```

```
        }
    });

  }

}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".Homepage">


   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Welcome to my App..!!"
      android:textSize="20sp"
```

```
        android:textColor="@color/black"
        android:id="@+id/output"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Homepage.java

```
      package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.widget.TextView;

import org.w3c.dom.Text;

public class Homepage extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_homepage);
```

```
        TextView out = findViewById(R.id.output);
        String message = getIntent().getStringExtra("fact");

        out.setText("Factorial of given number is "+message);
    }
}
```

Q2.Create an Android application that plays an audio(song) in the background. Audio will not be stopped even if you switch to another activity. To stop the audio, you need to stop the service. [20 Marks]

Solution:

```
<!-- activity_main.xml -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:gravity="center"
  android:orientation="vertical"
  android:padding="16dp"
  tools:context=".MainActivity">

  <Button
    android:id="@+id/play_button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Play Audio" />
```

```
    <Button
        android:id="@+id/stop_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Stop Audio" />

</LinearLayout>
// MainActivity.java
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    private Intent serviceIntent;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button playButton = findViewById(R.id.play_button);
```

```
    Button stopButton = findViewById(R.id.stop_button);

    playButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            startAudioService();
        }
    });

    stopButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            stopAudioService();
        }
    });
}

private void startAudioService() {
    if (serviceIntent == null) {
        serviceIntent = new Intent(this, AudioService.class);
        startService(serviceIntent); // Start AudioService
    }
}

private void stopAudioService() {
```

```
        if (serviceIntent != null) {
            stopService(serviceIntent); // Stop AudioService
            serviceIntent = null;
        }
    }
}

// AudioService.java
import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;

public class AudioService extends Service {

    private MediaPlayer mediaPlayer;

    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }

    @Override
    public void onCreate() {
        super.onCreate();
```

```
        mediaPlayer = MediaPlayer.create(this, R.raw.your_audio_file); // Replace
"your_audio_file" with your audio file in the raw folder
        mediaPlayer.setLooping(true); // Loop the audio
    }

    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {
        mediaPlayer.start(); // Start playing audio when service starts
        return START_STICKY; // Ensures service stays running
    }

    @Override
    public void onDestroy() {
        super.onDestroy();
        if (mediaPlayer != null) {
            mediaPlayer.stop();
            mediaPlayer.release();
            mediaPlayer = null;
        }
    }
}
```

OR

Q2. Create an Android Application to display satellite view of current location using Google Map. [20 Marks]

Solution:

```
<!-- activity_maps.xml -->
```

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent">

   <fragment
      android:id="@+id/map_fragment"

android:name="com.google.android.gms.maps.SupportMapFragmen
t"
      android:layout_width="match_parent"
      android:layout_height="match_parent" />

</RelativeLayout>


// MapsActivity.java
import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import  com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MapStyleOptions;
import com.google.android.gms.maps.model.MarkerOptions;

public class MapsActivity extends AppCompatActivity implements
OnMapReadyCallback {
```

```
    private GoogleMap mMap;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_maps);

        SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager()
                .findFragmentById(R.id.map_fragment);
        mapFragment.getMapAsync(this);
    }

    @Override
    public void onMapReady(@NonNull GoogleMap googleMap) {
        mMap = googleMap;

        // Enable satellite view
        mMap.setMapType(GoogleMap.MAP_TYPE_SATELLITE);

        // Get current location and move camera
        LatLng currentLocation = new LatLng(/* Latitude */, /* Longitude
*/);
        mMap.addMarker(new
```

```
MarkerOptions().position(currentLocation).title("Marker at Current
Location"));

mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(current
Location, 15f));
   }
}
```

Slip 3

Q1. Create an Android Application that will change color of the College Name on click of Push Button and change the font size, font style of text view using xml. [10 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="#00B8D4"
    android:gravity="center"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Dr. D.Y. Patil ACS College"
        android:textSize="20sp"
        android:fontFamily="sans-serif"
        android:id="@+id/name"
        android:textColor="@color/black"
        />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="50dp"
        android:id="@+id/button"
        android:text="Change color"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;



public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);


        TextView text = findViewById(R.id.name);
        Button submit = findViewById(R.id.button);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
            public void onClick(View v) {

        text.setTextColor(getResources().getColor(R.color.white));          }
            });

          }

        }
```

Q2. Create an Android Application to find the factorial of a number and Display the Result on Alert Box. [20 Marks]

Solution:

```
<!-- activity_main.xml -->
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp"
   tools:context=".MainActivity">

   <EditText
      android:id="@+id/edit_text_number"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter a number"
```

```
        android:inputType="number" />

    <Button
        android:id="@+id/btn_calculate_factorial"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/edit_text_number"
        android:layout_marginTop="16dp"
        android:text="Calculate Factorial" />

</RelativeLayout>

// MainActivity.java
import android.app.AlertDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    EditText editTextNumber;
    Button calculateButton;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        editTextNumber = findViewById(R.id.edit_text_number);
        calculateButton = findViewById(R.id.btn_calculate_factorial);

        calculateButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateFactorial();
            }
        });
    }

    private void calculateFactorial() {
        try {
            int number = Integer.parseInt(editTextNumber.getText().toString());
            long factorial = computeFactorial(number);
            showAlert("Factorial Result", "Factorial of " + number + " is: " +
factorial);
        } catch (NumberFormatException e) {
            // Handle invalid input
            showAlert("Invalid Input", "Please enter a valid number.");
```

```
        }
    }

    private long computeFactorial(int n) {
        if (n == 0)
            return 1;
        else
            return n * computeFactorial(n - 1);
    }

    private void showAlert(String title, String message) {
        AlertDialog.Builder builder = new AlertDialog.Builder(this);
        builder.setTitle(title);
        builder.setMessage(message);
        builder.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
            }
        });
        builder.create().show();
    }
}
```

OR

Q2. Create an Android App, it reads the Students Details (Name, Surname, Class, Gender, Hobbies, Marks) and display the all information in another activity in table format on click of Submit button. [20 Marks]

Solution:

```
<!-- activity_main.xml -->

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"

   xmlns:tools="http://schemas.android.com/tools"

   android:layout_width="match_parent"

   android:layout_height="match_parent"

   android:padding="16dp"

   tools:context=".MainActivity">


   <EditText

      android:id="@+id/edit_text_name"

      android:layout_width="match_parent"

      android:layout_height="wrap_content"

      android:hint="Name" />


   <EditText

      android:id="@+id/edit_text_surname"

      android:layout_width="match_parent"

      android:layout_height="wrap_content"

      android:layout_below="@id/edit_text_name"

      android:layout_marginTop="16dp"
```

```
    android:hint="Surname" />

<EditText
    android:id="@+id/edit_text_class"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/edit_text_surname"
    android:layout_marginTop="16dp"
    android:hint="Class" />

<RadioGroup
    android:id="@+id/radio_group_gender"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/edit_text_class"
    android:layout_marginTop="16dp"
    android:orientation="horizontal">

    <RadioButton
        android:id="@+id/radio_button_male"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male" />

    <RadioButton
```

```
        android:id="@+id/radio_button_female"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female" />

</RadioGroup>

<EditText
    android:id="@+id/edit_text_hobbies"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/radio_group_gender"
    android:layout_marginTop="16dp"
    android:hint="Hobbies" />

<EditText
    android:id="@+id/edit_text_marks"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/edit_text_hobbies"
    android:layout_marginTop="16dp"
    android:hint="Marks" />

<Button
    android:id="@+id/btn_submit"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/edit_text_marks"
        android:layout_marginTop="16dp"
        android:text="Submit" />

</RelativeLayout>

<!-- activity_display_details.xml -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:id="@+id/text_view_details_heading"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Student Details"
        android:textSize="20sp"
        android:textStyle="bold" />

    <TableLayout
```

```
    android:id="@+id/table_layout_details"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp" />

</LinearLayout>

// MainActivity.java
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;

public class MainActivity extends AppCompatActivity {

  EditText editTextName, editTextSurname, editTextClass, editTextHobbies,
editTextMarks;
  RadioGroup radioGroupGender;
  Button submitButton;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        editTextName = findViewById(R.id.edit_text_name);
        editTextSurname = findViewById(R.id.edit_text_surname);
        editTextClass = findViewById(R.id.edit_text_class);
        radioGroupGender = findViewById(R.id.radio_group_gender);
        editTextHobbies = findViewById(R.id.edit_text_hobbies);
        editTextMarks = findViewById(R.id.edit_text_marks);
        submitButton = findViewById(R.id.btn_submit);

        submitButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                submitDetails();
            }
        });
    }

    private void submitDetails() {
        String name = editTextName.getText().toString();
        String surname = editTextSurname.getText().toString();
        String className = editTextClass.getText().toString();
        String gender = ((RadioButton)
findViewById(radioGroupGender.getCheckedRadioButtonId())).getText().toStri
ng();
```

```
        String hobbies = editTextHobbies.getText().toString();
        String marks = editTextMarks.getText().toString();

        Intent intent = new Intent(this, DisplayDetailsActivity.class);
        intent.putExtra("Name", name);
        intent.putExtra("Surname", surname);
        intent.putExtra("Class", className);
        intent.putExtra("Gender", gender);
        intent.putExtra("Hobbies", hobbies);
        intent.putExtra("Marks", marks);
        startActivity(intent);
    }
}

// DisplayDetailsActivity.java
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.Gravity;
import android.widget.TableLayout;
import android.widget.TableRow;
import android.widget.TextView;

public class DisplayDetailsActivity extends AppCompatActivity {

    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_display_details);

        TableLayout tableLayout = findViewById(R.id.table_layout_details);

        Bundle extras = getIntent().getExtras();
        if (extras != null) {
            for (String key : extras.keySet()) {
                TableRow row = new TableRow(this);
                TextView textViewKey = new TextView(this);
                textViewKey.setText(key + ": ");
                textViewKey.setGravity(Gravity.START);
                TextView textViewValue = new TextView(this);
                textViewValue.setText(extras.getString(key));
                textViewValue.setGravity(Gravity.START);
                row.addView(textViewKey);
                row.addView(textViewValue);
                tableLayout.addView(row);
            }
        }
    }
}
```

Slip 4

Q1. Create a Simple Application, that performs Arithmetic Operations. (Use constraint layout) [10 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">

   <EditText
      android:id="@+id/editTextNumber1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:hint="Enter number 1"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintEnd_toEndOf="parent"/>
```

```
<EditText
    android:id="@+id/editTextNumber2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Enter number 2"
    app:layout_constraintTop_toBottomOf="@id/editTextNumber1"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"/>

<Button
    android:id="@+id/buttonAdd"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add"
    app:layout_constraintTop_toBottomOf="@id/editTextNumber2"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"/>

<Button
    android:id="@+id/buttonSubtract"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Subtract"
    app:layout_constraintTop_toBottomOf="@id/buttonAdd"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"/>

<Button
    android:id="@+id/buttonMultiply"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Multiply"
    app:layout_constraintTop_toBottomOf="@id/buttonSubtract"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"/>

<Button
    android:id="@+id/buttonDivide"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Divide"
    app:layout_constraintTop_toBottomOf="@id/buttonMultiply"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"/>

<TextView
    android:id="@+id/textViewResult"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
        android:text="Result"
        app:layout_constraintTop_toBottomOf="@id/buttonDivide"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText editTextNumber1;
    private EditText editTextNumber2;
    private TextView textViewResult;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        editTextNumber1 = findViewById(R.id.editTextNumber1);
```

```
editTextNumber2 = findViewById(R.id.editTextNumber2);
Button buttonAdd = findViewById(R.id.buttonAdd);
Button buttonSubtract = findViewById(R.id.buttonSubtract);
Button buttonMultiply = findViewById(R.id.buttonMultiply);
Button buttonDivide = findViewById(R.id.buttonDivide);
textViewResult = findViewById(R.id.textViewResult);

buttonAdd.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        performAddition();
    }
});

buttonSubtract.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        performSubtraction();
    }
});

buttonMultiply.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        performMultiplication();
```

```
        }
    });

    buttonDivide.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            performDivision();
        }
    });
}

private void performAddition() {
    double num1 =
Double.parseDouble(editTextNumber1.getText().toString());
    double num2 =
Double.parseDouble(editTextNumber2.getText().toString());
    double result = num1 + num2;
    textViewResult.setText("Result: " + result);
}

private void performSubtraction() {
    double num1 =
Double.parseDouble(editTextNumber1.getText().toString());
    double num2 =
Double.parseDouble(editTextNumber2.getText().toString());
    double result = num1 - num2;
    textViewResult.setText("Result: " + result);
```

```
    }


    private void performMultiplication() {
        double num1 =
Double.parseDouble(editTextNumber1.getText().toString());
        double num2 =
Double.parseDouble(editTextNumber2.getText().toString());
        double result = num1 * num2;
        textViewResult.setText("Result: " + result);
    }


    private void performDivision() {
        double num1 =
Double.parseDouble(editTextNumber1.getText().toString());
        double num2 =
Double.parseDouble(editTextNumber2.getText().toString());
        if (num2 != 0) {
            double result = num1 / num2;
            textViewResult.setText("Result: " + result);
        } else {
            textViewResult.setText("Cannot divide by zero");
        }
    }
}
```

Q2. Create an Android Application that sends the Notification on click of the button and displays the notification message on the second activity. [20 Marks]

Solution:

(Note:- For this program we need to create two activities)

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
android:background="#00B8D4"
android:gravity="center"
tools:context=".MainActivity">



<com.google.android.material.textfield.TextInputLayout
   android:layout_width="match_parent"
   android:layout_margin="50dp"
   android:hint="Enter text"
   app:boxBackgroundColor="@color/white"
   android:layout_height="wrap_content">

   <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"

      android:id="@+id/text"
       />
</com.google.android.material.textfield.TextInputLayout>

<Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
```

```
        android:layout_margin="50dp"
        android:id="@+id/button"
        android:text="send notification"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;



public class MainActivity extends AppCompatActivity {
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);



        EditText text = findViewById(R.id.text);
        Button submit = findViewById(R.id.button);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(getApplicationContext(),
Homepage.class);
                intent.putExtra("notification",text.getText().toString());
                startActivity(intent);


            }
        });


    }
}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".Homepage">


   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Welcome to my App..!!"
      android:textSize="20sp"
      android:textColor="@color/black"
      android:id="@+id/output"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Homepage.java

```
package com.example.collegepractical;
```

```
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

import org.w3c.dom.Text;

public class Homepage extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_homepage);
      TextView out = findViewById(R.id.output);
      String message = getIntent().getStringExtra("notification");
      Toast.makeText(this, "Notification Received "+message,
Toast.LENGTH_SHORT).show();

   }
}
```

OR

Q2. Create an android Application for performing the following operation on the table Customer (id, name, address, phno). (use SQLite database)

i) Insert New Customer Details.

ii) ii) Show All the Customer Details on Toast Message.

[20 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:padding="16dp"
   tools:context=".MainActivity">

   <Button
      android:id="@+id/btnInsert"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Insert Customer Details" />

   <Button
      android:id="@+id/btnShow"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
```

```
        android:text="Show All Customer Details" />
</LinearLayout>
```

Toast_layout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="@drawable/bg_toast"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:id="@+id/textToast"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="@android:color/white"
        android:textSize="16sp"
        android:textStyle="bold" />
</LinearLayout>
```

MainActivity.java

```
import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    private DatabaseHelper dbHelper;
```

```
    private Button btnInsert, btnShow;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        dbHelper = new DatabaseHelper(this);
        SQLiteDatabase db = dbHelper.getWritableDatabase();

        btnInsert = findViewById(R.id.btnInsert);
        btnShow = findViewById(R.id.btnShow);

        btnInsert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                insertCustomer("John Doe", "123 Main St", "1234567890");
                insertCustomer("Jane Smith", "456 Elm St", "0987654321");
                Toast.makeText(MainActivity.this, "Customers inserted
successfully", Toast.LENGTH_SHORT).show();
            }
        });

        btnShow.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showAllCustomers();
            }
        });
    }

    private void insertCustomer(String name, String address, String
phno) {
        SQLiteDatabase db = dbHelper.getWritableDatabase();
        ContentValues values = new ContentValues();
```

```
        values.put(DatabaseHelper.COLUMN_NAME, name);
        values.put(DatabaseHelper.COLUMN_ADDRESS, address);
        values.put(DatabaseHelper.COLUMN_PHNO, phno);
        db.insert(DatabaseHelper.TABLE_CUSTOMER, null, values);
    }

    private void showAllCustomers() {
        SQLiteDatabase db = dbHelper.getReadableDatabase();
        Cursor cursor = db.query(DatabaseHelper.TABLE_CUSTOMER,
null, null, null, null, null, null);
        StringBuilder stringBuilder = new StringBuilder();
        if (cursor.moveToFirst()) {
            do {
                int id =
cursor.getInt(cursor.getColumnIndex(DatabaseHelper.COLUMN_ID));
                String name =
cursor.getString(cursor.getColumnIndex(DatabaseHelper.COLUMN_N
AME));
                String address =
cursor.getString(cursor.getColumnIndex(DatabaseHelper.COLUMN_A
DDRESS));
                String phno =
cursor.getString(cursor.getColumnIndex(DatabaseHelper.COLUMN_P
HNO));
                stringBuilder.append("ID: ").append(id).append("\n");
                stringBuilder.append("Name:
").append(name).append("\n");
                stringBuilder.append("Address:
").append(address).append("\n");
                stringBuilder.append("Phone:
").append(phno).append("\n\n");
            } while (cursor.moveToNext());
        }
        cursor.close();
        // Show all customers details in a Toast message
```

```
        Toast.makeText(MainActivity.this, stringBuilder.toString(),
Toast.LENGTH_LONG).show();
    }
}
```

Customer.java

```
public class Customer {
    private int id;
    private String name;
    private String address;
    private String phno;

    public Customer(int id, String name, String address, String phno) {
        this.id = id;
        this.name = name;
        this.address = address;
        this.phno = phno;
    }

    // Getters and Setters
    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }
```

```
    public String getAddress() {
        return address;
    }

    public void setAddress(String address) {
        this.address = address;
    }

    public String getPhno() {
        return phno;
    }

    public void setPhno(String phno) {
        this.phno = phno;
    }
}
```

DatabaseHelper.java

```
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DatabaseHelper extends SQLiteOpenHelper {
    private static final String DATABASE_NAME =
"customer_database";
    private static final int DATABASE_VERSION = 1;
    public static final String TABLE_CUSTOMER = "customer";
    public static final String COLUMN_ID = "id";
    public static final String COLUMN_NAME = "name";
    public static final String COLUMN_ADDRESS = "address";
    public static final String COLUMN_PHNO = "phno";
```

```
    private static final String CREATE_TABLE_CUSTOMER = "CREATE
TABLE " + TABLE_CUSTOMER + " (" +
        COLUMN_ID + " INTEGER PRIMARY KEY AUTOINCREMENT, " +
        COLUMN_NAME + " TEXT, " +
        COLUMN_ADDRESS + " TEXT, " +
        COLUMN_PHNO + " TEXT);";

    public DatabaseHelper(Context context) {
      super(context, DATABASE_NAME, null, DATABASE_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
      db.execSQL(CREATE_TABLE_CUSTOMER);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int
newVersion) {
      db.execSQL("DROP TABLE IF EXISTS " + TABLE_CUSTOMER);
      onCreate(db);
    }
}
```

Q1. Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity on Button click.
[10 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="#00B8D4"
   android:gravity="center"
   tools:context=".MainActivity">




      <EditText
         android:layout_width="match_parent"
         android:id="@+id/num1"
         android:hint="Enter Number 1"



         android:layout_margin="20dp"
         android:background="@color/white"
         android:layout_height="50dp"
```

/>

```
    <EditText
        android:layout_width="match_parent"
        android:id="@+id/num2"
        android:hint="Enter number 2"

        android:layout_margin="20dp"
        android:background="@color/white"
        android:layout_height="50dp"
         />


<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="submit"
    android:textColor="#00B8D4"

    android:layout_margin="20dp"
    android:background="@color/white"
    android:id="@+id/submit"
    />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
        android:text=""
        android:textColor="@color/white"
        android:textSize="20sp"
        android:layout_margin="20dp"
        android:id="@+id/out"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        EditText num1 = findViewById(R.id.num1);
        EditText num2 = findViewById(R.id.num2);
        TextView out = findViewById(R.id.out);
        Button submit = findViewById(R.id.submit);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {


                if (num1.getText().toString().isEmpty() ||
num2.getText().toString().isEmpty())
                {
                    Toast.makeText(MainActivity.this, "Inputs cannot be
empty.!!", Toast.LENGTH_SHORT).show();
                }
                else
                {
                    double number1=
Double.parseDouble(num1.getText().toString());
                    double number2 =
Double.parseDouble(num2.getText().toString());
                    double pow = Math.pow(number1,number2);
                    double avg = (number2+number1)/2;
```

```
            Intent intent = new Intent(getApplicationContext(),
Homepage.class);
            Bundle bundle = new Bundle();
            bundle.putString("avg",String.valueOf(avg));
            bundle.putString("pow",String.valueOf(pow));
            intent.putExtras(bundle);
            startActivity(intent);

        }
      }
    });


  }

}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
```

```
    tools:context=".Homepage">


    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="@color/black"
        android:textSize="20sp"
        android:id="@+id/output"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Homepage.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.widget.TextView;

import org.w3c.dom.Text;
```

```
public class Homepage extends AppCompatActivity {


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_homepage);
        TextView out = findViewById(R.id.output);
        Bundle bundle = getIntent().getExtras();
        String pow = bundle.getString("pow");
        String avg= bundle.getString("avg");
        out.setText("Power :- "+pow+"\n\nAverage:- "+avg);


    }
}
```

Q2. Create an Android application that creates a custom Alert Dialog containing Friends Name and onClick of Friend Name Button greet accordingly. [20 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:padding="20dp">


    <Button
        android:id="@+id/buttonFriend"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Friend"/>

</LinearLayout>

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnOpenDialog = findViewById(R.id.btnOpenDialog);
        btnOpenDialog.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
        public void onClick(View v) {
            openFriendDialog();
        }
    });
}

private void openFriendDialog() {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    LayoutInflater inflater = getLayoutInflater();
    View dialogView = inflater.inflate(R.layout.dialog_friend, null);
    builder.setView(dialogView);

    Button buttonFriend = dialogView.findViewById(R.id.buttonFriend);

    final AlertDialog dialog = builder.create();
    dialog.show();

    buttonFriend.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            greetFriend();
            dialog.dismiss();
        }
    });
}
```

```
   private void greetFriend() {
      // Here you can change "Friend" to the desired friend's name
      Toast.makeText(MainActivity.this, "Hello Friend!",
Toast.LENGTH_SHORT).show();
   }
}
```

OR

Q2. Create an Android Application to perform Zoom In, Zoom Out operation and display Satellite view, on Google Map.
[20 Marks]

Slip 6

Q1. Create a Simple Application Which Send —Hello! message from one activity to another with help of Button (Use Intent). [10 Marks]

Solution:

(Note:- For this program we need to create two activities)

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
```

android:background="#00B8D4"

android:gravity="center"

```
    tools:context=".MainActivity">


    <com.google.android.material.textfield.TextInputLayout
        android:layout_width="match_parent"
        android:layout_margin="50dp"
        android:hint="Enter text to send"
        app:boxBackgroundColor="@color/white"
        android:layout_height="wrap_content">

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/text"
             />
    </com.google.android.material.textfield.TextInputLayout>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="50dp"
        android:id="@+id/button"
        android:text="Send"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.content.Intent;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;



public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);


      EditText text = findViewById(R.id.text);
      Button submit = findViewById(R.id.button);

      submit.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,
Homepage.class);
            intent.putExtra("message",text.getText().toString());
            Toast.makeText(MainActivity.this, "Message Sent..!!",
Toast.LENGTH_SHORT).show();
            startActivity(intent);
        }
      });

   }

}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".Homepage">
```

```
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Welcome to my App..!!"
      android:textSize="20sp"
      android:textColor="@color/black"
      android:id="@+id/output"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Homepage.java

```
     package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.widget.TextView;

import org.w3c.dom.Text;
```

```
public class Homepage extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_homepage);
        TextView out = findViewById(R.id.output);
        String message = getIntent().getStringExtra("message");

        out.setText(message);
    }
}
```

Q2. Create an Android Application that Demonstrates ListView and Onclick of List Display the Toast. [20 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@color/white"
    android:gravity="center"
    tools:context=".MainActivity">

   <ListView
      android:layout_width="match_parent"
      android:layout_height="match_parent"
```

```
    android:id="@+id/list_view"

    />

</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;


public class MainActivity extends AppCompatActivity {


   private String[] arr={"Item 1","Item 2","Item 3","Item 4","Item
5","Item 6","Item 7","Item 8"};

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

       ListView listView = findViewById(R.id.list_view);
```

```
        ArrayAdapter ad = new ArrayAdapter(this,
android.R.layout.simple_list_item_1,arr);
        listView.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view,
int position, long id) {
                Toast.makeText(MainActivity.this, "Item "+(position+1)+"
clicked ", Toast.LENGTH_SHORT).show();
            }
        });
        listView.setAdapter(ad);




    }
}
```

OR

Q2. Create an Android application to perform following operations on table Student (Sid ,Sname ,phno). Use autoincrement for Sid and Perform following Operations.

a) Add Student and display its information.

b) Delete Student

Slip 7

Q1. Create an Android Application that Demonstrate Radio Button.
[10 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">


   <RadioGroup
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:gravity="center"
      android:id="@+id/radioGroup"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent">

        <RadioButton
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button 1"/>

        <RadioButton
            android:layout_width="wrap_content"
            android:layout_marginTop="20dp"
            android:layout_height="wrap_content"
            android:text="Button 2"/>

    </RadioGroup>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      RadioGroup radioGroup = findViewById(R.id.radioGroup);
      radioGroup.setOnCheckedChangeListener(new
RadioGroup.OnCheckedChangeListener() {
         @Override
         public void onCheckedChanged(RadioGroup group, int
checkedId) {
            int id = radioGroup.getCheckedRadioButtonId();
            RadioButton radioButton = findViewById(id);
            Toast.makeText(MainActivity.this, radioButton.getText()+"
selected..!!", Toast.LENGTH_SHORT).show();
         }
      });
   }
}
```

Q2. Create an Android application to demonstrate phone call using Implicit Intent. [20 Marks]

Solution:

AndroidManifest.xml

// Add the following code in AndroidManifest.xml file

```
 <uses-feature
      android:name="android.hardware.telephony"
      android:required="false" />
   <uses-permission
android:name="android.permission.CALL_PHONE"/>
```

// //

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
android:background="#00B8D4"
android:gravity="center"
tools:context=".MainActivity">



<com.google.android.material.textfield.TextInputLayout
   android:layout_width="match_parent"
   android:layout_margin="50dp"
   android:hint="Enter your number"
   app:boxBackgroundColor="@color/white"
   android:layout_height="wrap_content">

   <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:inputType="phone"
      android:id="@+id/text"
       />
</com.google.android.material.textfield.TextInputLayout>

<Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
```

```
        android:layout_margin="50dp"
        android:id="@+id/button"
        android:text="call"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
```

```
public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);



      EditText text = findViewById(R.id.text);
      Button submit = findViewById(R.id.button);

      submit.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            final String[] permission =
{Manifest.permission.CALL_PHONE};
            if
(ContextCompat.checkSelfPermission(getApplicationContext(),
Manifest.permission.CALL_PHONE) !=
PackageManager.PERMISSION_GRANTED) {
               ActivityCompat.requestPermissions(MainActivity.this,
permission, 9);

            }

            if
(ContextCompat.checkSelfPermission(getApplicationContext(),
```

```
Manifest.permission.CALL_PHONE) ==
PackageManager.PERMISSION_GRANTED) {
                Intent intent = new
Intent(Intent.ACTION_CALL,Uri.parse("tel:
"+text.getText().toString()));
                startActivity(intent);
            }



          }
       });


   }
}
```

OR

Q2. Write an android code to turn ON /OFF the Wi-Fi
[20 Marks]

Slip 8

Q1. Create an Android App with Login Screen. On successful login, gives message go to next Activity (Without Using Database& use Table Layout). [10 Marks]

Solution:

Activity_login.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:gravity="center"
   android:orientation="vertical"
   android:padding="16dp">

   <TableLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content">

      <TableRow>
         <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Username:" />

         <EditText
            android:id="@+id/editTextUsername"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
```

```
        android:layout_weight="1"/>
    </TableRow>

    <TableRow>
      <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password:" />

      <EditText
        android:id="@+id/editTextPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:inputType="textPassword"/>
    </TableRow>

    <TableRow>
      <Button
        android:id="@+id/buttonLogin"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Login"/>
    </TableRow>
  </TableLayout>
```

```
</LinearLayout>
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Login Successful!"/>

</LinearLayout>
```

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);

        final EditText editTextUsername = findViewById(R.id.editTextUsername);
        final EditText editTextPassword = findViewById(R.id.editTextPassword);
        Button buttonLogin = findViewById(R.id.buttonLogin);

        buttonLogin.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String username = editTextUsername.getText().toString();
                String password = editTextPassword.getText().toString();
                // For simplicity, let's assume a hardcoded username and password
                if (username.equals("user") && password.equals("password")) {
                    // If login is successful, open the next activity
                    Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                    startActivity(intent);
                }
            }
        });
```

```
    }
}
```

Q2. Create an android application to demonstrate how to use a service to download a file from the Internet on click of Download Button. Once done, the service notifies the activity via a broadcast receiver that the download is complete. [20 Marks]

OR

Q2. Create application to send email with attachment. [20 Marks]
Solution:

Manifest.xml

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.emailattachment">

    <uses-permission
android:name="android.permission.READ_EXTERNAL_STORAGE"/>
    <uses-permission
android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
```

```
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
  </application>

</manifest>
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:padding="16dp">

  <Button
    android:id="@+id/btnSendEmail"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Send Email"
    android:layout_centerInParent="true"/>

</RelativeLayout>
```

MainActivity.java

```
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.os.Environment;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;
import java.io.File;

public class MainActivity extends AppCompatActivity {

    private static final int REQUEST_CODE_EMAIL = 101;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnSendEmail = findViewById(R.id.btnSendEmail);
        btnSendEmail.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                sendEmailWithAttachment();
```

```
        }
    });
}

private void sendEmailWithAttachment() {
    Intent emailIntent = new Intent(Intent.ACTION_SEND);
    emailIntent.setType("text/plain");
    emailIntent.putExtra(Intent.EXTRA_EMAIL, new
String[]{"recipient@example.com"});
    emailIntent.putExtra(Intent.EXTRA_SUBJECT, "Subject");
    emailIntent.putExtra(Intent.EXTRA_TEXT, "Body");

    // Attach file
    File file = new File(Environment.getExternalStorageDirectory(),
"example.txt");
    Uri uri = Uri.fromFile(file);
    emailIntent.putExtra(Intent.EXTRA_STREAM, uri);

    // Launch email client
    startActivityForResult(Intent.createChooser(emailIntent, "Send Email"),
REQUEST_CODE_EMAIL);
}

@Override
protected void onActivityResult(int requestCode, int resultCode, Intent data)
{
    super.onActivityResult(requestCode, resultCode, data);
```

```
        if (requestCode == REQUEST_CODE_EMAIL) {
            // Handle result if needed
        }
    }
}
```

Slip 9

Q1. Write an Android application to accept two numbers from the user, and display them, but reject input if both numbers are greater than 10 and asks for two new numbers. [10 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
```

```
android:orientation="vertical"
android:gravity="center"
tools:context=".MainActivity">


<com.google.android.material.textfield.TextInputLayout
   android:layout_width="match_parent"
   android:layout_margin="20dp"
   android:hint="Enter 1st number"
   android:layout_height="wrap_content">

   <EditText
```

```
        android:layout_width="match_parent"
        android:id="@+id/num1"
        android:layout_height="wrap_content"
        />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="match_parent"
    android:layout_margin="20dp"
    android:hint="Enter 2nd number"
    android:layout_height="wrap_content">

    <EditText
        android:layout_width="match_parent"
        android:id="@+id/num2"
        android:layout_height="wrap_content"
        />
</com.google.android.material.textfield.TextInputLayout>


<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="submit"
    android:layout_margin="10dp"
    android:id="@+id/submit"
    />
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Output:- "
        android:textColor="@color/black"
        android:textSize="20sp"
        android:layout_margin="20dp"
        android:id="@+id/output"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;


public class MainActivity extends AppCompatActivity {
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    EditText num1 = findViewById(R.id.num1);
    EditText num2 = findViewById(R.id.num2);
    TextView out = findViewById(R.id.output);
    Button submit = findViewById(R.id.submit);

    submit.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            int number1 = Integer.parseInt(num1.getText().toString());
            int number2 = Integer.parseInt(num2.getText().toString());

            if (number1>10)
            {
                num1.setError("Number should be less than 10..");
            }else if (number2>10)
            {
                num2.setError("Number should be less than 10..");
            }
            else
            {
                out.setText("Number 1:- "+number1+"\n\nNumber 2 :-
"+number2);
            }
```

```
            }
        });
    }
}
```

Q2. Write a program to find the specific location of an Android device and display details of the place like Address line, city with Geocoding. [20 Marks]

OR

Q2. Create table Company (id, name, address, phno). Create Application for Performing the following operation on the table.

a) Insert New Company details.

b) Show All Company details

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp">

    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Company Name"/>
```

```
<EditText
   android:id="@+id/editTextAddress"
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:hint="Address"/>

<EditText
   android:id="@+id/editTextPhone"
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:hint="Phone Number"
   android:inputType="phone"/>

<Button
   android:id="@+id/btnInsert"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Insert"/>

<Button
   android:id="@+id/btnShowAll"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Show All"/>
```

```
    <TextView
        android:id="@+id/textViewResults"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:textSize="18sp"/>

</LinearLayout>
```

MainActivity.java

```
import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText editTextName, editTextAddress, editTextPhone;
```

```
private Button btnInsert, btnShowAll;
private TextView textViewResults;

private CompanyDBHelper dbHelper;

@Override
protected void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout.activity_main);

   dbHelper = new CompanyDBHelper(this);

   editTextName = findViewById(R.id.editTextName);
   editTextAddress = findViewById(R.id.editTextAddress);
   editTextPhone = findViewById(R.id.editTextPhone);
   btnInsert = findViewById(R.id.btnInsert);
   btnShowAll = findViewById(R.id.btnShowAll);
   textViewResults = findViewById(R.id.textViewResults);

   btnInsert.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
         insertCompany();
      }
   });
```

```
        btnShowAll.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showAllCompanies();
            }
        });
    }

    private void insertCompany() {
        String name = editTextName.getText().toString().trim();
        String address = editTextAddress.getText().toString().trim();
        String phone = editTextPhone.getText().toString().trim();

        if (name.isEmpty() || address.isEmpty() || phone.isEmpty()) {
            Toast.makeText(this, "Please fill in all fields",
Toast.LENGTH_SHORT).show();
            return;
        }

        SQLiteDatabase db = dbHelper.getWritableDatabase();
        ContentValues values = new ContentValues();
        values.put(CompanyContract.CompanyEntry.COLUMN_NAME_NAME,
name);
        values.put(CompanyContract.CompanyEntry.COLUMN_NAME_ADDRESS,
address);
```

```
        values.put(CompanyContract.CompanyEntry.COLUMN_NAME_PHONE,
phone);


        long newRowId =
db.insert(CompanyContract.CompanyEntry.TABLE_NAME, null, values);
        if (newRowId == -1) {
            Toast.makeText(this, "Error inserting company",
Toast.LENGTH_SHORT).show();
        } else {
            Toast.makeText(this, "Company inserted with ID " + newRowId,
Toast.LENGTH_SHORT).show();
            editTextName.getText().clear();
            editTextAddress.getText().clear();
            editTextPhone.getText().clear();
        }
    }


    private void showAllCompanies() {
        SQLiteDatabase db = dbHelper.getReadableDatabase();
        Cursor cursor = db.query(
                CompanyContract.CompanyEntry.TABLE_NAME,
                null,
                null,
                null,
                null,
                null,
                null
```

```
        );


        StringBuilder builder = new StringBuilder();

        while (cursor.moveToNext()) {

            long id =
cursor.getLong(cursor.getColumnIndexOrThrow(CompanyContract.CompanyEn
try._ID));

            String name =
cursor.getString(cursor.getColumnIndexOrThrow(CompanyContract.CompanyE
ntry.COLUMN_NAME_NAME));

            String address =
cursor.getString(cursor.getColumnIndexOrThrow(CompanyContract.CompanyE
ntry.COLUMN_NAME_ADDRESS));

            String phone =
cursor.getString(cursor.getColumnIndexOrThrow(CompanyContract.CompanyE
ntry.COLUMN_NAME_PHONE));

            builder.append("ID: ").append(id).append(", Name: ").append(name)

                    .append(", Address: ").append(address).append(", Phone:
").append(phone)

                    .append("\n");

        }

        cursor.close();


        textViewResults.setText(builder.toString());

    }

}
```

CompanyContract.java

```
import android.provider.BaseColumns;
```

```
public final class CompanyContract {

    private CompanyContract() {}

    public static class CompanyEntry implements BaseColumns {
        public static final String TABLE_NAME = "company";
        public static final String COLUMN_NAME_NAME = "name";
        public static final String COLUMN_NAME_ADDRESS = "address";
        public static final String COLUMN_NAME_PHONE = "phone";
    }
}
```

CompanyDBHelper.java

```
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class CompanyDBHelper extends SQLiteOpenHelper {

    public static final int DATABASE_VERSION = 1;
    public static final String DATABASE_NAME = "Company.db";

    private static final String SQL_CREATE_ENTRIES =
        "CREATE TABLE " + CompanyContract.CompanyEntry.TABLE_NAME + " ("
+
            CompanyContract.CompanyEntry._ID + " INTEGER PRIMARY KEY," +
```

```
            CompanyContract.CompanyEntry.COLUMN_NAME_NAME + "
TEXT," +
            CompanyContract.CompanyEntry.COLUMN_NAME_ADDRESS + "
TEXT," +
            CompanyContract.CompanyEntry.COLUMN_NAME_PHONE + "
TEXT)";

   private static final String SQL_DELETE_ENTRIES =
        "DROP TABLE IF EXISTS " +
CompanyContract.CompanyEntry.TABLE_NAME;

   public CompanyDBHelper(Context context) {
      super(context, DATABASE_NAME, null, DATABASE_VERSION);
   }

   @Override
   public void onCreate(SQLiteDatabase db) {
      db.execSQL(SQL_CREATE_ENTRIES);
   }

   @Override
   public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
      db.execSQL(SQL_DELETE_ENTRIES);
      onCreate(db);
   }
}
```

Slip 10

Q1. Create an Android Application that Demonstrate Switch and Toggle Button. [10 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="@color/white"
```

```
    android:gravity="center"
    tools:context=".MainActivity">


   <Switch
      android:id="@+id/switch1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_margin="50dp"
      android:text="Switch" />

   <ToggleButton
      android:id="@+id/toggleButton"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="ToggleButton" />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import  android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.Switch;
```

```
import android.widget.TextView;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;


public class MainActivity extends AppCompatActivity {



   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      Switch switch1 = findViewById(R.id.switch1);
      ToggleButton toggleButton = findViewById(R.id.toggleButton);

      switch1.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
         @Override
         public void onCheckedChanged(CompoundButton buttonView,
boolean isChecked) {
            if (isChecked)
            {
               Toast.makeText(MainActivity.this, "Switch ON",
Toast.LENGTH_SHORT).show();
            }
            else
            {
```

```
                Toast.makeText(MainActivity.this, "Switch OFF",
Toast.LENGTH_SHORT).show();
            }
        }
    });

    toggleButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Toast.makeText(MainActivity.this,
toggleButton.getText().toString(), Toast.LENGTH_SHORT).show();
        }
    });




  }
}
```

Q2. Create a fragment that has its own UI and enable your activities to communicate with fragments. [20 Marks]

OR

Q2. Demonstrate Array Adapter using List View to display list of fruits. [20 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@color/white"
    android:gravity="center"
    tools:context=".MainActivity">

   <ListView
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:id="@+id/list_view"

     />

</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
```

```
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;


public class MainActivity extends AppCompatActivity {


private String[]
arr={"Mango","Banana","Apple","Orange","Pineapple"};

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      ListView listView = findViewById(R.id.list_view);
      ArrayAdapter ad = new ArrayAdapter(this,
android.R.layout.simple_list_item_1,arr);
      listView.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
         @Override
         public void onItemClick(AdapterView<?> parent, View view,
int position, long id) {
            Toast.makeText(MainActivity.this, "Item "+(position+1)+"
clicked ", Toast.LENGTH_SHORT).show();
         }
      });
```

```
        listView.setAdapter(ad);



    }
}
```

Slip 11

Q.1 Create android application to change Font Size, Color and Font Family of String. [10 Marks]

Solution:

Solution:-

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Hello World!"
      android:textSize="20sp"
```

```
    android:textColor="#FF0000"
    android:fontFamily="sans-serif"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Q.2 Create First Activity to accept information like Student First Name, Middle Name, Last Name, Date of birth, Address, Email ID and display all information on Second Activity when user click on the Submit button. [20 Marks]

Solution:

(Note:- For this program we need to create two activities)

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="@color/white"
   android:gravity="center"
   tools:context=".MainActivity">

   <ScrollView
```

```
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    >
  <LinearLayout
```

```
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    android:orientation="vertical">

  <com.google.android.material.textfield.TextInputLayout
    android:layout_width="match_parent"
    android:layout_marginTop="50dp"
    android:layout_marginStart="50dp"
    android:layout_marginEnd="50dp"
    android:layout_marginBottom="20dp"
    android:hint="Enter First Name"
    app:boxBackgroundColor="@color/white"
    android:layout_height="wrap_content">

    <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"

      android:id="@+id/firstname"
       />
  </com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="match_parent"
    android:layout_marginStart="50dp"
  android:layout_marginEnd="50dp"
```

```
    android:layout_marginBottom="20dp"
      android:hint="Enter Middle Name"
      app:boxBackgroundColor="@color/white"
      android:layout_height="wrap_content">

      <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"

        android:id="@+id/middleName"
         />
    </com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
      android:layout_width="match_parent"
      android:layout_marginStart="50dp"
    android:layout_marginEnd="50dp"
    android:layout_marginBottom="20dp"
      android:hint="Enter Last Name"
      app:boxBackgroundColor="@color/white"
      android:layout_height="wrap_content">

      <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"

        android:id="@+id/lastName"
```

```
        />
    </com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
        android:layout_width="match_parent"
        android:layout_marginStart="50dp"
    android:layout_marginEnd="50dp"
    android:layout_marginBottom="20dp"
        android:hint="Enter DOB (DD/MM/YY)"
        app:boxBackgroundColor="@color/white"
        android:layout_height="wrap_content">

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"

            android:id="@+id/dob"
            />
    </com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
        android:layout_width="match_parent"
        android:layout_marginStart="50dp"
    android:layout_marginEnd="50dp"
    android:layout_marginBottom="20dp"
        android:hint="Enter Address"
        app:boxBackgroundColor="@color/white"
```

```
        android:layout_height="wrap_content">

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"

            android:id="@+id/addr"
             />
    </com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
        android:layout_width="match_parent"
        android:layout_marginStart="50dp"
    android:layout_marginEnd="50dp"
    android:layout_marginBottom="20dp"
        android:hint="Enter Email"
        app:boxBackgroundColor="@color/white"
        android:layout_height="wrap_content">

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"

            android:id="@+id/email"
             />
    </com.google.android.material.textfield.TextInputLayout>
```

```
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="50dp"
        android:id="@+id/button"

        android:text="Submit"
        />
    </LinearLayout>

    </ScrollView>


</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
```

```
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;


public class MainActivity extends AppCompatActivity {

   EditText fname,mname,lname,dob,addr,email;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);


      fname = findViewById(R.id.firstname);
      mname = findViewById(R.id.middleName);
      lname= findViewById(R.id.lastName);
      dob = findViewById(R.id.dob);
      addr = findViewById(R.id.addr);
      email = findViewById(R.id.email);

      Button submit = findViewById(R.id.button);
```

```
        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(getApplicationContext(),
Homepage.class);
                Bundle bundle = new Bundle();
                bundle.putString("fname",fname.getText().toString());
                bundle.putString("mname",mname.getText().toString());
                bundle.putString("lname",lname.getText().toString());
                bundle.putString("dob",dob.getText().toString());
                bundle.putString("addr",addr.getText().toString());
                bundle.putString("email",addr.getText().toString());
                intent.putExtras(bundle);
                startActivity(intent);

            }
        });

    }
}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
```

```
android:layout_width="match_parent"
android:orientation="vertical"
android:layout_gravity="center"
android:layout_height="match_parent"
tools:context=".Homepage">


<TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="First Name"
   android:layout_marginTop="50dp"
   android:layout_marginBottom="20dp"
   android:layout_marginEnd="50dp"
   android:layout_marginStart="50dp"
   android:id="@+id/fname"/>

<TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Middle Name"
   android:layout_marginBottom="20dp"
   android:layout_marginEnd="50dp"
   android:layout_marginStart="50dp"
   android:id="@+id/mname"/>
<TextView
   android:layout_width="wrap_content"
```

```
 android:layout_height="wrap_content"
 android:text="Last Name"
 android:layout_marginBottom="20dp"
 android:layout_marginEnd="50dp"
 android:layout_marginStart="50dp"
 android:id="@+id/lname"/>
<TextView
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:text="DOB:"
 android:layout_marginBottom="20dp"
 android:layout_marginEnd="50dp"
 android:layout_marginStart="50dp"
 android:id="@+id/dob"/>
<TextView
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:text="address"
 android:layout_marginBottom="20dp"
 android:layout_marginEnd="50dp"
 android:layout_marginStart="50dp"
 android:id="@+id/addr"/>
<TextView
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:text="email"
 android:layout_marginBottom="20dp"
```

```
        android:layout_marginEnd="50dp"
        android:layout_marginStart="50dp"
        android:id="@+id/email"/>


</LinearLayout>
```

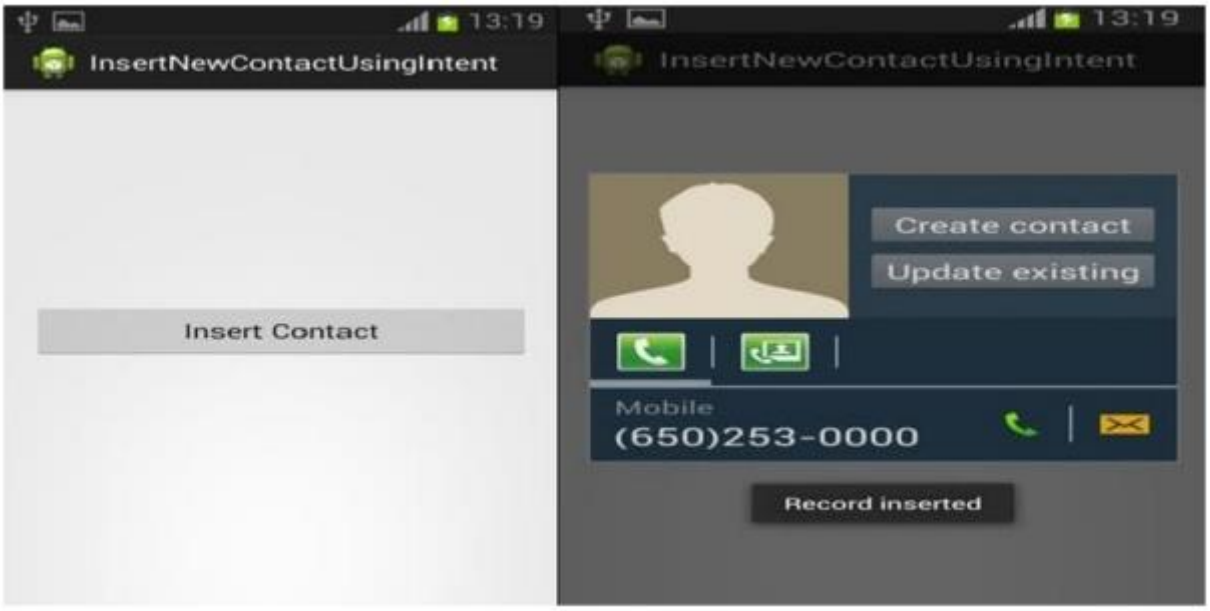
Homepage.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import org.w3c.dom.Text;

public class Homepage extends AppCompatActivity {

    TextView fname,mname,lname,dob,addr,email;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_homepage);

        fname = findViewById(R.id.fname);
        mname = findViewById(R.id.mname);
        lname= findViewById(R.id.lname);
        dob = findViewById(R.id.dob);
        addr = findViewById(R.id.addr);
        email = findViewById(R.id.email);
        Bundle bundle = getIntent().getExtras();

        fname.setText("First Name:- "+bundle.getString("fname"));
        mname.setText("Middle Name:- "+bundle.getString("mname"));
        lname.setText("Last Name:- "+bundle.getString("lname"));
        dob.setText("Date of Birth:- "+bundle.getString("dob"));
        addr.setText("Address:- "+bundle.getString("addr"));
        email.setText("Email:- "+bundle.getString("email"));
    }
}
```

OR

Q.2 Create new contact for designing following layout. [20 Marks]



Slip 12

Q1.Create a Simple Application Which Send —Hi‖ message from one activity to another with help of Button (Use Intent). [10 Marks]

Solution:

(Note:- For this program we need to create two activities)

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="#00B8D4"
   android:gravity="center"
```

```
    tools:context=".MainActivity">


    <com.google.android.material.textfield.TextInputLayout
        android:layout_width="match_parent"
        android:layout_margin="50dp"
        android:hint="Enter text to send"
        app:boxBackgroundColor="@color/white"
        android:layout_height="wrap_content">

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/text"
             />
    </com.google.android.material.textfield.TextInputLayout>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="50dp"
        android:id="@+id/button"
        android:text="Send"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.content.Intent;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;



public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);


      EditText text = findViewById(R.id.text);
      Button submit = findViewById(R.id.button);

      submit.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,
Homepage.class);
            intent.putExtra("message",text.getText().toString());
            Toast.makeText(MainActivity.this, "Message Sent..!!",
Toast.LENGTH_SHORT).show();
            startActivity(intent);
        }
      });

   }

}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".Homepage">
```

```
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Welcome to my App..!!"
      android:textSize="20sp"
      android:textColor="@color/black"
      android:id="@+id/output"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Homepage.java

```
     package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.widget.TextView;

import org.w3c.dom.Text;
```

```
public class Homepage extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_homepage);
        TextView out = findViewById(R.id.output);
        String message = getIntent().getStringExtra("message");

        out.setText(message);
    }
}
```

Q2. Create a custom "Contact" layout to hold multiple pieces of information, including: Photo, Name, Contact Number, E-mail id. [20 Marks]

OR

Q.2 Create an application to demonstrate date and time picker. [20 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">

   <Button
      android:id="@+id/btnPickDate"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Pick Date"
    android:layout_centerHorizontal="true"/>

  <Button
    android:id="@+id/btnPickTime"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Pick Time"
    android:layout_below="@id/btnPickDate"
    android:layout_marginTop="16dp"
    android:layout_centerHorizontal="true"/>

  <TextView
    android:id="@+id/textViewDateTime"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="18sp"
    android:textColor="@android:color/black"
    android:layout_below="@id/btnPickTime"
    android:layout_marginTop="16dp"
    android:layout_centerHorizontal="true"/>

</RelativeLayout>
```

```
import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.TextView;
import android.widget.TimePicker;
import androidx.appcompat.app.AppCompatActivity;
import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    private TextView textViewDateTime;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        textViewDateTime = findViewById(R.id.textViewDateTime);

        Button btnPickDate = findViewById(R.id.btnPickDate);
```

```
    btnPickDate.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            showDatePickerDialog();
        }
    });

    Button btnPickTime = findViewById(R.id.btnPickTime);
    btnPickTime.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            showTimePickerDialog();
        }
    });
}

private void showDatePickerDialog() {
    final Calendar calendar = Calendar.getInstance();
    int year = calendar.get(Calendar.YEAR);
    int month = calendar.get(Calendar.MONTH);
    int dayOfMonth = calendar.get(Calendar.DAY_OF_MONTH);

    DatePickerDialog datePickerDialog = new DatePickerDialog(
            this,
            new DatePickerDialog.OnDateSetListener() {
```

```
            @Override
            public void onDateSet(DatePicker view, int year, int month, int
dayOfMonth) {
                String date = dayOfMonth + "/" + (month + 1) + "/" + year;
                textViewDateTime.setText("Selected Date: " + date);
            }
        },
        year, month, dayOfMonth);
    datePickerDialog.show();
  }

  private void showTimePickerDialog() {
    final Calendar calendar = Calendar.getInstance();
    int hourOfDay = calendar.get(Calendar.HOUR_OF_DAY);
    int minute = calendar.get(Calendar.MINUTE);

    TimePickerDialog timePickerDialog = new TimePickerDialog(
        this,
        new TimePickerDialog.OnTimeSetListener() {
            @Override
            public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
                String time = hourOfDay + ":" + minute;
                textViewDateTime.setText("Selected Time: " + time);
            }
        },
        hourOfDay, minute, true);
```

```
        timePickerDialog.show();
    }
}
```

Slip 13

Q1. Create following Vertical Scroll View Creation in Android. [10 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">


   <ScrollView
      android:layout_width="match_parent"
      android:layout_height="match_parent"
```

```
 android:orientation="vertical"
>
<LinearLayout
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
  >
  <Button
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="30dp"
     android:text="Button 1"
     /><Button
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="30dp"
     android:text="Button 2"
     /><Button
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="30dp"
     android:text="Button 3"
     /><Button
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
```

```
android:layout_margin="30dp"
android:text="Button 4"
/><Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="30dp"
android:text="Button 5"
/><Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="30dp"
android:text="Button 6"
/><Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="30dp"
android:text="Button 7"
/><Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="30dp"
android:text="Button 8"
/><Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
        android:layout_margin="30dp"
        android:text="Button 9"
        /><Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:text="Button 10"
        />
    </LinearLayout>
  </ScrollView>


  <Button
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="30dp"
     android:id="@+id/send"
     android:text="Button 1"
    />


</LinearLayout>
```

Q2. Write a program to search a specific location on Google Map. [20 Marks]

Solution:

```
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MapsActivity">

   <fragment
      android:id="@+id/map"
      android:name="com.google.android.gms.maps.SupportMapFragment"
      android:layout_width="match_parent"
      android:layout_height="match_parent" />

   <EditText
      android:id="@+id/search_edit_text"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Search Location"
      android:layout_margin="16dp"
      android:padding="8dp"
      android:background="@android:drawable/editbox_background"/>

   <Button
      android:id="@+id/search_button"
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_below="@id/search_edit_text"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="16dp"
        android:layout_marginTop="8dp"
        android:text="Search"/>

</RelativeLayout>

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.fragment.app.FragmentActivity;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;

public class MapsActivity extends FragmentActivity implements
OnMapReadyCallback {

    private GoogleMap mMap;
    private EditText searchEditText;
```

```
    private Button searchButton;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_maps);


        searchEditText = findViewById(R.id.search_edit_text);
        searchButton = findViewById(R.id.search_button);


        SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager()
                .findFragmentById(R.id.map);
        mapFragment.getMapAsync(this);


        searchButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                searchLocation();
            }
        });
    }


    @Override
    public void onMapReady(GoogleMap googleMap) {
        mMap = googleMap;
```

```
    }

    private void searchLocation() {
        String location = searchEditText.getText().toString();
        // Use the Google Places API to search for the location
        // Obtain the LatLng coordinates of the location

        // For demonstration, let's assume the coordinates are obtained and stored in 'latLng'
        LatLng latLng = new LatLng(40.7128, -74.0060);

        // Add a marker at the searched location and move the camera
        mMap.clear(); // Clear previous markers
        mMap.addMarker(new MarkerOptions().position(latLng).title("Searched Location"));
        mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(latLng, 15)); // Zoom level 15
    }
}
```

OR

Q2. Write an application to accept a teacher name from user and display the names of students along with subjects to whom they are teaching.

Create table Student (sno , s_name,s_class,s_addr)

Teacher (tno, t_name, qualification, experience)

Student-Teacher has Many to Many relationship. [20 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">

   <EditText
      android:id="@+id/teacher_name_input"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter Teacher Name"
      android:inputType="text" />

   <Button
      android:id="@+id/search_button"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_below="@id/teacher_name_input"
      android:layout_marginTop="16dp"
      android:text="Search" />

   <TextView
      android:id="@+id/result_text"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
```

```
        android:layout_below="@id/search_button"
        android:layout_marginTop="16dp"
        android:text=""
        android:textSize="16sp" />

</RelativeLayout>
```

MainActivity.java

```
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText teacherNameInput;
    private Button searchButton;
    private TextView resultText;
    private DatabaseHelper dbHelper;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        teacherNameInput = findViewById(R.id.teacher_name_input);
        searchButton = findViewById(R.id.search_button);
        resultText = findViewById(R.id.result_text);
        dbHelper = new DatabaseHelper(this);

        searchButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                searchTeacher();
            }
        });
    }

    private void searchTeacher() {
        String teacherName = teacherNameInput.getText().toString().trim();

        if (teacherName.isEmpty()) {
            Toast.makeText(this, "Please enter a teacher name",
Toast.LENGTH_SHORT).show();
            return;
        }
```

```
        SQLiteDatabase db = dbHelper.getReadableDatabase();
        String[] projection = {"s_name", "subject"};
        String selection = "t_name=?";
        String[] selectionArgs = {teacherName};

        Cursor cursor = db.query("StudentTeacher", projection, selection,
selectionArgs, null, null, null);

        StringBuilder result = new StringBuilder();
        while (cursor.moveToNext()) {
            String studentName =
cursor.getString(cursor.getColumnIndex("s_name"));
            String subject = cursor.getString(cursor.getColumnIndex("subject"));
            result.append(studentName).append(" -
").append(subject).append("\n");
        }
        cursor.close();
        db.close();

        if (result.length() > 0) {
            resultText.setText(result.toString());
        } else {
            resultText.setText("No data found for the given teacher name.");
        }
    }
```

```
}
```

DatabaseHelper class

```
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DatabaseHelper extends SQLiteOpenHelper {

   private static final String DATABASE_NAME = "SchoolDB";
   private static final int DATABASE_VERSION = 1;

   public DatabaseHelper(Context context) {
      super(context, DATABASE_NAME, null, DATABASE_VERSION);
   }

   @Override
   public void onCreate(SQLiteDatabase db) {
      db.execSQL("CREATE TABLE IF NOT EXISTS Student (sno INTEGER PRIMARY
KEY, s_name TEXT, s_class TEXT, s_addr TEXT)");
      db.execSQL("CREATE TABLE IF NOT EXISTS Teacher (tno INTEGER PRIMARY
KEY, t_name TEXT, qualification TEXT, experience INTEGER)");
      db.execSQL("CREATE TABLE IF NOT EXISTS StudentTeacher (sno INTEGER,
tno INTEGER, subject TEXT, PRIMARY KEY (sno, tno))");
   }

   @Override
```

```
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS Student");
        db.execSQL("DROP TABLE IF EXISTS Teacher");
        db.execSQL("DROP TABLE IF EXISTS StudentTeacher");
        onCreate(db);
    }
}
```

Slip 14

Q1. Create a Simple Application which shows Life Cycle of Activity. [10 Marks] {Use log}.

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:background="#00B8D4"
   android:gravity="center"
   tools:context=".MainActivity">



   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/text"
      android:text="Activity Lifecycle"
      android:textColor="@color/white"
```

```
        android:textSize="20sp"
        android:layout_margin="20dp"
        />
</LinearLayout>
```

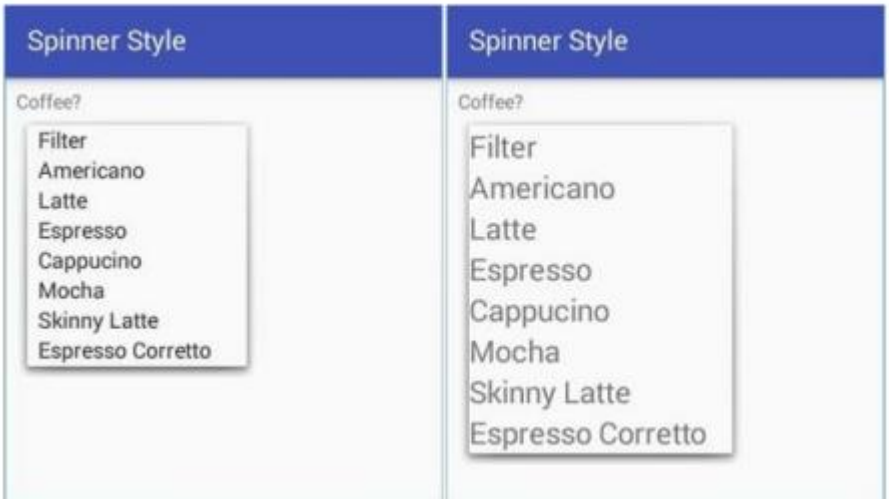
MainActivity.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
```

```
        Toast.makeText(this, "Activity Created..!!",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onPause() {
        super.onPause();
        Toast.makeText(this, "Activity Paused",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStart() {
        super.onStart();
        Toast.makeText(this, "Activity Started",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Toast.makeText(this, "Activity Paused",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onDestroy() {
```

```
        super.onDestroy();
        Toast.makeText(this, "Activity Destroyed",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onResume() {
        super.onResume();
        Toast.makeText(this, "Activity Resumed",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStop() {
        super.onStop();
        Toast.makeText(this, "Activity Stopped",
Toast.LENGTH_SHORT).show();
    }
}
```

Q2. Create the following layout which is changing android spinner text size with styles. [20 Marks]



Q2. Create an Android application to send email. [20 Marks]

Solution:

ActivityMain.xml

<?xml version="1.0" encoding="utf-8"?>

```
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/andr
oid"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   tools:context=".MainActivity">

  <EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:id="@+id/edit_text_to"
    android:hint="Send mail to.."
    />
  <EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:id="@+id/edit_text_subject"
    android:hint="Add Subject.."
    />

  <EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:id="@+id/edit_text_message"
    android:hint="Add Message.."
```

```
    />
  <Button
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="30dp"
     android:id="@+id/send"
     android:text="Send"
    />


</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {



   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);

        EditText to = findViewById(R.id.edit_text_to);
        EditText sub = findViewById(R.id.edit_text_subject);
        EditText message =
findViewById(R.id.edit_text_message);
        Button send = findViewById(R.id.send);

        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String list = to.getText().toString();
                String [] recipients = list.split(",");
                Intent i = new Intent(Intent.ACTION_SEND);
                i.putExtra(Intent.EXTRA_EMAIL,recipients);

i.putExtra(Intent.EXTRA_SUBJECT,sub.getText().toString());

i.putExtra(Intent.EXTRA_TEXT,message.getText().toString());
                i.setType("message|rfc822");
                startActivity(Intent.createChooser(i,"Choose an
email client: "));

            }
        });
    }
}
```

Slip 15

Q1. Design following-add a border to an Android Layout. [10 Marks]

Solution:-

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/andr
oid"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@color/black"
    android:gravity="center"
    tools:context=".MainActivity">

   <TextView
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:text="Hello World..!!"
      android:background="#2962FF"
      android:layout_margin="20dp"
```

```
android:textSize="40sp"
android:gravity="center"
android:textColor="@color/white"
/>


</LinearLayout>
```

Q2. Create simple application with Login Screen. On successful login, gives message go to next Activity (Without Using Database). [20 Marks]

Solution:

Solution:-

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>

<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

xmlns:app="http://schemas.android.com/apk/res-auto"

```
xmlns:tools="http://schemas.android.com/tools"

android:layout_width="match_parent"

android:layout_height="match_parent"

android:orientation="vertical"

android:background="#00B8D4"

android:gravity="center"

tools:context=".MainActivity">




   <EditText

      android:layout_width="match_parent"

      android:id="@+id/email"

      android:hint="Email"


      android:textSize="20sp"

      android:layout_margin="20dp"

      android:background="@color/white"

      android:layout_height="50dp"

       />
```

```
    <EditText
        android:layout_width="match_parent"
        android:id="@+id/password"
        android:hint="Password"

        android:layout_margin="20dp"
        android:textSize="20sp"
        android:inputType="textPassword"
        android:background="@color/white"
        android:layout_height="50dp"
         />


<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="submit"
    android:textColor="#00B8D4"
```

```
        android:layout_margin="20dp"
        android:background="@color/white"
        android:id="@+id/submit"
        />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Not a member ? Signup Now"
        android:textColor="@color/white"
        android:textSize="20sp"
        android:layout_margin="20dp"
        />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;

import  android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;



public class MainActivity extends AppCompatActivity {


   @Override

   protected void onCreate(Bundle savedInstanceState) {

      super.onCreate(savedInstanceState);

      setContentView(R.layout.activity_main);

      EditText email  = findViewById(R.id.email);

      EditText password = findViewById(R.id.password);

      Button submit = findViewById(R.id.submit);


      submit.setOnClickListener(new View.OnClickListener() {

         @Override
```

```
        public void onClick(View v) {


            if (email.getText().toString().isEmpty() ||
password.getText().toString().isEmpty())
            {


                Toast.makeText(MainActivity.this, "Fill all the fields..!!",
Toast.LENGTH_SHORT).show();



            }
            else
            {
                startActivity(new Intent(getApplicationContext(),
Homepage.class));
                finish();
            }


        }
      });
   }
}
```

Activity_homepage.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".Homepage">



    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome to my App..!!"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Homepage.java

```
package com.example.collegepractical;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class Homepage extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_homepage);
    }
}
```

OR

Q2. Create First Activity to accept information like Employee First Name, Middle Name, Last Name, Salary, Address, Email ID and display all information on Second Activity when user click on Submit button. [20 Marks]

Slip 16

Q1. Create an Android App, it reads the Students Details (Name, Surname, Class, Gender, Hobbies, Marks) and display the all information in another activity in table format on click of Submit button. [10 Marks]

Solution:

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">

   <EditText
      android:id="@+id/edit_name"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Name"
      android:layout_marginBottom="8dp"/>

   <EditText
      android:id="@+id/edit_surname"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Surname"
      android:layout_below="@id/edit_name"
      android:layout_marginBottom="8dp"/>

   <EditText
      android:id="@+id/edit_class"
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Class"
    android:layout_below="@id/edit_surname"
    android:layout_marginBottom="8dp"/>

<EditText
    android:id="@+id/edit_gender"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Gender"
    android:layout_below="@id/edit_class"
    android:layout_marginBottom="8dp"/>

<EditText
    android:id="@+id/edit_hobbies"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Hobbies"
    android:layout_below="@id/edit_gender"
    android:layout_marginBottom="8dp"/>

<EditText
    android:id="@+id/edit_marks"
    android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:hint="Marks"
        android:layout_below="@id/edit_hobbies"
        android:layout_marginBottom="8dp"/>

    <Button
        android:id="@+id/submit_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:layout_below="@id/edit_marks"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

</RelativeLayout>
```

MainActivity.java

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {


   EditText editName, editSurname, editClass, editGender, editHobbies,
editMarks;
   Button submitButton;


   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);


      editName = findViewById(R.id.edit_name);
      editSurname = findViewById(R.id.edit_surname);
      editClass = findViewById(R.id.edit_class);
      editGender = findViewById(R.id.edit_gender);
      editHobbies = findViewById(R.id.edit_hobbies);
      editMarks = findViewById(R.id.edit_marks);
      submitButton = findViewById(R.id.submit_button);


      submitButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            String name = editName.getText().toString();
            String surname = editSurname.getText().toString();
            String className = editClass.getText().toString();
            String gender = editGender.getText().toString();
```

```
            String hobbies = editHobbies.getText().toString();
            String marks = editMarks.getText().toString();

            Intent intent = new Intent(MainActivity.this,
DisplayDetailsActivity.class);
            intent.putExtra("Name", name);
            intent.putExtra("Surname", surname);
            intent.putExtra("Class", className);
            intent.putExtra("Gender", gender);
            intent.putExtra("Hobbies", hobbies);
            intent.putExtra("Marks", marks);
            startActivity(intent);
        }
      });
   }
}
```

activity_display_details.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:padding="16dp">
```

```
    <TextView
        android:id="@+id/title_textview"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Student Details"
        android:textSize="20sp"
        android:textStyle="bold"
        android:layout_marginBottom="16dp"/>

    <TableLayout
        android:id="@+id/details_table"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:stretchColumns="*"
        android:background="#eeeeee"
        android:padding="10dp"/>

</LinearLayout>
```

DisplayDetailsActivity.java:

```
import android.os.Bundle;
import android.widget.TableLayout;
import android.widget.TableRow;
import android.widget.TextView;
```

```
import androidx.appcompat.app.AppCompatActivity;

public class DisplayDetailsActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_display_details);

        TableLayout detailsTable = findViewById(R.id.details_table);

        String[] titles = {"Name", "Surname", "Class", "Gender", "Hobbies",
"Marks"};
        String[] values = {
                getIntent().getStringExtra("Name"),
                getIntent().getStringExtra("Surname"),
                getIntent().getStringExtra("Class"),
                getIntent().getStringExtra("Gender"),
                getIntent().getStringExtra("Hobbies"),
                getIntent().getStringExtra("Marks")
        };

        for (int i = 0; i < titles.length; i++) {
            TableRow row = new TableRow(this);

            TextView titleTextView = new TextView(this);
```

```
            titleTextView.setText(titles[i]);
            titleTextView.setPadding(10, 10, 10, 10);
            row.addView(titleTextView);

            TextView valueTextView = new TextView(this);
            valueTextView.setText(values[i]);
            valueTextView.setPadding(10, 10, 10, 10);
            row.addView(valueTextView);

            detailsTable.addView(row);
        }
    }
}
```

Q2. Create an Android Application that Demonstrate TimePicker and display Selected Time on TextView. [20 Marks]

Solution:

Time Picker (Create new Project)
Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"xmln
s:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">
   <TextView
      android:id="@+id/textView1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_above="@+id/button1"
      android:layout_alignParentStart="true"
      android:layout_alignParentEnd="true"
      android:layout_marginStart="30dp"
      android:layout_marginEnd="381dp"
      android:layout_marginBottom="102dp"
      android:text=""/>
   <Button
      android:id="@+id/button1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignParentBottom="true"
      android:layout_centerHorizontal="true"
      android:layout_marginBottom="20dp"
      android:text="@string/change_time" />
   <TimePicker
      android:id="@+id/timePicker"
      android:layout_width="match_parent"
      android:layout_height="614dp"
      android:layout_above="@+id/textView1"
      android:layout_centerHorizontal="true"
      android:layout_marginBottom="-189dp" />
</RelativeLayout>
```

MainActivity.java

```
package com.example.timepicker;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.TimePicker;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
   TextView textview1;
   TimePicker timepicker;
   Button changetime;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      textview1=(TextView)findViewById(R.id.textView1);
      timepicker=(TimePicker)findViewById(R.id.timePicker);
      //Uncomment the below line of code for 24 hour view
      timepicker.setIs24HourView(true);
      changetime=(Button)findViewById(R.id.button1);
      textview1.setText(getCurrentTime());
      changetime.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View view) {
            textview1.setText(getCurrentTime());
         }
      });
   }
   public String getCurrentTime(){
      String currentTime="Current Time:

"+timepicker.getCurrentHour()+":"+timepicker.getCurrentMinute();
      return currentTime;
```

```
    }
}
```

OR

Q2. Create a Simple calculator. [20 Marks]

Slip 17

Q1. Write an android code to make phone call using Intent. [10 Marks]

Solution:

Solution:

AndroidManifest.xml

// Add the following code in AndroidManifest.xml file

```
 <uses-feature
      android:name="android.hardware.telephony"
      android:required="false" />
   <uses-permission
android:name="android.permission.CALL_PHONE"/>
```

// //

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
android:background="#00B8D4"
android:gravity="center"
tools:context=".MainActivity">



<com.google.android.material.textfield.TextInputLayout
   android:layout_width="match_parent"
   android:layout_margin="50dp"
   android:hint="Enter your number"
   app:boxBackgroundColor="@color/white"
   android:layout_height="wrap_content">

   <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:inputType="phone"
      android:id="@+id/text"
       />
</com.google.android.material.textfield.TextInputLayout>

<Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
```

```
        android:layout_margin="50dp"
        android:id="@+id/button"
        android:text="call"
        />
</LinearLayout>
```

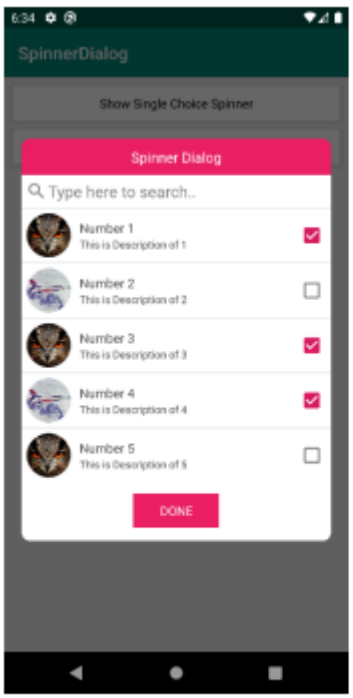
MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
```

```
public class MainActivity extends AppCompatActivity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);



      EditText text = findViewById(R.id.text);
      Button submit = findViewById(R.id.button);

      submit.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            final String[] permission =
{Manifest.permission.CALL_PHONE};
            if
(ContextCompat.checkSelfPermission(getApplicationContext(),
Manifest.permission.CALL_PHONE) !=
PackageManager.PERMISSION_GRANTED) {
               ActivityCompat.requestPermissions(MainActivity.this,
permission, 9);

            }

            if
(ContextCompat.checkSelfPermission(getApplicationContext(),
```

```
Manifest.permission.CALL_PHONE) ==
PackageManager.PERMISSION_GRANTED) {
                Intent intent = new
Intent(Intent.ACTION_CALL,Uri.parse("tel:
"+text.getText().toString()));
                startActivity(intent);
            }


        }
    });

  }
}
```

Q2. Create an android application that demonstrate Spinner.



[20 Marks]

OR

Q2. Construct an Android Application to accept a number and calculate Factorial and Sum of Digits of a given number using Context Menu. [20 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"

   android:layout_width="match_parent"

   android:layout_height="match_parent"

   android:padding="16dp">


   <EditText

      android:id="@+id/number_input"

      android:layout_width="match_parent"

      android:layout_height="wrap_content"

      android:hint="Enter a number"

      android:inputType="number"/>


   <Button

      android:id="@+id/calculate_button"

      android:layout_width="wrap_content"

      android:layout_height="wrap_content"

      android:layout_below="@id/number_input"

      android:layout_marginTop="16dp"

      android:text="Calculate"

      android:onClick="showContextMenu"/>
```

```
    <TextView
        android:id="@+id/result_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/calculate_button"
        android:layout_marginTop="16dp"
        android:text=""
        android:textSize="18sp"/>

</RelativeLayout>

import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText numberInput;
    private TextView resultText;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        numberInput = findViewById(R.id.number_input);
        resultText = findViewById(R.id.result_text);

        // Register the EditText for the context menu
        registerForContextMenu(resultText);
    }

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);
        menu.setHeaderTitle("Select Operation");
        menu.add(0, v.getId(), 0, "Calculate Factorial");
        menu.add(0, v.getId(), 0, "Calculate Sum of Digits");
    }

    @Override
    public boolean onContextItemSelected(MenuItem item) {
        String selectedOperation = item.getTitle().toString();
        String input = numberInput.getText().toString();
```

```
        switch (selectedOperation) {
            case "Calculate Factorial":
                if (input.isEmpty()) {
                    Toast.makeText(this, "Please enter a number",
Toast.LENGTH_SHORT).show();
                } else {
                    int number = Integer.parseInt(input);
                    long factorial = calculateFactorial(number);
                    resultText.setText("Factorial of " + number + " is " + factorial);
                }
                return true;
            case "Calculate Sum of Digits":
                if (input.isEmpty()) {
                    Toast.makeText(this, "Please enter a number",
Toast.LENGTH_SHORT).show();
                } else {
                    int number = Integer.parseInt(input);
                    int sumOfDigits = calculateSumOfDigits(number);
                    resultText.setText("Sum of digits of " + number + " is " +
sumOfDigits);
                }
                return true;
            default:
                return super.onContextItemSelected(item);
        }
    }
```

```
    private long calculateFactorial(int n) {
        if (n == 0 || n == 1) {
            return 1;
        }
        return n * calculateFactorial(n - 1);
    }

    private int calculateSumOfDigits(int n) {
        int sum = 0;
        while (n > 0) {
            sum += n % 10;
            n /= 10;
        }
        return sum;
    }
}
```

Slip 18

Q1. create an Android Application that Demonstrate Alert Dialog Box. [10 Marks]

Solution:

1. **Solution:-**

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:gravity="center"
   tools:context=".MainActivity">

  <Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Show Dialog Box"
    android:layout_gravity="center"
    android:id="@+id/dialog_button"
    />
</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.app.AlertDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
```

```
import android.widget.Button;

import android.widget.DatePicker;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

import
com.google.android.material.dialog.MaterialAlertDialogBuilder;


public class MainActivity extends AppCompatActivity {




  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    Button b = findViewById(R.id.dialog_button);
    b.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        new AlertDialog.Builder(MainActivity.this)
            .setTitle("Dialog Box")
            .setMessage("Welcome to Dialog Box")
            .setCancelable(false)
            .setPositiveButton("Ok", new
DialogInterface.OnClickListener() {
              @Override
              public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
              }
```

```
                    })
                    .show();
            }
        });

        }

    }
```

Q2. Create an Android Application that produce Notification. [20 Marks]

OR

Q2 Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity using Context Menu. [20 Marks]

Solution:

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:padding="16dp">

  <EditText
    android:id="@+id/number1_input"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter first number"
```

```
        android:inputType="numberDecimal"/>

    <EditText
        android:id="@+id/number2_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/number1_input"
        android:layout_marginTop="16dp"
        android:hint="Enter second number"
        android:inputType="numberDecimal"/>

    <Button
        android:id="@+id/calculate_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/number2_input"
        android:layout_marginTop="16dp"
        android:text="Calculate"
        android:onClick="showContextMenu"/>

</RelativeLayout>
```

activity_result.xml

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:id="@+id/power_result_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Power: "
        android:textSize="18sp"/>

    <TextView
        android:id="@+id/average_result_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Average: "
        android:textSize="18sp"/>

</LinearLayout>
```

MainActivity.java:

```
import android.content.Intent;
```

```
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText number1Input, number2Input;
    private Button calculateButton;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        number1Input = findViewById(R.id.number1_input);
        number2Input = findViewById(R.id.number2_input);
        calculateButton = findViewById(R.id.calculate_button);

        // Register the Button for the context menu
        registerForContextMenu(calculateButton);
```

```
    }

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);
        menu.setHeaderTitle("Select Operation");
        menu.add(0, v.getId(), 0, "Calculate Power");
        menu.add(0, v.getId(), 0, "Calculate Average");
    }

    @Override
    public boolean onContextItemSelected(MenuItem item) {
        String selectedOperation = item.getTitle().toString();
        String input1 = number1Input.getText().toString();
        String input2 = number2Input.getText().toString();

        switch (selectedOperation) {
            case "Calculate Power":
                if (input1.isEmpty() || input2.isEmpty()) {
                    Toast.makeText(this, "Please enter two numbers",
Toast.LENGTH_SHORT).show();
                } else {
                    double number1 = Double.parseDouble(input1);
                    double number2 = Double.parseDouble(input2);
                    double power = Math.pow(number1, number2);
```

```
                Intent powerIntent = new Intent(MainActivity.this,
ResultActivity.class);
                powerIntent.putExtra("Result", "Power: " + power);
                startActivity(powerIntent);
            }
            return true;
        case "Calculate Average":
            if (input1.isEmpty() || input2.isEmpty()) {
                Toast.makeText(this, "Please enter two numbers",
Toast.LENGTH_SHORT).show();
            } else {
                double number1 = Double.parseDouble(input1);
                double number2 = Double.parseDouble(input2);
                double average = (number1 + number2) / 2;
                Intent averageIntent = new Intent(MainActivity.this,
ResultActivity.class);
                averageIntent.putExtra("Result", "Average: " + average);
                startActivity(averageIntent);
            }
            return true;
        default:
            return super.onContextItemSelected(item);
    }
  }
}
```

ResultActivity.java:

```
import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class ResultActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_result);
        TextView powerResultText = findViewById(R.id.power_result_text);
        TextView averageResultText = findViewById(R.id.average_result_text);

        String result = getIntent().getStringExtra("Result");

        if (result.startsWith("Power")) {
            powerResultText.setText(result);
        } else if (result.startsWith("Average")) {
            averageResultText.setText(result);
        }
    }
}
```

Q1. Create an Android Application that on/off the bulb using Toggle Button. [10 Marks]

Solution:

1. **Solution:-**

   Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/andr
oid"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">

   <ToggleButton
      android:id="@+id/toggleButton"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:textOff="Turn On"
      android:textOn="Turn Off"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="50dp" />

   <ImageView
      android:id="@+id/lightBulb"
      android:layout_width="wrap_content"
```

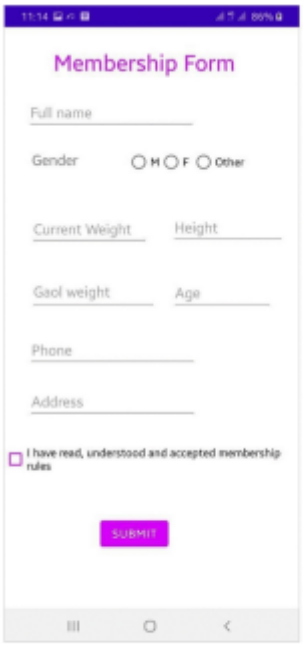
```
        android:layout_height="wrap_content"
        android:src="@drawable/light_off"
        android:layout_below="@id/toggleButton"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp" />

</RelativeLayout>
```

MainActivity.java

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.ToggleButton;

public class MainActivity extends AppCompatActivity {

    private ImageView lightBulb;
    private ToggleButton toggleButton;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        lightBulb = findViewById(R.id.lightBulb);
        toggleButton = findViewById(R.id.toggleButton);

        // Set initial state of light bulb
        lightBulb.setVisibility(View.INVISIBLE);
```

```
        // Set click listener for toggle button
        toggleButton.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View v) {
                toggleLight();
            }
        });
    }

    private void toggleLight() {
        if (toggleButton.isChecked()) {
            // Turn on the light
            lightBulb.setVisibility(View.VISIBLE);
        } else {
            // Turn off the light
            lightBulb.setVisibility(View.INVISIBLE);
        }
    }
}
```

Q2. Design Following Screens using Table Layout. Display the entered text on next activity.



[20 Marks]

OR

Q2. Create application to send SMS message. After sending message display delivery report of message. [20 Marks]

Solution:

Manifest Permissions:

<uses-permission android:name="android.permission.SEND_SMS" />

<uses-permission android:name="android.permission.RECEIVE_SMS" />

activity_main.xml

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout_width="match_parent"

android:layout_height="match_parent"

android:padding="16dp">

```
    <EditText
        android:id="@+id/phone_number_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Phone Number"
        android:inputType="phone" />

    <EditText
        android:id="@+id/message_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/phone_number_input"
        android:layout_marginTop="16dp"
        android:hint="Message" />

    <Button
        android:id="@+id/send_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/message_input"
        android:layout_marginTop="16dp"
        android:text="Send"
        android:onClick="sendMessage" />

</RelativeLayout>
```

MainActivity.java:

```
import android.app.PendingIntent;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

   EditText phoneNumberInput, messageInput;
   BroadcastReceiver deliveryBroadcastReceiver;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      phoneNumberInput = findViewById(R.id.phone_number_input);
```

```
        messageInput = findViewById(R.id.message_input);

        // Register BroadcastReceiver to track delivery status of the SMS
        deliveryBroadcastReceiver = new BroadcastReceiver() {
            @Override
            public void onReceive(Context context, Intent intent) {
                switch (getResultCode()) {
                    case AppCompatActivity.RESULT_OK:
                        Toast.makeText(context, "SMS delivered",
Toast.LENGTH_SHORT).show();
                        break;
                    case AppCompatActivity.RESULT_CANCELED:
                        Toast.makeText(context, "SMS not delivered",
Toast.LENGTH_SHORT).show();
                        break;
                }
            }
        };

        IntentFilter filter = new IntentFilter();
        filter.addAction("SMS_DELIVERED_ACTION");
        registerReceiver(deliveryBroadcastReceiver, filter);
    }

    @Override
    protected void onDestroy() {
```

```
        super.onDestroy();
        unregisterReceiver(deliveryBroadcastReceiver);
    }

    public void sendMessage(android.view.View view) {
        String phoneNumber = phoneNumberInput.getText().toString();
        String message = messageInput.getText().toString();

        if (phoneNumber.isEmpty() || message.isEmpty()) {
            Toast.makeText(this, "Please enter phone number and message",
Toast.LENGTH_SHORT).show();
            return;
        }

        SmsManager smsManager = SmsManager.getDefault();
        Intent deliveryIntent = new Intent("SMS_DELIVERED_ACTION");
        PendingIntent deliveryPendingIntent = PendingIntent.getBroadcast(this, 0,
deliveryIntent, PendingIntent.FLAG_UPDATE_CURRENT);

        smsManager.sendTextMessage(phoneNumber, null, message, null,
deliveryPendingIntent);
        Toast.makeText(this, "SMS sent", Toast.LENGTH_SHORT).show();
    }
}
```

Slip 20

Q1. Create Android Program to Change the Image on the Screen. [10 Marks]

Solution:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">

   <ImageView
      android:id="@+id/image_view"
      android:layout_width="200dp"
      android:layout_height="200dp"
      android:src="@drawable/image1"
      android:layout_centerInParent="true"/>

   <Button
      android:id="@+id/change_button"
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:text="Change Image"
        android:layout_below="@id/image_view"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

</RelativeLayout>

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private ImageView imageView;
    private Button changeButton;
    private int currentImageIndex = 1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```
imageView = findViewById(R.id.image_view);
changeButton = findViewById(R.id.change_button);

// Set initial image
imageView.setImageResource(R.drawable.image1);

changeButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        // Change image based on current index
        switch (currentImageIndex) {
            case 1:
                imageView.setImageResource(R.drawable.image2);
                currentImageIndex = 2;
                break;
            case 2:
                imageView.setImageResource(R.drawable.image3);
                currentImageIndex = 3;
                break;
            case 3:
                imageView.setImageResource(R.drawable.image1);
                currentImageIndex = 1;
                break;
        }
    }
```

```
        });
    }
}
```

Q2. Demonstrate Options Menu, Context Menu and Popup Menu in android. [20 Marks]

OR

Q2. Demonstrate Array Adapter using List View to display list of Country. [20 Marks]

Solution:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@color/white"
    android:gravity="center"
    tools:context=".MainActivity">

   <ListView
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:id="@+id/list_view"

     />

</LinearLayout>
```

MainActivity.java

```
package com.example.collegepractical;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
```

```
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;


public class MainActivity extends AppCompatActivity {


private String[] arr={"India","England","Australia","Japan","China"};

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      ListView listView = findViewById(R.id.list_view);
      ArrayAdapter ad = new ArrayAdapter(this,
android.R.layout.simple_list_item_1,arr);
      listView.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
         @Override
         public void onItemClick(AdapterView<?> parent, View view,
int position, long id) {
            Toast.makeText(MainActivity.this, "Item "+(position+1)+"
clicked ", Toast.LENGTH_SHORT).show();
         }
      });
```

```
        listView.setAdapter(ad);



    }
}
```