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CERTIFICATE

This is to certify that the Bonafide work done by **Ms. VECHALAPU TEJASWINI** bearing Roll No:**21501A05I5** of **III BTech II semester** in **COMPUTER SCIENCE AND ENGINEERING** for the course **MOBILE APPLICATION DEVELOPMENT** during the academic year 2023-2024.

NO. OF EXPERIMENTS RECORDED :_____

MARKS AWARDED :_____

Signature of staff Member In-charge

Date:_____

Signature of the Head of Department

Date:_____

ANNEXURE

EXPERIMENT-1

Aim: Build mobile application based on the concept activity life cycle with Custom Toast.

Description:

Activity:

The Activity class is a crucial component of an Android app, and the way activities are launched and put together is a fundamental part of the platform's application model. Unlike programming paradigms in which apps are launched with a main() method, the Android system initiates code in an Activity instance by invoking specific call back methods that correspond to specific stages of its lifecycle.

Activity Lifecycle:

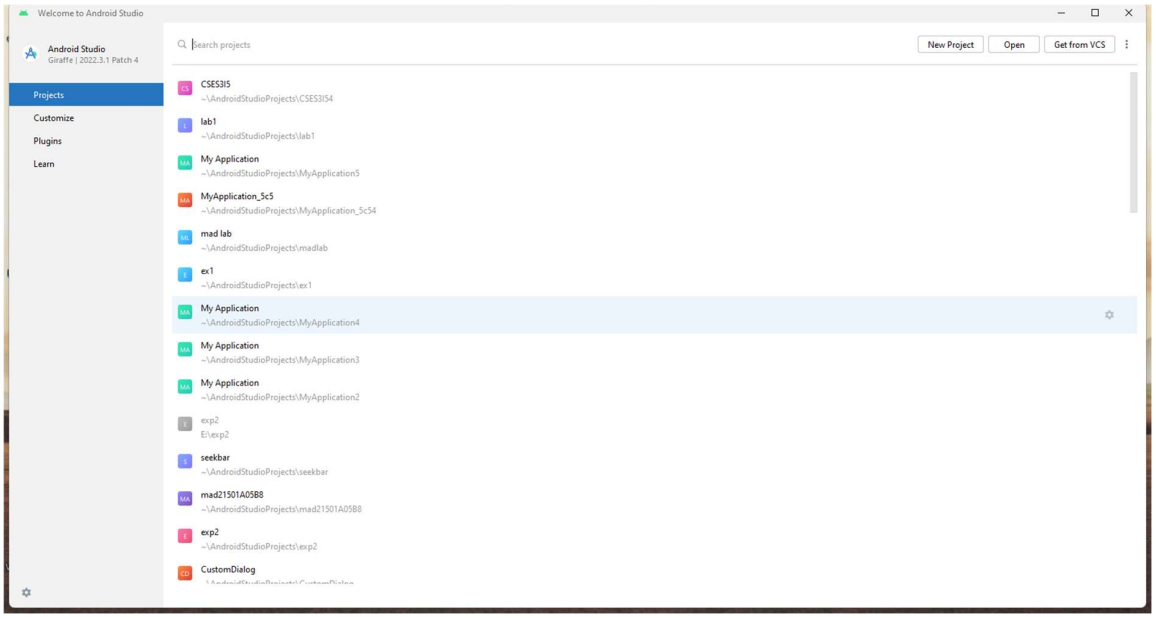
The activity lifecycle is implemented as a collection of methods the OS calls throughout the lifecycle of an activity. These methods allow developers to implement the functionality that is necessary to satisfy the state and resource management requirements of their applications.

Toast:

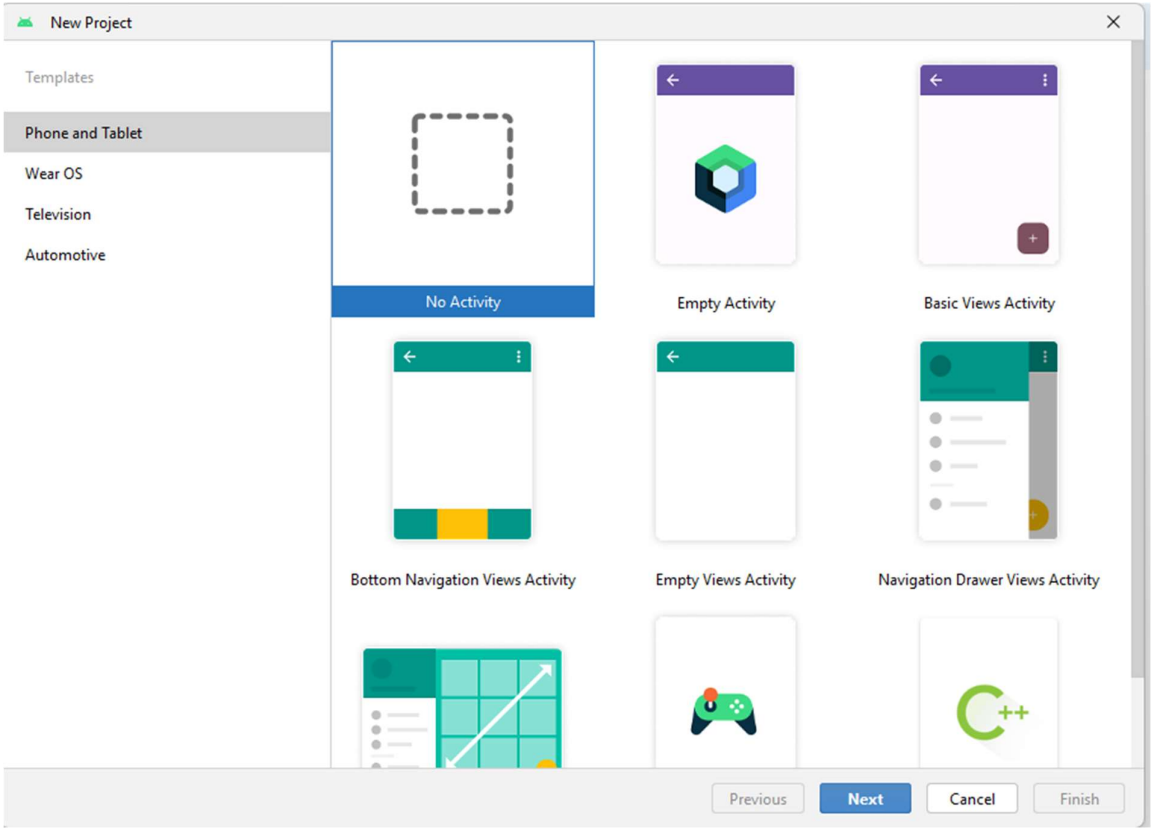
In Android, Toast is used when we required to notify user about an operation without expecting any user input. It displays a small popup for message and automatically fades out after timeout.

Procedure:

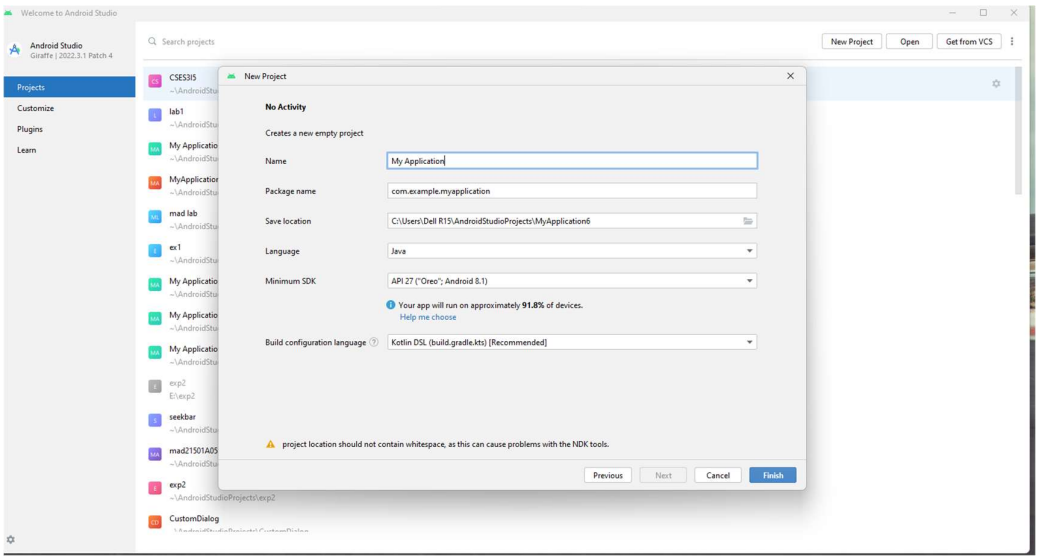
Create A new Project



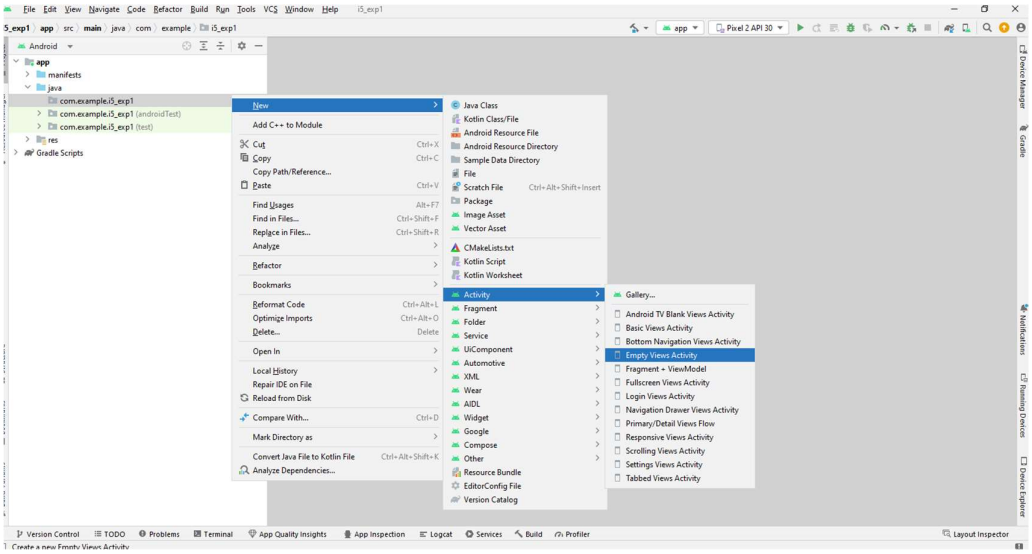
Click on Next



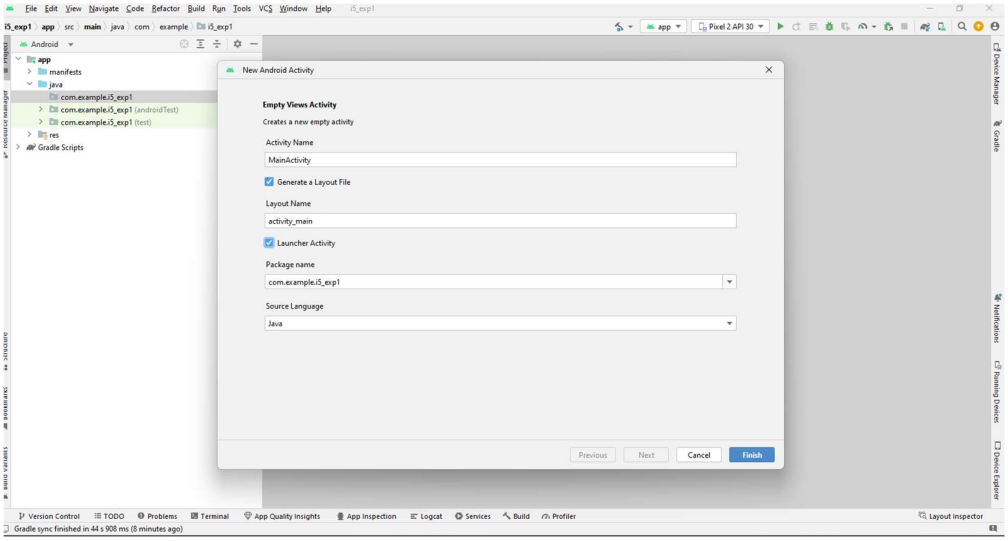
Name the project as i5_exp1



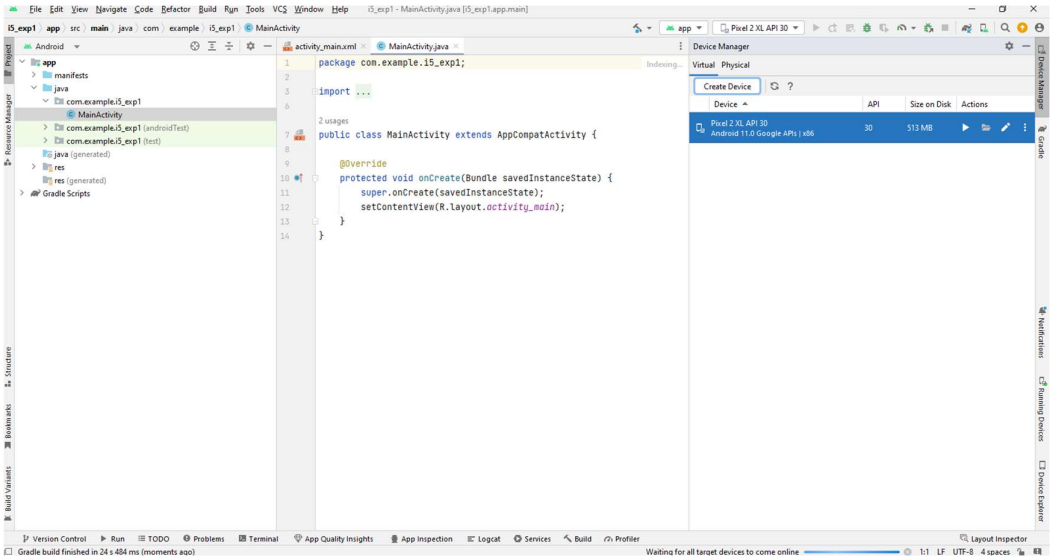
Create a new Main Activity



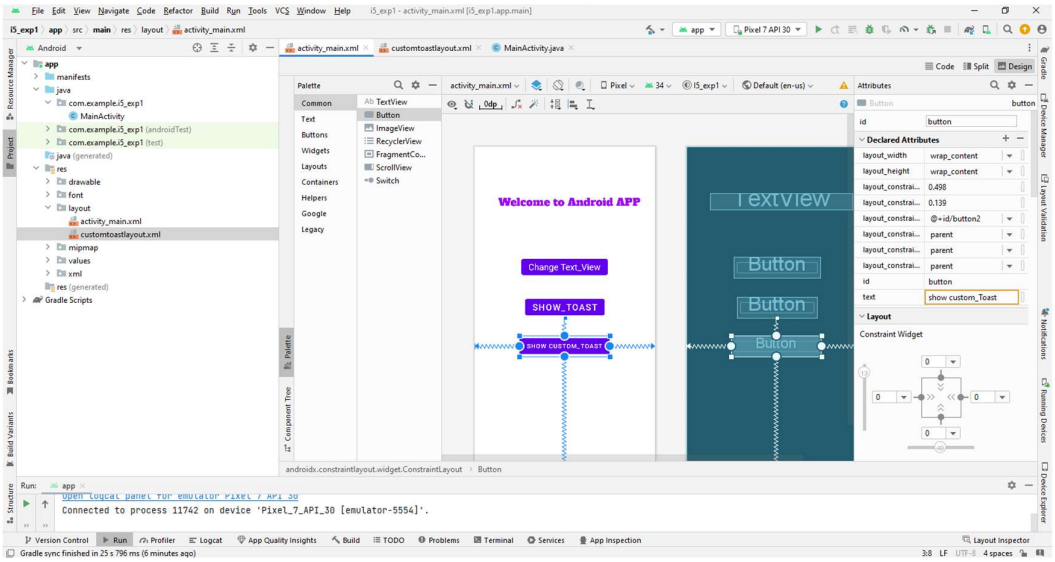
Click on Launched Activity



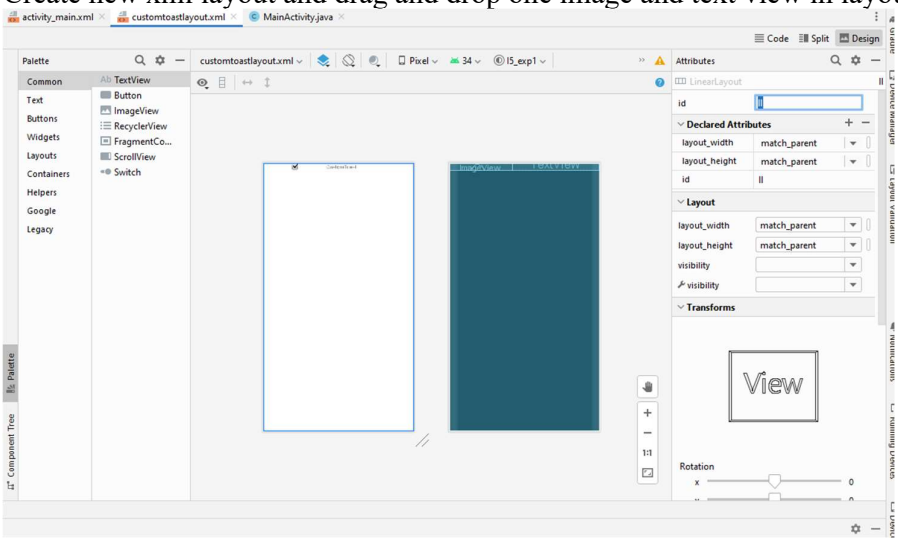
Create a device



In activity_main.xml we can drag text view and three buttons



Create new xml layout and drag and drop one image and text view in layout



MainAcivity.java

```
package com.example.i5_exp1;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  View cv;
  TextView tv;
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    LayoutInflater li=getLayoutInflater();
```

```
        cv=li.inflate(R.layout.customtoastlayout,findViewById(R.id.ll));
    }
    public void Changtv_onclick(View v){
        tv=this.findViewById(R.id.textView);
        tv.setText("Tejaswini APP");
    }
    public void showToast_onclick(View v){
        Toast.makeText(this,"Hi I am Toast",Toast.LENGTH_LONG).show();
    }
    public void showcustomtoast(View v){
        Toast t=new Toast(this);
        t.setDuration(Toast.LENGTH_LONG);
        t.setView(cv);
        t.show();
    }
}
```

Activity_main.xml

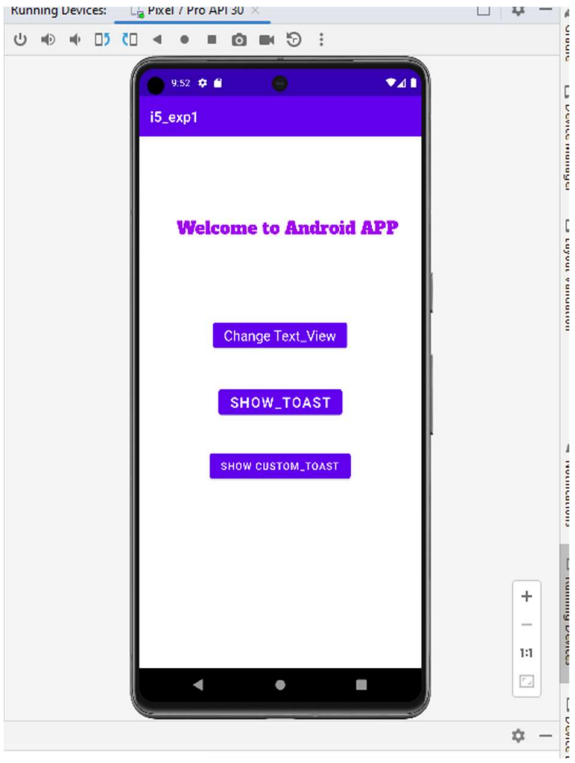
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="@font/alfa_slab_one"
        android:text="Welcome to Android APP"
        android:textAppearance="@style/TextAppearance.AppCompat.Body1"
        android:textColor="#9F0BED"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.62"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.152" />
    <Button
        android:id="@+id/button_1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="Changtv_onclick"
        android:text="Change Text_View"
        android:textAppearance="@style/TextAppearance.AppCompat.Display1"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.366" />
  <Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="showToast_onclick"
    android:text="Show_Toast"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
  <Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="showcustomtoast"
    android:text="show custom_Toast"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button2"
    app:layout_constraintVertical_bias="0.139" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

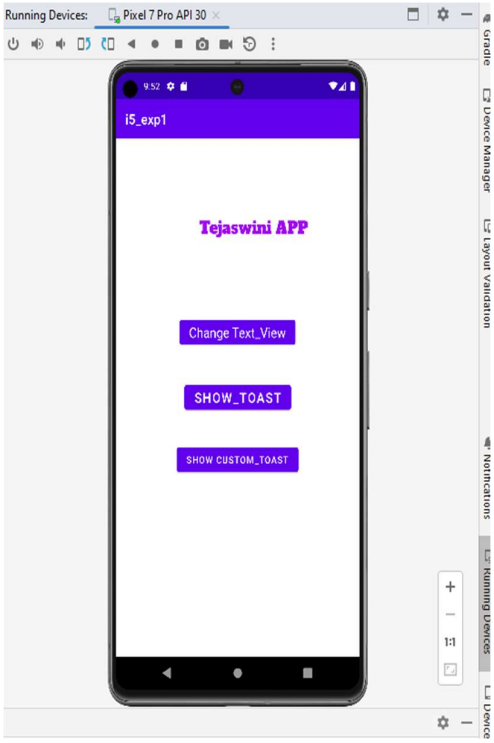
customtoastlayout.xml

```
<?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"
  android:id="@+id/ll"
  android:layout_width="match_parent"
  android:layout_height="match_parent">
  <ImageView
    android:id="@+id/imageView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    app:srcCompat="@android:drawable/checkbox_on_background" />
  <TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="CustomToast" />
</LinearLayout>
```

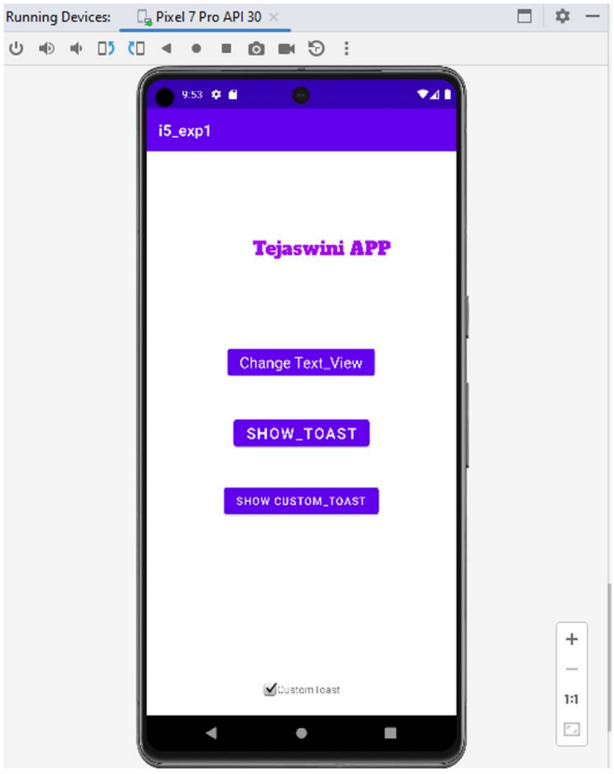
OUTPUT:



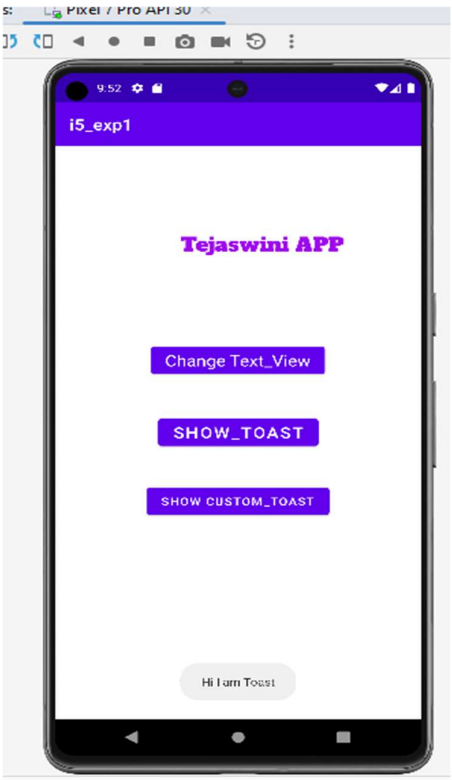
Click on Change Text View button



Click on Show Custom Toast button



Click on Show Toast button



EXPERIMENT-2

Aim: Build mobile application using different layouts (use any 3 layouts)

Description:

Android Layouts:

Android Layout is used to define the user interface that holds the UI controls or widgets that will appear on the screen of an android application or activity screen. Generally, every application is a combination of View and View Group. As we know, an android application contains a large number of activities, and we can say each activity is one page of the application. So, each activity contains multiple user interface components, and those components are the instances of the View and View Group. All the elements in a layout are built using a hierarchy of View and View Group objects.

View:

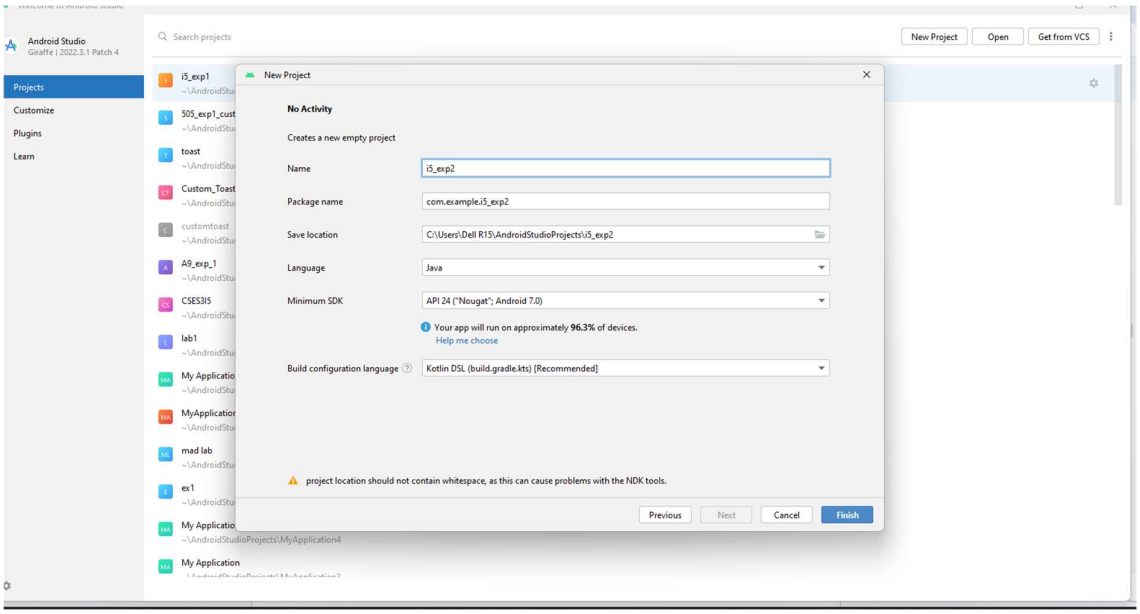
A View is defined as the user interface which is used to create interactive UI components such as Text View, Image View, Edit Text, Radio Button, etc., and is responsible for event handling and drawing. They are Generally Called Widgets.

View Group:

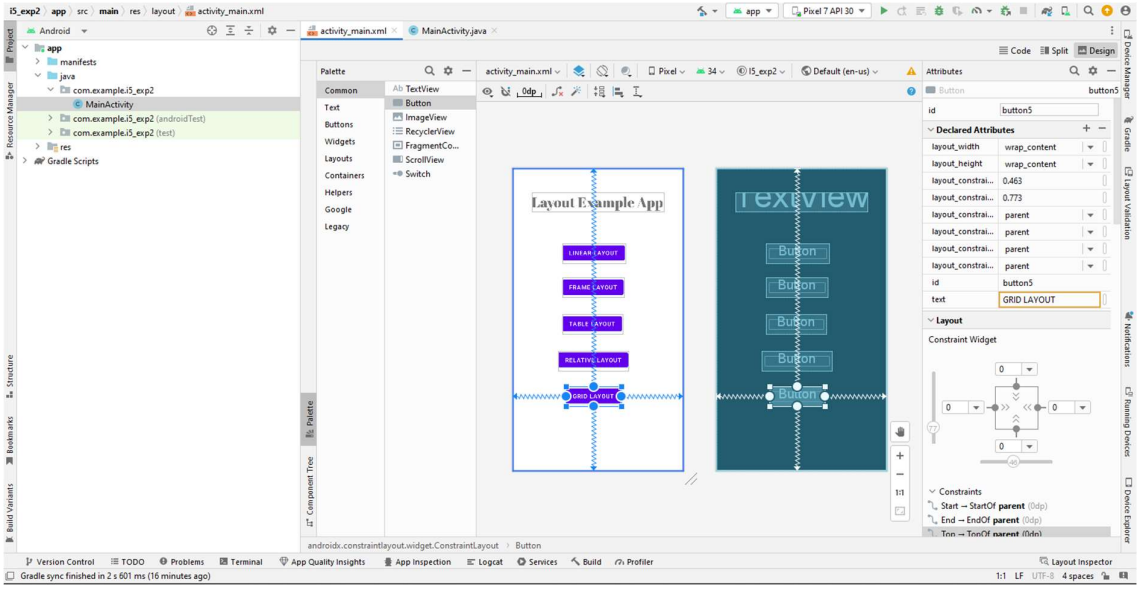
A View Group act as a base class for layouts and layouts parameters that hold other Views or View Groups and to define the layout properties. They are Generally Called layouts.

Procedure:

Create a new project as i5_exp2



Create a new activity is main Activity
In Activtiy we can drag and drop one textview and 5 buttons



MainActivity.java

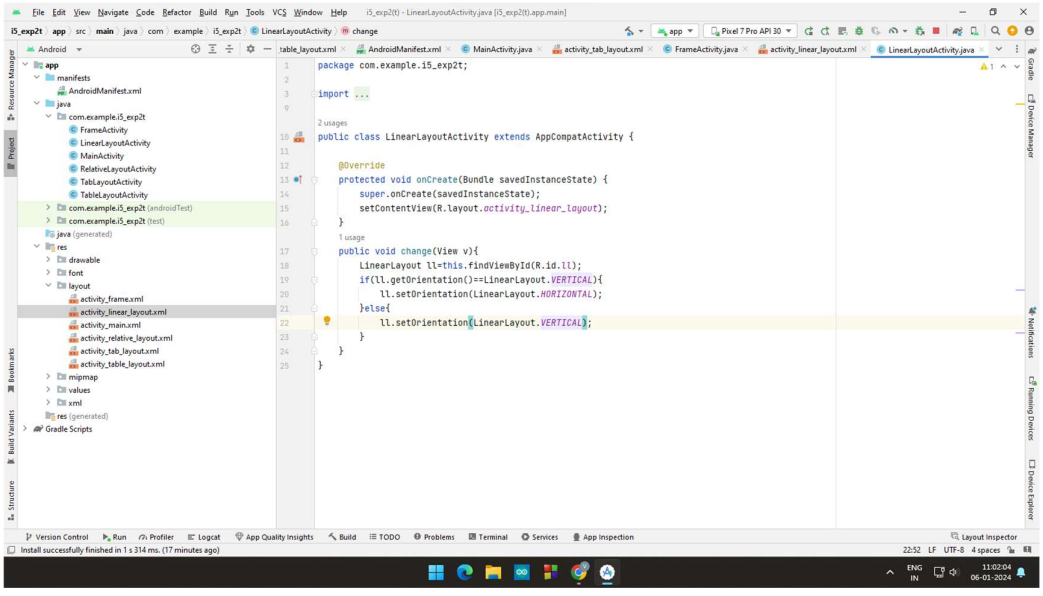
```
package com.example.i5_exp2t;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.LinearLayout;
import android.widget.TableLayout;
public class MainActivity extends AppCompatActivity {
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
  }
  public void onclick_btn_ll(View v){
     Intent i=new Intent(this, LinearLayoutActivity.class);
     this.startActivity(i);
  }
  public void onclick_btn_fl(View v){
     Intent i=new Intent(this, FrameActivity.class);
     this.startActivity(i);
  }
  public void onclick_btn_tl(View v){
     Intent i=new Intent(this, TableLayoutActivity.class);
     this.startActivity(i);
  }
  public void onclick_btn_rl(View v){
     Intent i=new Intent(this, RelativeLayoutActivity.class);
     this.startActivity(i);
  }
  public void onclick_btn_tab1(View v){
     Intent i=new Intent(this, TabLayoutActivity.class);
     this.startActivity(i);
  }}
```

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:id="@+id/textView"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:fontFamily="@font/abril_fatface"
     android:text="Layout Example App"
     android:textSize="34sp"
     app:layout_constraintBottom_toBottomOf="parent"
     app:layout_constraintEnd_toEndOf="parent"
     app:layout_constraintHorizontal_bias="0.473"
     app:layout_constraintStart_toStartOf="parent"
     app:layout_constraintTop_toTopOf="parent"
     app:layout_constraintVertical_bias="0.117" />
  <Button
     android:id="@+id/button"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:onClick="onclick_btn_l1"
     android:text="Linear layout"
     app:layout_constraintBottom_toBottomOf="parent"
     app:layout_constraintEnd_toEndOf="parent"
     app:layout_constraintHorizontal_bias="0.498"
     app:layout_constraintStart_toStartOf="parent"
     app:layout_constraintTop_toTopOf="parent"
     app:layout_constraintVertical_bias="0.304" />
  <Button
     android:id="@+id/button2"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:onClick="onclick_btn_f1"
     android:text="Frame Layout"
     app:layout_constraintBottom_toBottomOf="parent"
     app:layout_constraintEnd_toEndOf="parent"
     app:layout_constraintHorizontal_bias="0.498"
     app:layout_constraintStart_toStartOf="parent"
     app:layout_constraintTop_toTopOf="parent"
     app:layout_constraintVertical_bias="0.436" />
  <Button
     android:id="@+id/button3"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:onClick="onclick_btn_t1"
```

```
        android:text="Table Layout"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.566" />
    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="onclick_btn_r1"
        android:text="Relative Layout"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.718" />
    <Button
        android:id="@+id/button5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="onclick_btn_tab1"
        android:text="Lab Layout"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.859" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Create new five Activities



FrameActivity.java

```
package com.example.i5_exp2t;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class FrameActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_frame);
  }
}
<?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=".FrameActivity">
  <FrameLayout
    android:layout_width="409dp"
    android:layout_height="729dp"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp">
    <FrameLayout
      android:layout_width="match_parent"
      android:layout_height="match_parent">

      <ImageView
        android:id="@+id/imageView3"
        android:layout_width="match_parent"
        android:layout_height="747dp"
        app:srcCompat="@drawable/download" />
    </FrameLayout>
  </FrameLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

RelativeActivity.java

```
package com.example.i5_exp2t;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class RelativeLayoutActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_relative_layout);
  }
}
<?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=".RelativeLayoutActivity">
  <TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:text="Name:"
    android:textSize="34sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.063" />
  <EditText
    android:id="@+id/editTextText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.326"
    app:layout_constraintStart_toEndOf="@+id/textView2"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.062" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

TabLayoutActivity.java

```
package com.example.i5_exp2t;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class TabLayoutActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_tab_layout);
  }
}
<?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=".TabLayoutActivity">
```

```
  <com.google.android.material.tabs.TabLayout
      android:layout_width="409dp"
      android:layout_height="wrap_content"
      tools:layout_editor_absoluteX="1dp"
      tools:layout_editor_absoluteY="7dp">
      <com.google.android.material.tabs.TabItem
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="MESSAGE" />
      <com.google.android.material.tabs.TabItem
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="STATUS" />
      <com.google.android.material.tabs.TabItem
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="CALLS" />
  </com.google.android.material.tabs.TabLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

TableLayoutActivity.java

```
package com.example.i5_exp2t;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class TableLayoutActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_table_layout);
  }
}
```

```
<?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=".TableLayoutActivity">
  <TableLayout
      android:layout_width="409dp"
      android:layout_height="729dp"
      tools:layout_editor_absoluteX="1dp"
      tools:layout_editor_absoluteY="1dp">
      <TableRow
          android:layout_width="match_parent"
          android:layout_height="match_parent" >
          <Button
              android:id="@+id/button11"
```

```
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
        <Button
            android:id="@+id/button12"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
        <Button
            android:id="@+id/button13"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent" >
        <Button
            android:id="@+id/button6"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
        <Button
            android:id="@+id/button9"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
        <Button
            android:id="@+id/button10"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
    </TableRow>
  </TableLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

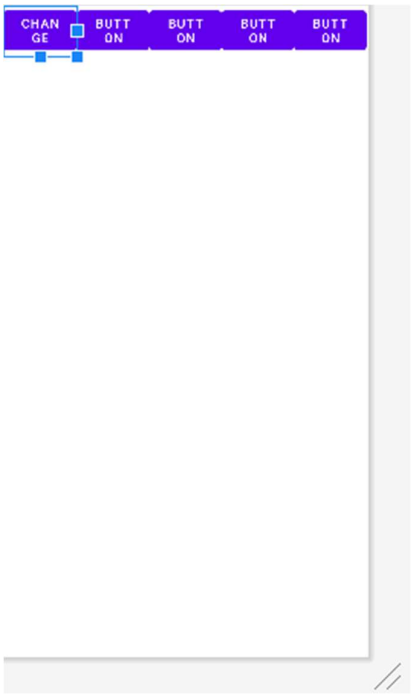
LinearlayoutActivity.java

```
package com.example.i5_exp2t;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.LinearLayout;
public class LinearLayoutActivity extends AppCompatActivity {
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_linear_layout);
  }
  public void ChangeOrientation(View v){
    LinearLayout ll=this.findViewById(R.id.ll);
    if(ll.getOrientation()==LinearLayout.VERTICAL){
      ll.setOrientation(LinearLayout.HORIZONTAL);
```

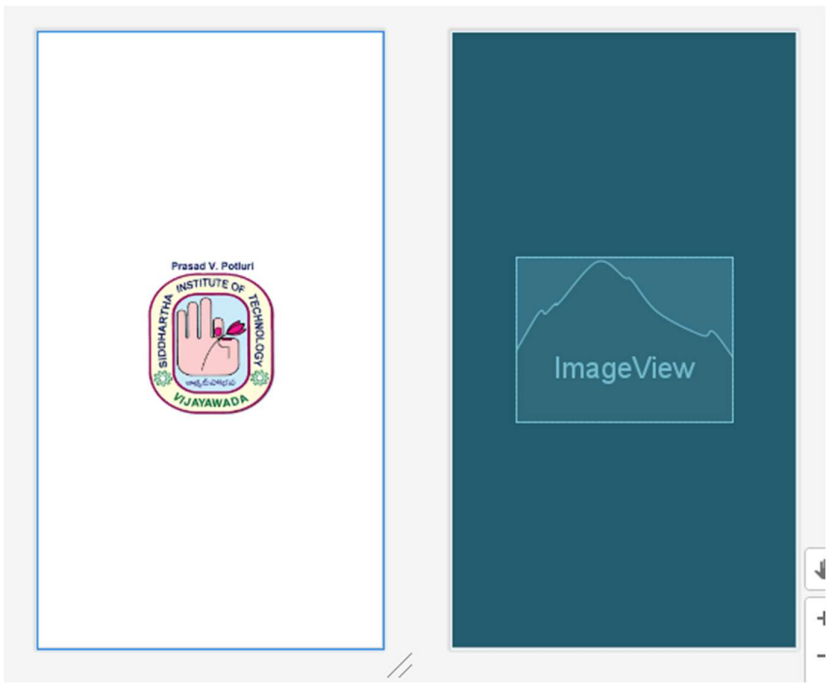
```
        }
        else{
            ll.setOrientation(LinearLayout.VERTICAL);
        }
    }
}
```

```
<?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:id="@+id/ll"
    android:layout_width="409dp"
    android:layout_height="729dp"
    android:orientation="vertical"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp">
    <TextView
        android:id="@+id/textView5"
        android:layout_width="match_parent"
        android:layout_height="71dp"
        android:text="Linear Layout"
        android:textColor="#DA0C52"
        android:textSize="60sp" />
    <Button
        android:id="@+id/button15"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="change"
        android:text="Change" />
    <Button
        android:id="@+id/button7"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button" />
    <Button
        android:id="@+id/button8"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button" />
    <Button
        android:id="@+id/button14"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button" />
    <Button
        android:id="@+id/button16"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button" />
</LinearLayout>
```

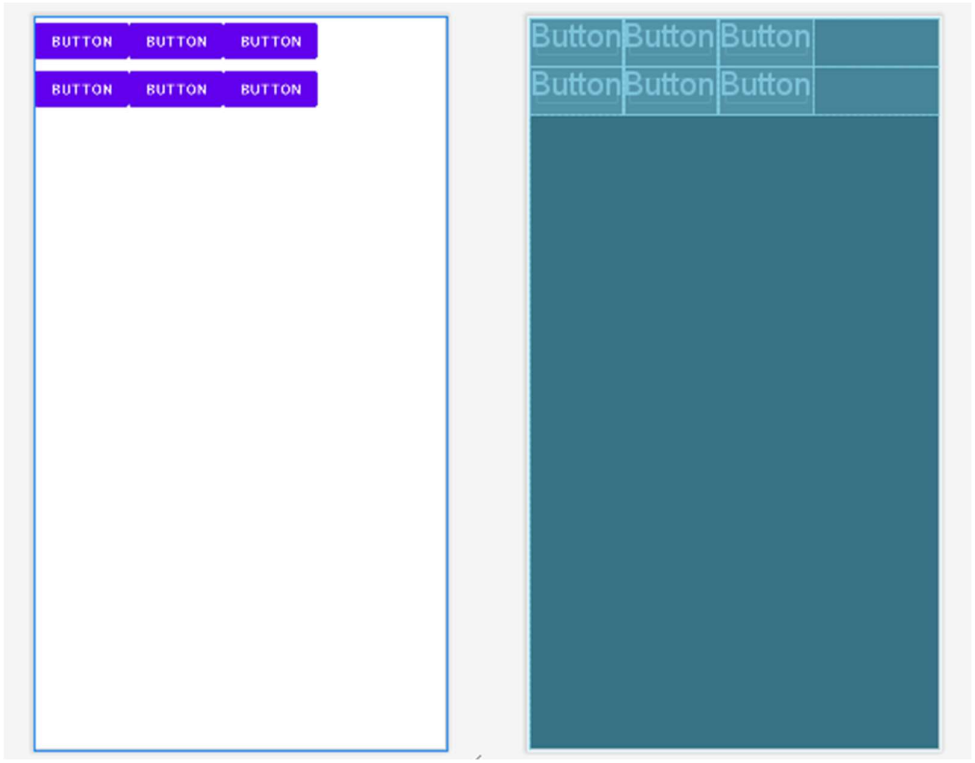
LinearLayoutActivit.xml



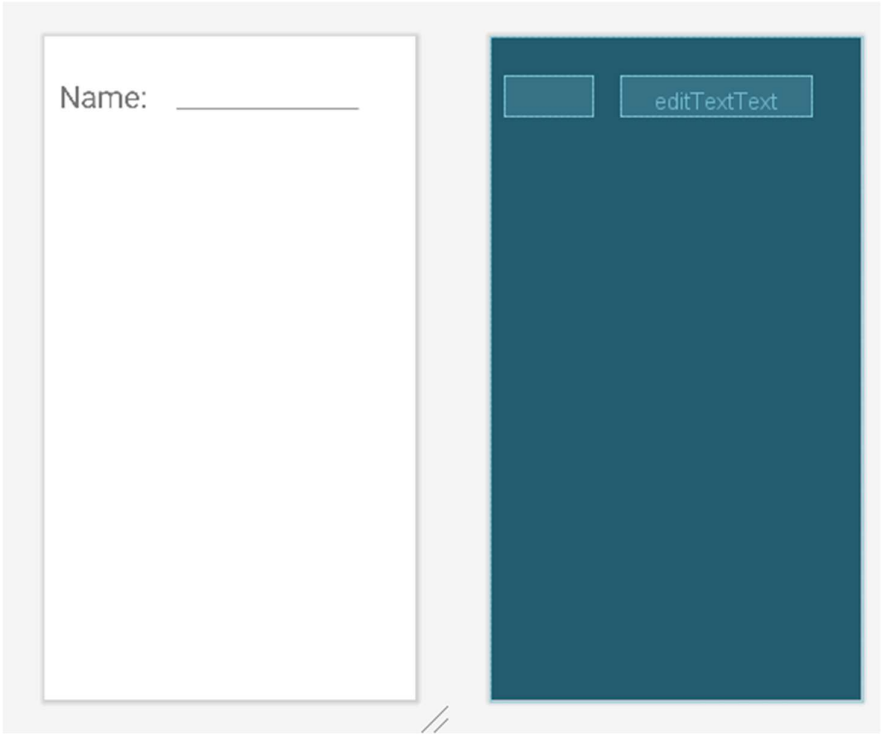
Frame_Activity.xml



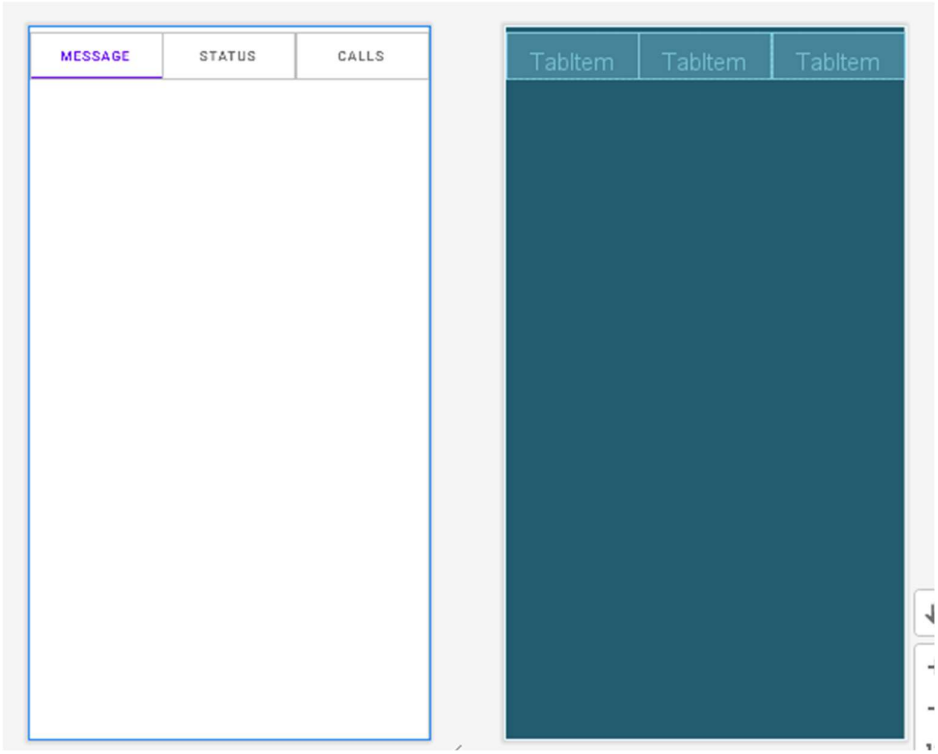
Table_Layout .xml



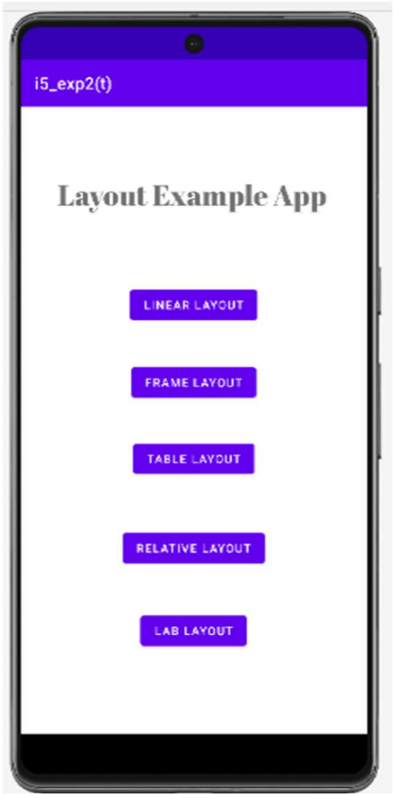
Relative_Layout.xml



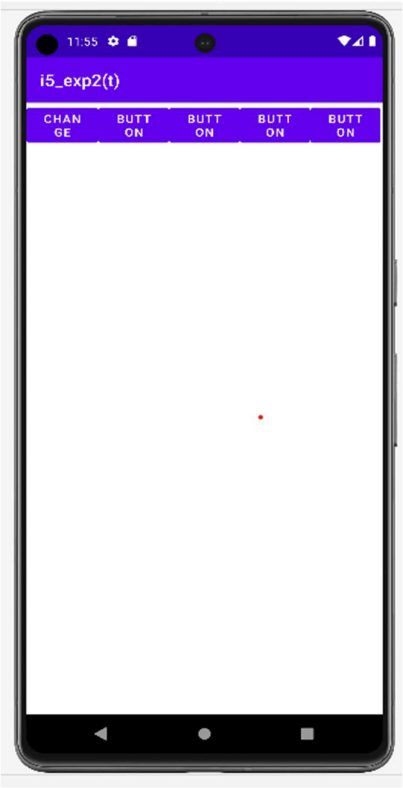
Lab Layout Activity.xml



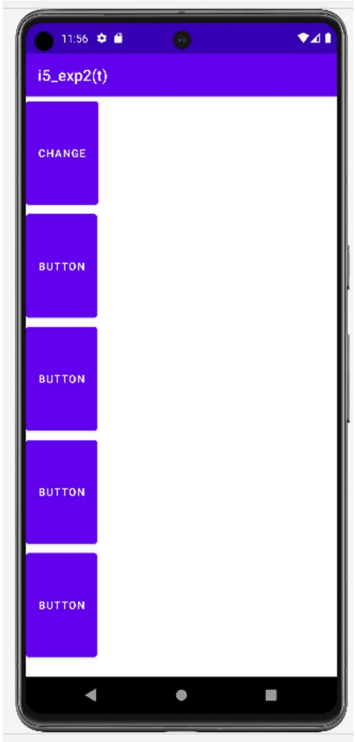
OUTPUT:



Click On Linear Layout button

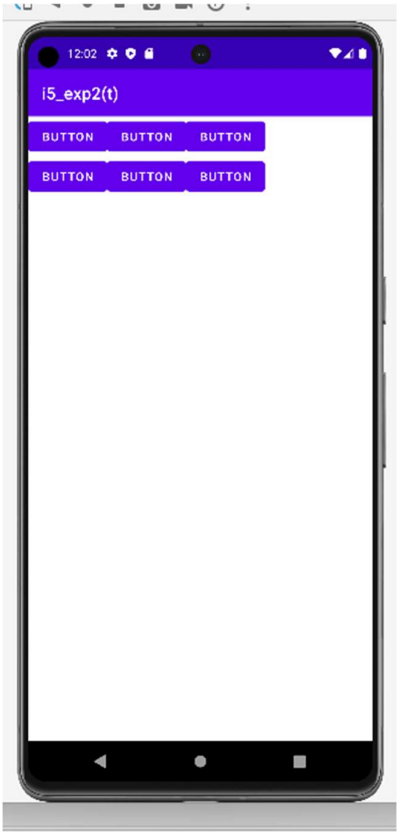


Click On Change

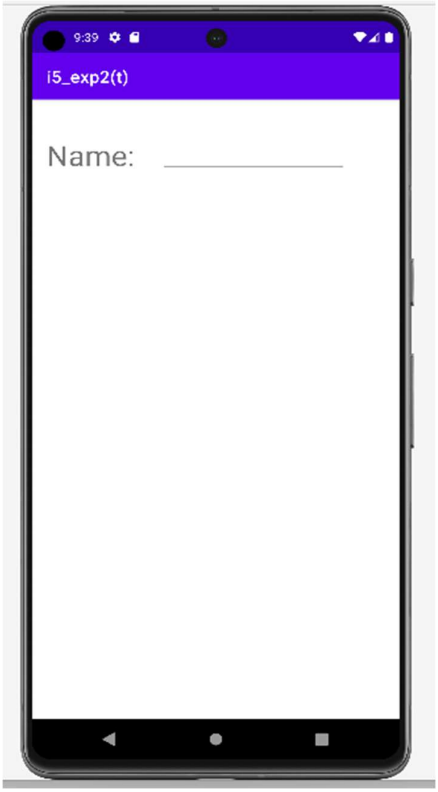


Click on Frame Layout

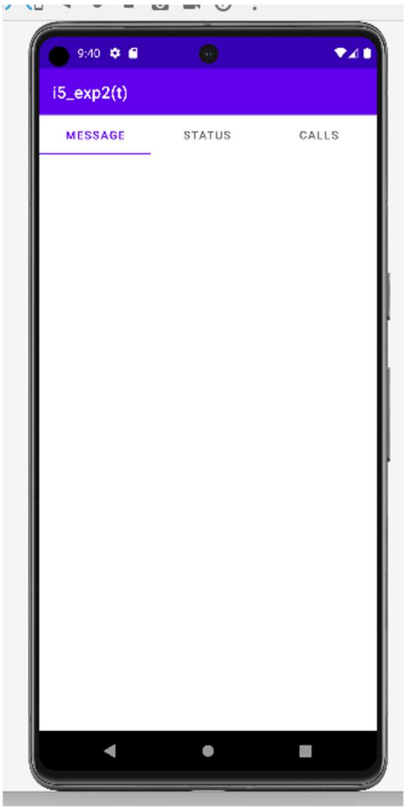
Table Layout Button



Relative Layout Button



Tab Layout button



EXPERIMENT-3

Aim: Build mobile application using different dialogs (use any 2 dialogs)

Description:

Dialogs:

A dialog is a small window that prompts the user to make a decision or enter additional information. A dialog doesn't fill the screen and is normally used for modal events that require users to take an action before they can proceed.

There are 3 types of dialogues:

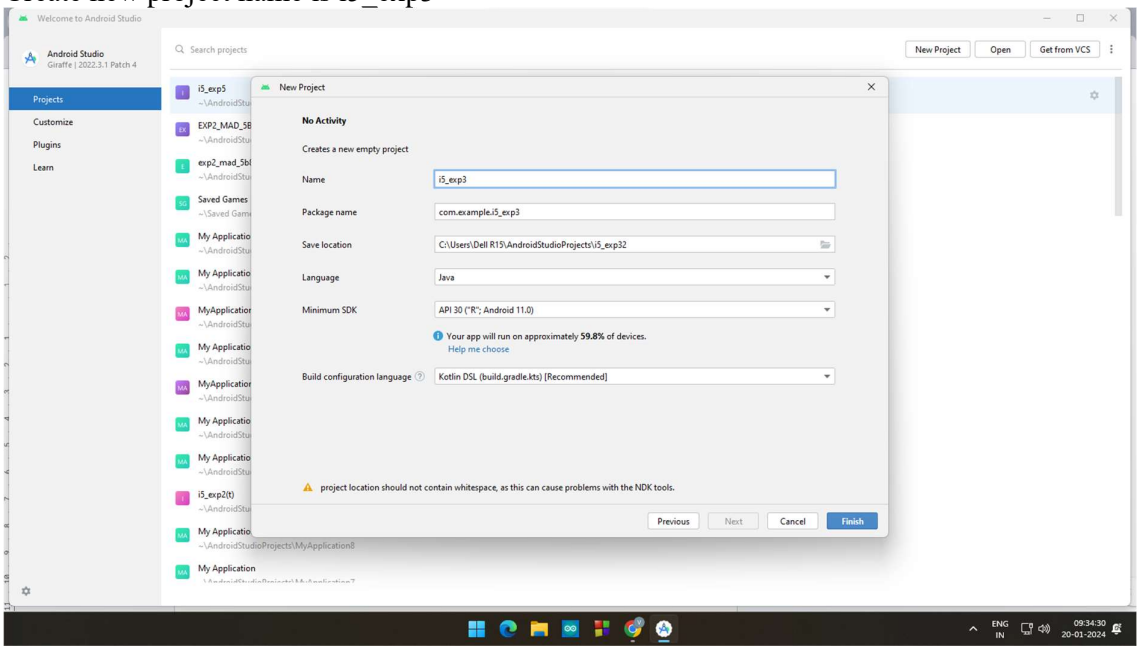
1. Time Picker Dialog

2. Date Picker Dialog

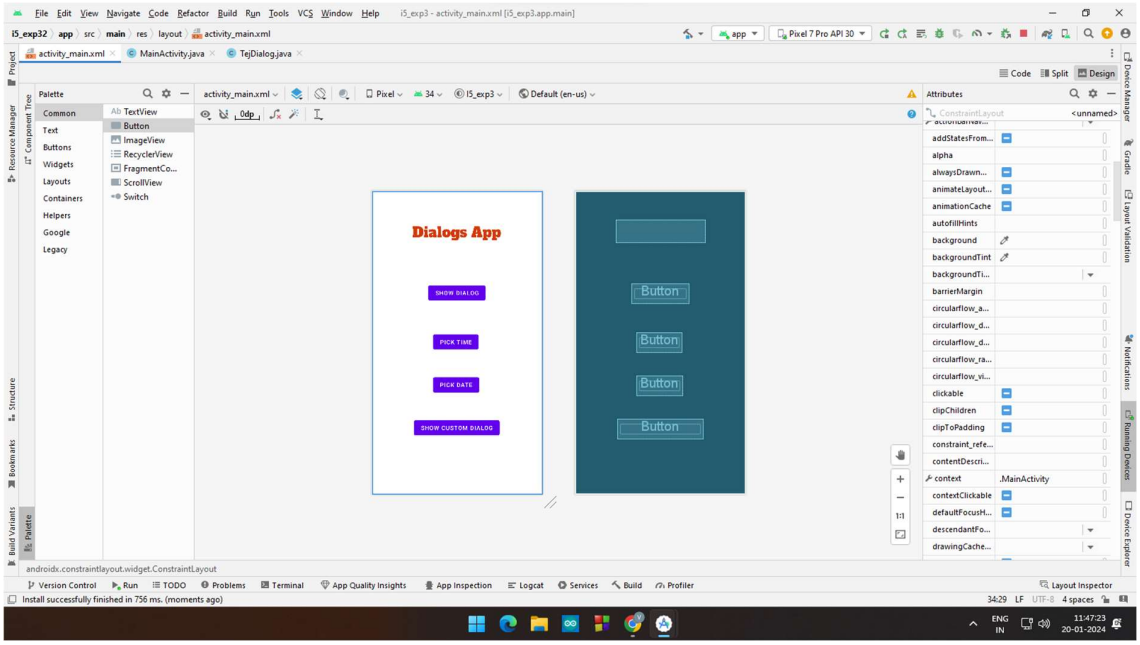
3. Alert Dialog

Procedure:

Create new project name is i5_exp3



Create a new activity and create a four button and one textview



MainActivity.java:

```
package com.example.i5_exp3;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;
import android.app.AlertDialog;
import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.DatePicker;
import android.widget.TimePicker;
import android.widget.Toast;
import java.util.Calendar;
public class MainActivity extends AppCompatActivity {
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
  }
  public void btn_pick_time(View v){
     int dh,dmin;
     Calendar c=Calendar.getInstance();
     dh=c.get(Calendar.HOUR);
     dmin=c.get(Calendar.MINUTE);
     TimePickerDialog tpd=new TimePickerDialog(this, new
TimePickerDialog.OnTimeSetListener() {
        @Override
        public void onTimeSet(TimePicker timePicker, int i, int i1) {
           Toast.makeText(MainActivity.this,i+"H:"+i1+"m",Toast.LENGTH_SHORT).show();
        }
```

```
        },dh,dmin,false);
        tpd.show();
    }
    public void btn_pick_date(View v){
        int dyear,dmon,dday;
        Calendar c=Calendar.getInstance();
        dyear=c.get(Calendar.YEAR);
        dmon=c.get(Calendar.MONTH);
        dday=c.get(Calendar.DAY_OF_MONTH);
        DatePickerDialog dpd=new DatePickerDialog(this, new
DatePickerDialog.OnDateSetListener() {
            @Override
            public void onDateSet(DatePicker datePicker, int i, int i1, int i2) {
                Toast.makeText(MainActivity.this,i2+"D:"+i1+"M:"+i+"Y",Toast.LENGTH_LONG).show
();
            }
        },dyear,dmon,dday);
        dpd.setTitle("Pick a date please");
        dpd.setMessage("Hello  I'm Teja");
        dpd.show();
    }
    public void btn_show_dialog(View v){
        Log.d("TEJDIALOG","btn_show_dialog:one");
        AlertDialog.Builder adb=new AlertDialog.Builder(this);
        Log.d("TEJDIALOG","btn_show_dialog:two");
        Toast.makeText(this,"Hi",Toast.LENGTH_SHORT).show();
        adb.setTitle("TejDialog");
        adb.setMessage("Hi This is the Dialog created by Teja");
        adb.setCancelable(true);
        adb.setPositiveButton("It's Ok", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Toast.makeText(MainActivity.this,"clicked on It's OK",Toast.LENGTH_SHORT).show();
            }
        });
        adb.setNegativeButton("Oh NO!", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Toast.makeText(MainActivity.this,"clicked on NO",Toast.LENGTH_SHORT).show();
            }
        });
        AlertDialog ad=adb.create();
        Log.d("TEJDIALOG","btn_show_dialog:three"+ad.toString());
        ad.show();
    }
    public void show_cus_dialog(View v){
        TejDialog td=new TejDialog();
        FragmentManager fmgr=getSupportFragmentManager();
        FragmentTransaction ftrans=fmgr.beginTransaction();
        td.show(fmgr,"TejDialog is a CustomDialog created by Teja");
    }
```

```
}
```

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">
  <Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="btn_pick_time"
    android:text="Pick Time"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.491"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.499" />
  <Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="btn_show_dialog"
    android:text="SHOW DIALOG"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.325" />
  <Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="btn_pick_date"
    android:text="PICK DATE"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.494"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.651" />
  <TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="@font/alfa_slab_one"
```

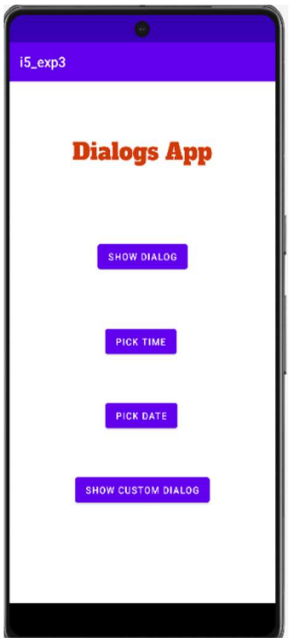
```
    android:text="Dialogs App"
    android:textColor="#D13B0B"
    android:textSize="34sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.102" />
  <Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="show_cus_dialog"
    android:text="SHOW CUSTOM DIALOG"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.803" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

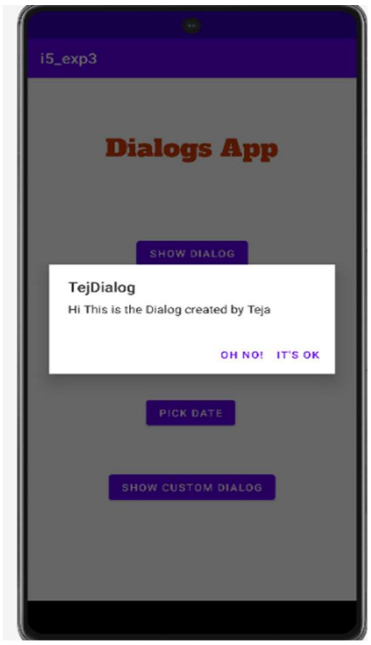
TejDialog.java:

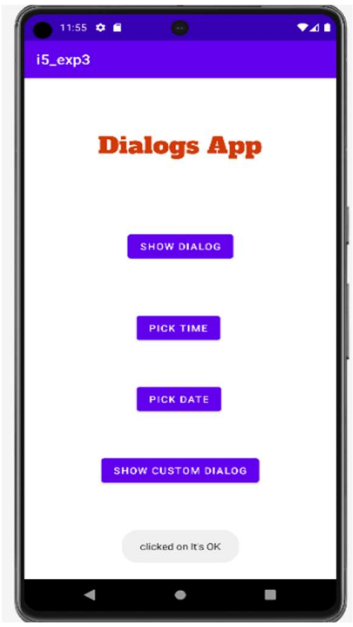
```
package com.example.i5_exp3;
import android.app.AlertDialog;
import android.app.Dialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.widget.Toast;
import androidx.fragment.app.DialogFragment;
public class TejDialog extends DialogFragment {
  AlertDialog.Builder adb;
  public Dialog onCreateDialog(Bundle b){
    try{
      adb=new AlertDialog.Builder(getActivity());
      adb.setMessage("Welcome to Dialogs in Android app");
      adb.setCancelable(true);
      adb.setTitle("TejDialog created by Teja");
      adb.setPositiveButton("Thank you", new DialogInterface.OnClickListener() {
        @Override
        public void onClick(DialogInterface dialogInterface, int i) {
          Toast.makeText(adb.getContext(), "Thank U", Toast.LENGTH_SHORT).show();
        }
      });
      adb.setNegativeButton("Bye Bye", new DialogInterface.OnClickListener() {
        @Override
        public void onClick(DialogInterface dialogInterface, int i) {
          Toast.makeText(adb.getContext(), "Bye", Toast.LENGTH_SHORT).show();
        }
      });
```

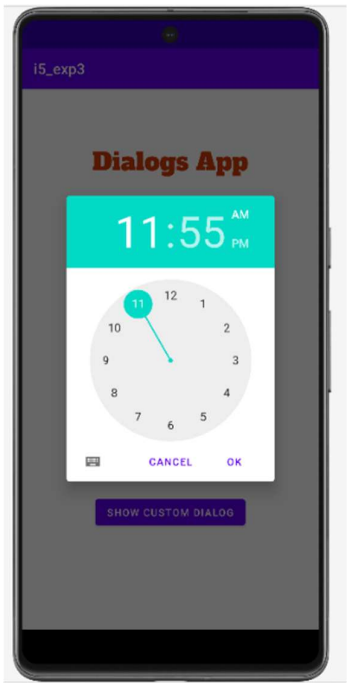
```
        }catch(Exception ex){
            Toast.makeText(adb.getContext(),ex.getMessage(), Toast.LENGTH_SHORT).show();
        }
        return adb.create();
    }
}
```

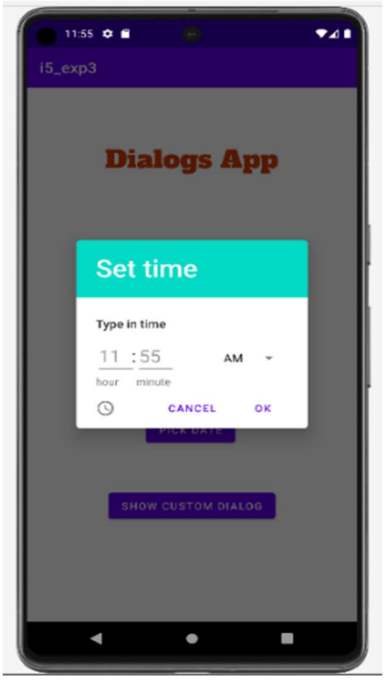
OUTPUT:

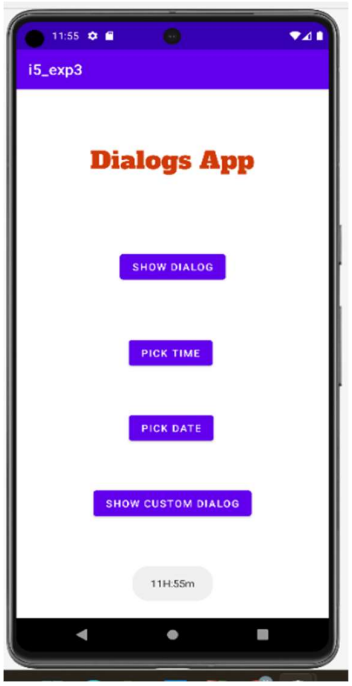


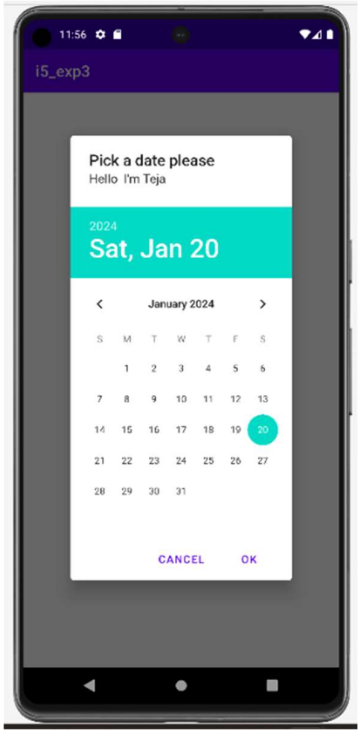


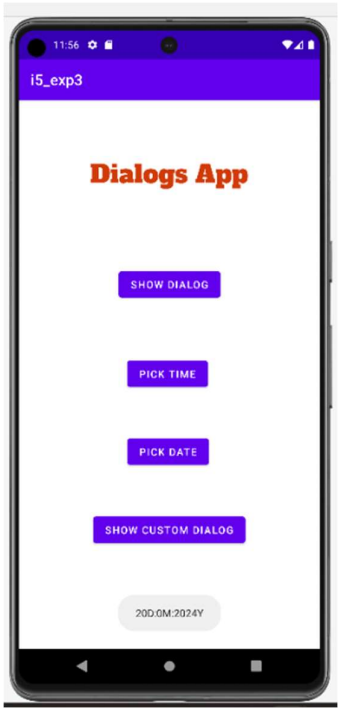


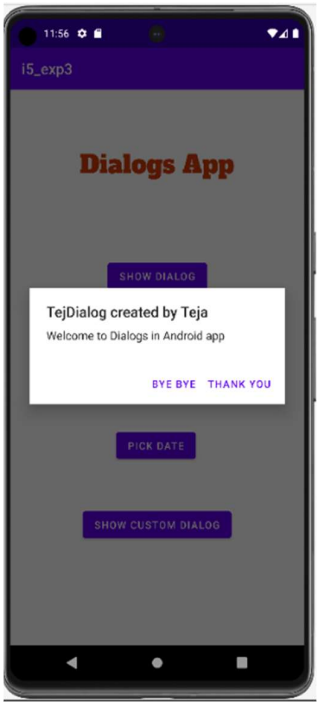


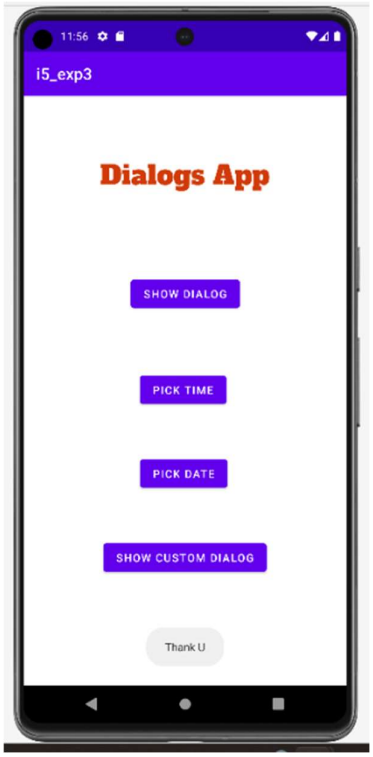





11:56
i5_exp3
Pick a date please
Hello I'm Teja
2024
Sat, Jan 20
January 2024
CANCEL
OK


11:56
i5_exp3
Dialogs App
SHOW DIALOG
PICK TIME
PICK DATE
SHOW CUSTOM DIALOG
20D:0M:2024Y


11:56
i5_exp3
Dialogs App
SHOW DIALOG
TejDialog created by Teja
Welcome to Dialogs in Android app
BYE BYE
THANK YOU
PICK DATE
SHOW CUSTOM DIALOG


11:56
i5_exp3
Dialogs App
SHOW DIALOG
PICK TIME
PICK DATE
SHOW CUSTOM DIALOG
Thank U

EXPERIMENT-3.1

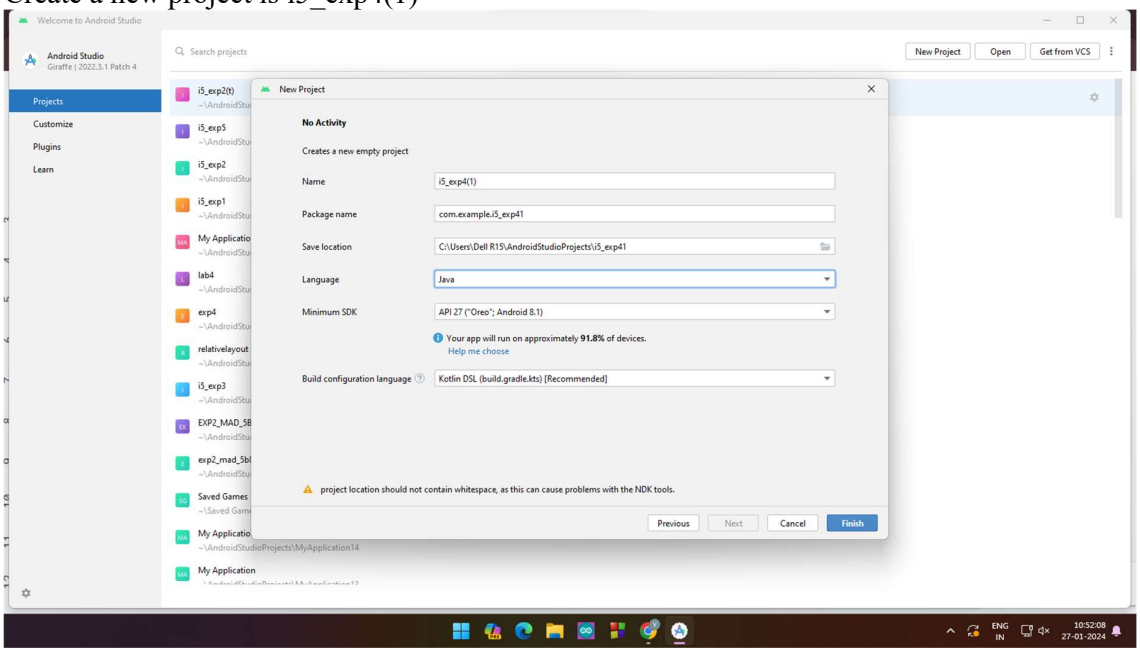
Aim: Build mobile application using List View

Description:

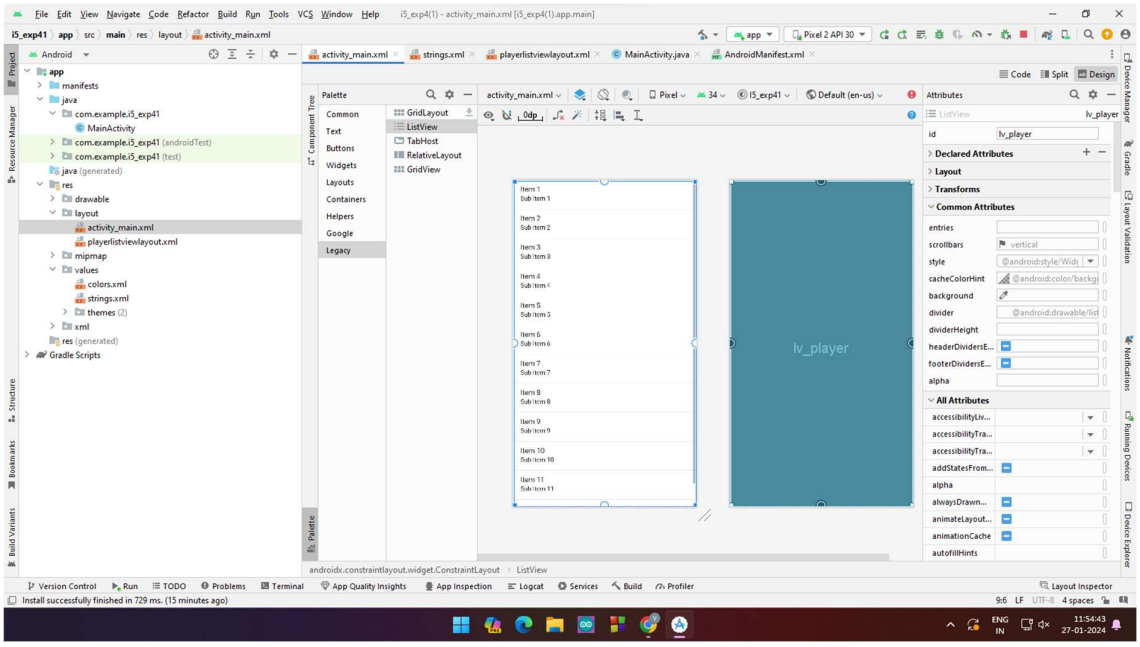
List View is a View Group that is used to display the list of items in multiple rows and contains an adapter that automatically inserts the items into the list. The main purpose of the adapter is to fetch data from an array or database and insert each item that placed into the list for the desired result.

Procedure:

Create a new project is i5_exp4(1)



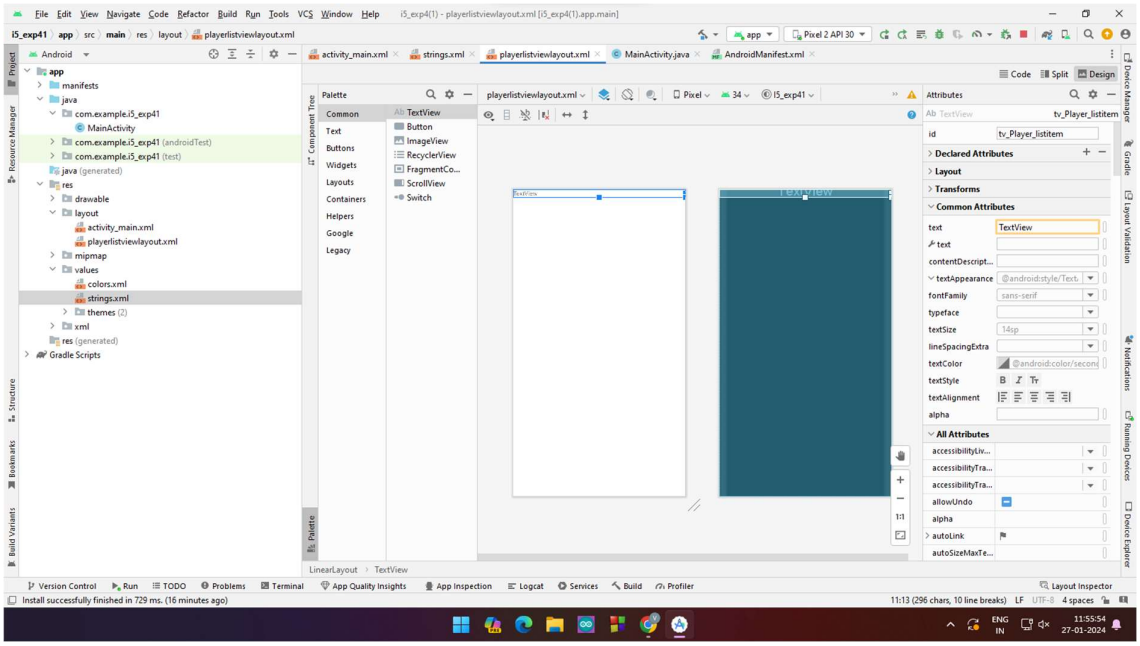
Create MainActivity in the activity we can drag and drop ListView



String.xml

```
<resources>
  <string name="app_name">i5_exp4(1)</string>
  <string-array name="Players">
     <item>Sachin</item>
     <item>Ganguly</item>
     <item>Dravid</item>
     <item>Kapil</item>
     <item>Srinath</item>
     <item>Kumbale</item>
  </string-array>
</resources>
```

Create a PlayerLayout in that we can drag and drop TextView



MainActivity.java:

```
package com.example.i5_exp41;
import  androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Adapter;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
     String[] players;
     players=getResources().getStringArray(R.array.Players);
```

```
    ArrayAdapter<String> aa=new
ArrayAdapter<String>(this,R.layout.playerlistviewlayout,R.id.tv_Player_listitem,players);
    ListView li=this.findViewById(R.id.lv_player);
    li.setAdapter(aa);
    li.setOnItemClickListener(new AdapterView.OnItemClickListener() {
      @Override
      public void onItemClick(AdapterView<?> adapterView, View view, int i,long l){
        String itemselected=players[i];
        Toast.makeText(getApplicationContext(),itemselected, Toast.LENGTH_SHORT).show();
      }
    });
  }
}
```

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">

  <ListView
    android:id="@+id/lv_player"
    android:layout_width="409dp"
    android:layout_height="729dp"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Playerlistview.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">

  <TextView
    android:id="@+id/tv_Player_listitem"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="TextView" />
</LinearLayout>
```

Manifest

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

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

  <application
    android:allowBackup="true"
    android:dataExtractionRules="@xml/data_extraction_rules"
    android:fullBackupContent="@xml/backup_rules"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.I5_exp41"
    tools:targetApi="31">
    <activity
      android:name=".MainActivity"
      android:exported="true">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Output:

EXPERIMENT-4

Aim: Build mobile application using Recycler View

Description:

Recycler View:

Recycler View makes it easy to efficiently display large sets of data. You supply the data and define how each item looks, and the Recycler View library dynamically creates the elements when they're needed.

Recycler View mainly uses two classes like View holder and Adapter class. We need to define classes for them. View folder extends Recycler view which is a main component.

In layout managers we have 3 types:

1. Linear Layout Manager

2. Grid Layout Manager

3. Staggered Grid Layout Manager

When we define adapter, we override 3 methods. They are:

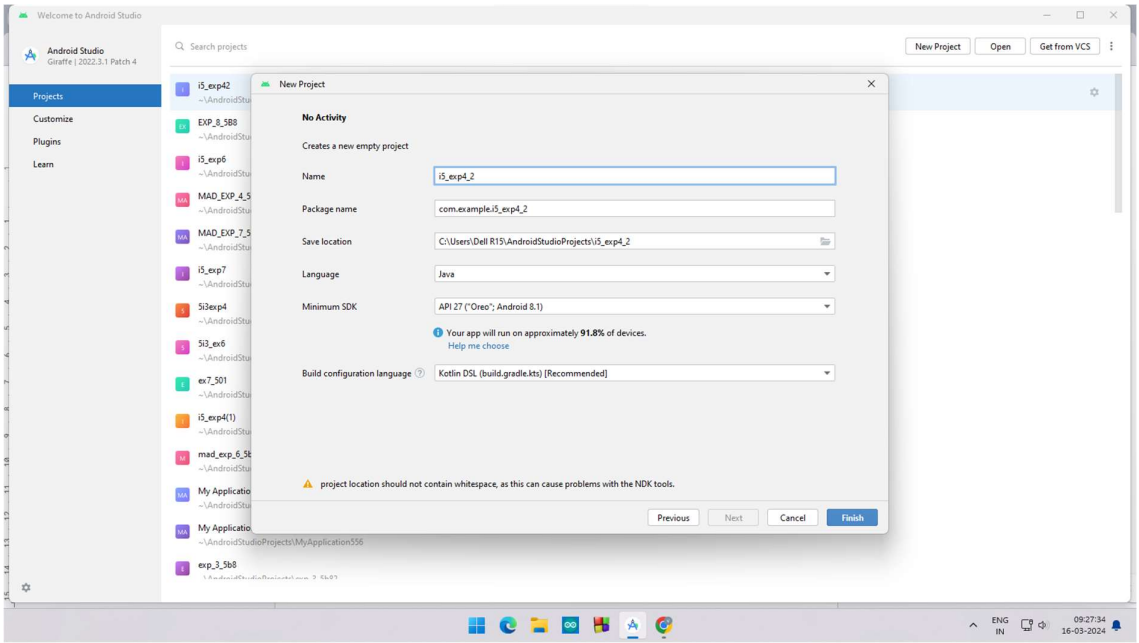
onCreateViewHolder()

onBindViewHolder()

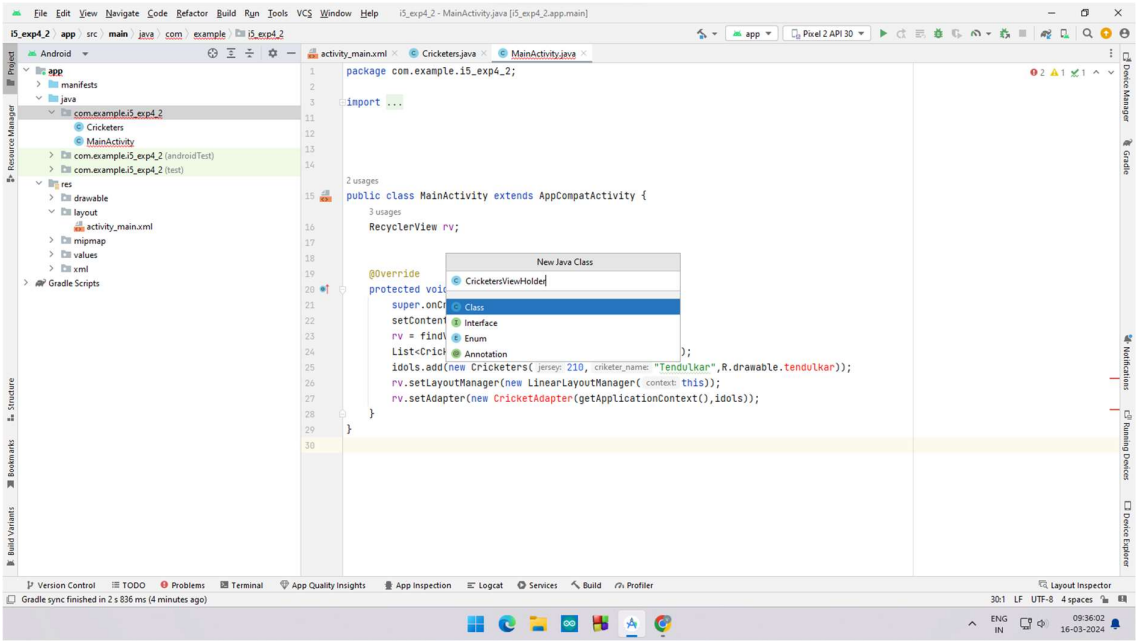
getItemCount()

Procedure:

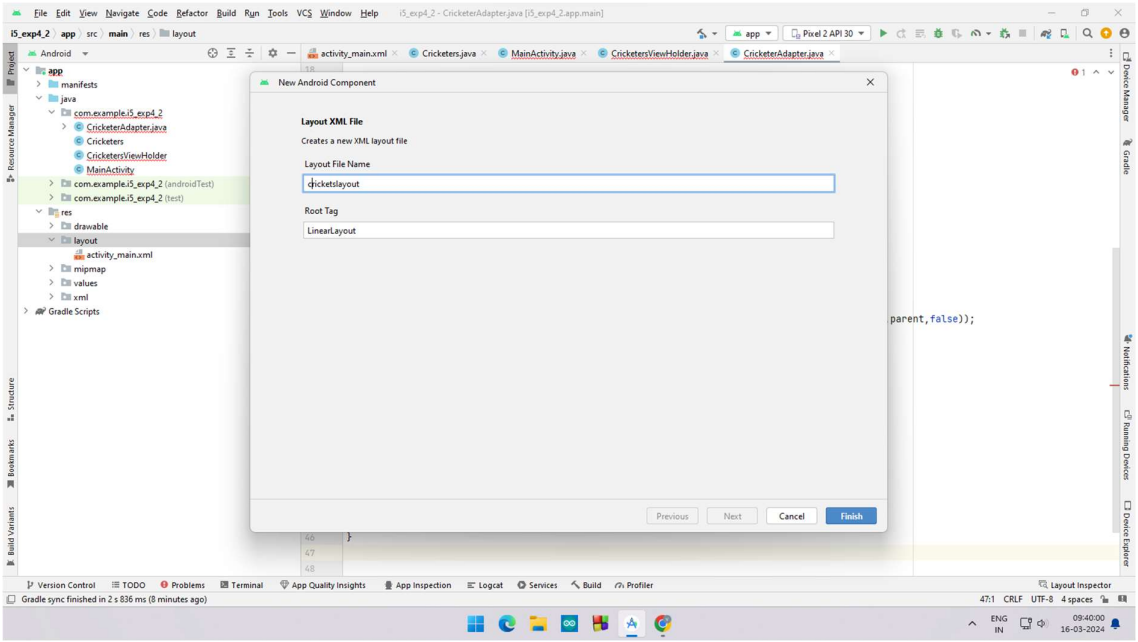
Create a new project is i5_exp4_2



Create one mainactivity and three java classes



Create a Cricketlayout.xml

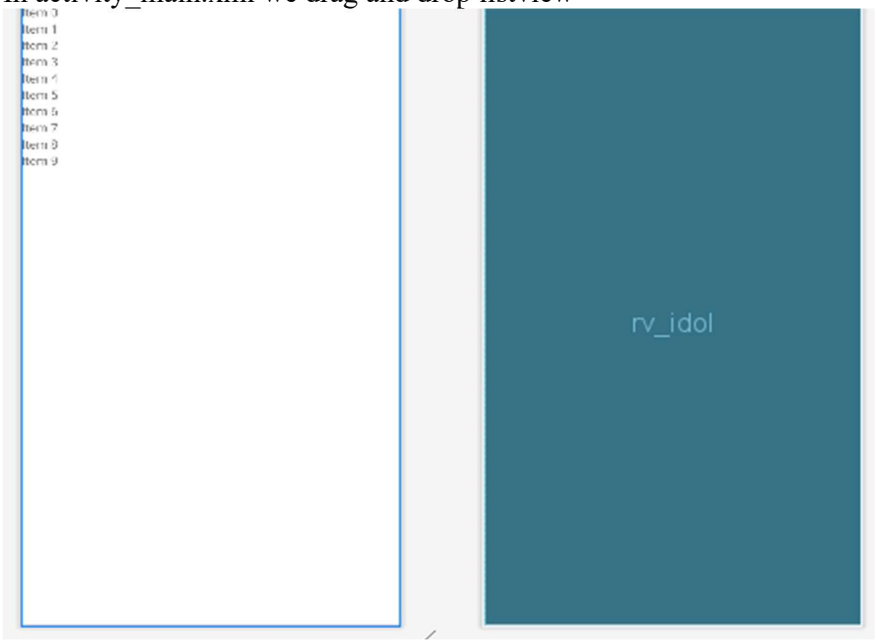


mainActivity.java

```
package com.example.i5_exp4_2;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import android.os.Bundle;
import java.util.ArrayList;
import java.util.List;
public class MainActivity extends AppCompatActivity {
  RecyclerView rv;
```

```
  @Override
  protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      rv = findViewById(R.id.rv_idol);
      List<Cricketers> idols = new ArrayList<Cricketers>();
      idols.add(new Cricketers(210,"Tendulkar",R.drawable.img));
      rv.setLayoutManager(new LinearLayoutManager(this));
      rv.setAdapter(new CricketerAdapter(getApplicationContext(),idols));
  }
}
```

In activity_main.xml we drag and drop listview



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">
  <androidx.recyclerview.widget.RecyclerView
      android:id="@+id/rv_idol"
      android:layout_width="409dp"
      android:layout_height="729dp"
      tools:layout_editor_absoluteX="1dp"
      tools:layout_editor_absoluteY="1dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Cricketers.java

```
package com.example.i5_exp4_2;
```

```
public class Cricketers {
  int jersey;
  String criketer_name;
  int image;
  public Cricketers(int jersey, String criketer_name, int image) {
     this.jersey = jersey;
     this.criketer_name = criketer_name;
     this.image = image;
  }
  public int getJersey() {
     return jersey;
  }
  public void setJersey(int jersey) {
     this.jersey = jersey;
  }
  public String getCriketer_name() {
     return criketer_name;
  }
  public void setCriketer_name(String criketer_name) {
     this.criketer_name = criketer_name;
  }
  public int getImage() {
     return image;
  }
  public void setImage(int image) {
     this.image = image;
  }
}
```

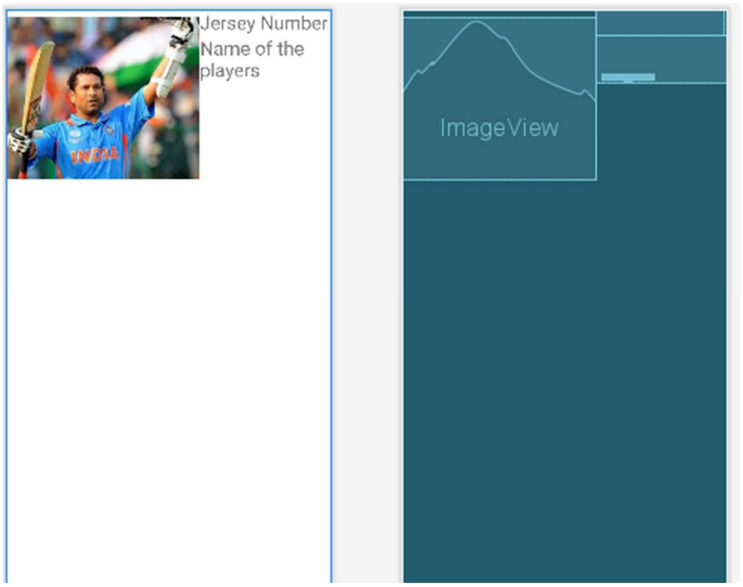
cricketAdapter.java

```
package com.example.i5_exp4_2;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;
public class CricketerAdapter extends RecyclerView.Adapter<CricketersViewHolder> {
  Context cv;
  public CricketerAdapter(@NonNull Context cv, List<Cricketers> c) {
     this.cv = cv;
     this.c = c;
  }
  List<Cricketers> c;
  public CricketersViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType)
{   return new
CricketersViewHolder(LayoutInflater.from(cv).inflate(R.layout.cricketslayout,parent,false));
  }
  public void onBindViewHolder(@NonNull CricketersViewHolder holder, int position) {
     holder._tv_cricketers_name.setText(String.valueOf(c.get(position).getCriketer_name()));
     holder._tv_cricketers_jersey.setText(String.valueOf(c.get(position).getJersey()));
```

```
        holder._iv_cricketer.setImageResource(c.get(position).getImage());
    }
    @Override
    public int getItemCount() {
        return c.size();
    }
}
```

CricketersViewHolder.java

```
package com.example.i5_exp4_2;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
public class CricketersViewHolder extends RecyclerView.ViewHolder {
    ImageView _iv_cricketer;
    TextView _tv_cricketers_jersey;
    TextView _tv_cricketers_name;
    public CricketersViewHolder(@NonNull View itemView) {
        super(itemView);
        _iv_cricketer=itemView.findViewById(R.id.imageView2);
        _tv_cricketers_jersey=itemView.findViewById(R.id.tv_player_jerssy);
        _tv_cricketers_name=itemView.findViewById(R.id.tv_player_name);
    }
}
```

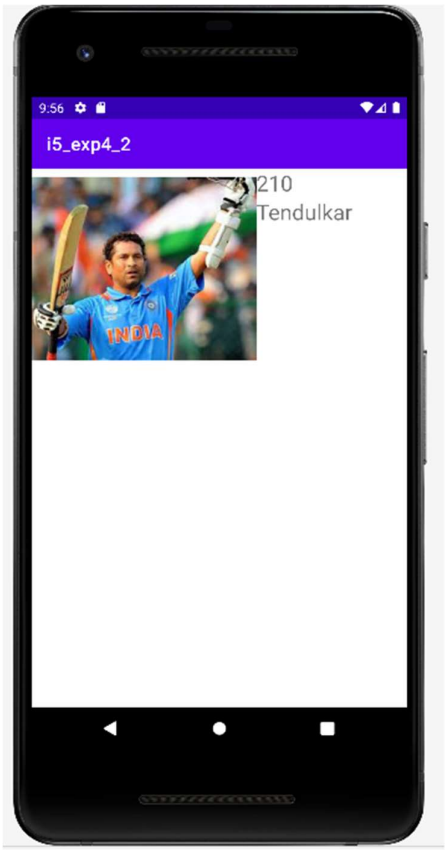


Cricketlayout.xml

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

```
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        app:srcCompat="@drawable/img" />
    <TextView
        android:id="@+id/tv_player_jerssy"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_toEndOf="@+id/imageView2"
        android:text="Jersey Number"
        android:textSize="24sp" />
    <TextView
        android:id="@+id/tv_player_name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/tv_player_jerssy"
        android:layout_toEndOf="@+id/imageView2"
        android:text="Name of the players"
        android:textSize="24sp" />
</RelativeLayout>
```

OUTPUT:



EXPERIMENT-5

Aim: Build mobile application to switch from one activity to another using Intent.

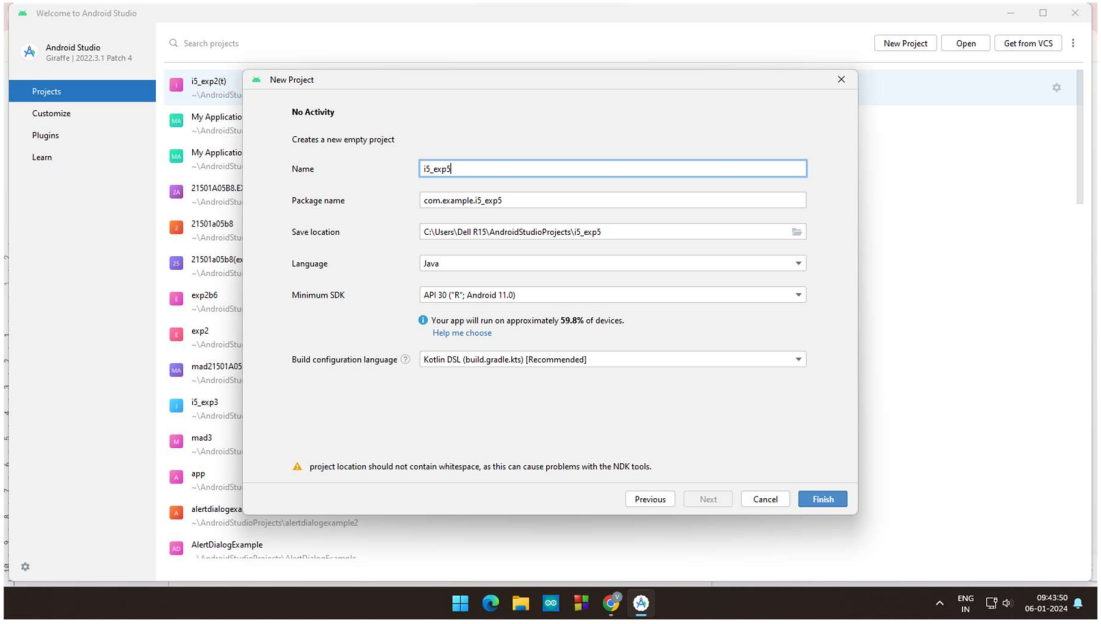
Description:

Intent:

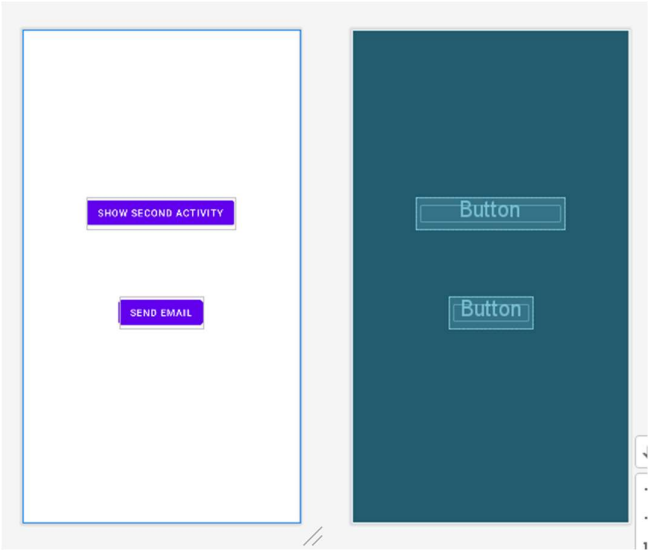
The process of taking users from one application to another is achieved by passing the Intent to the system. Intents, in general, are used for navigating among various activities within the same application, but note, is not limited to one single application, i.e., they can be utilized from moving from one application to another as well**.**

Procedure"

Create the project name is i5_exp5



Create a main activity in the activity we create two buttons



MainActivity.java

```
package com.example.i5_exp5;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
  }
  public void Show_second(View v){
     Intent i=new Intent(this,SecondActivity.class);
     startActivity(i);
  }
  public void send_email(View v){
     Intent emailIntent =new Intent(Intent.ACTION_SEND);
     emailIntent.setData(Uri.parse("mailto:"));
     emailIntent.setType("text/plain");
     emailIntent.putExtra(Intent.EXTRA_EMAIL,"");
     emailIntent.putExtra(Intent.EXTRA_CC,"");
     emailIntent.putExtra(Intent.EXTRA_SUBJECT,"Your subject");
     emailIntent.putExtra(Intent.EXTRA_TEXT,"Email message goes here");
     try{
        startActivity(Intent.createChooser(emailIntent,"Send mail..."));
        finish();
        Log.i("Finished sending email.","");
     }catch (android.content.ActivityNotFoundException ex){
        Toast.makeText(MainActivity.this,"There is no eamil client
installed",Toast.LENGTH_SHORT).show();
     }
  }
}
```

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">

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

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="Show_second"
    android:text="Show Second Activity"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.363" />

  <Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="send_email"
    android:text="send email"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.579" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

SecondActivity.java

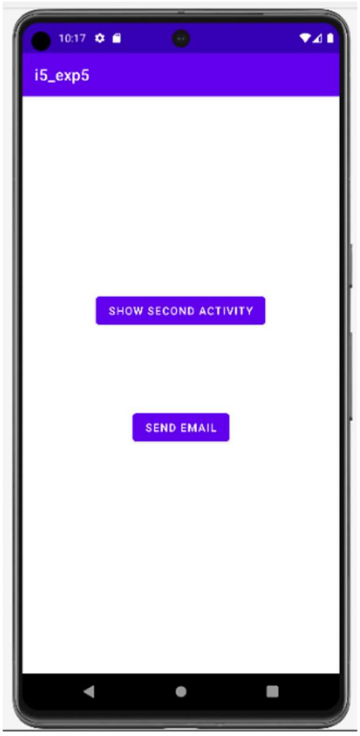
```
package com.example.i5_exp5;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
public class SecondActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_second);
  }
  public void show_main(View v){
    Intent i=new Intent(this,MainActivity.class);
    startActivity(i);
  }
}
```

Activity_second.xml

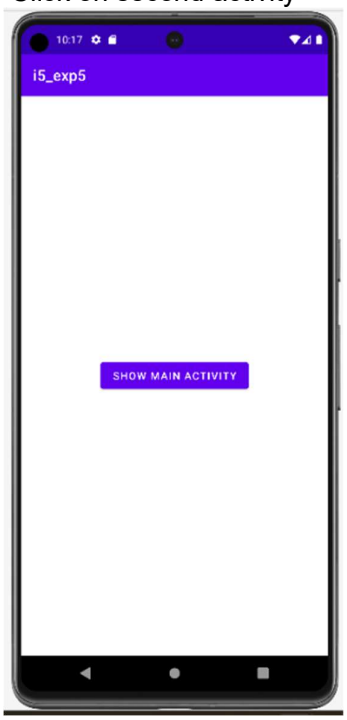
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"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

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

  <Button
     android:id="@+id/button3"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:onClick="show_main"
     android:text="Show Main Activity"
     app:layout_constraintBottom_toBottomOf="parent"
     app:layout_constraintEnd_toEndOf="parent"
     app:layout_constraintStart_toStartOf="parent"
     app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

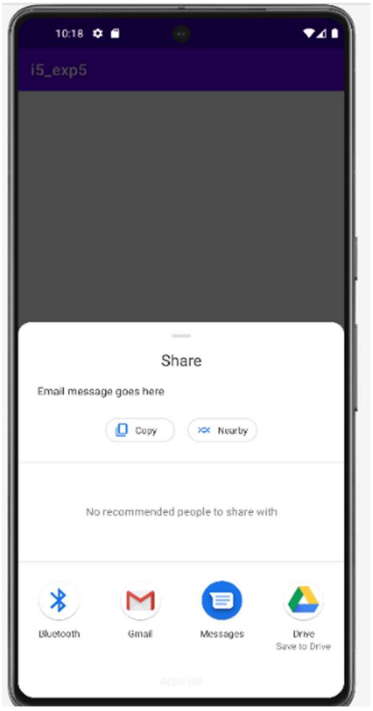
OUTPUT:



Click on second activity



Click on send email



EXPERIMENT-6

Aim: Build mobile application to demonstrate Dynamic Fragments

Description:

Fragments:

A Fragment represents a reusable portion of your app's UI. To create a Fragment, we extend the Fragment class.

Steps to use the Fragment are:

1. Create a subclass of fragment.

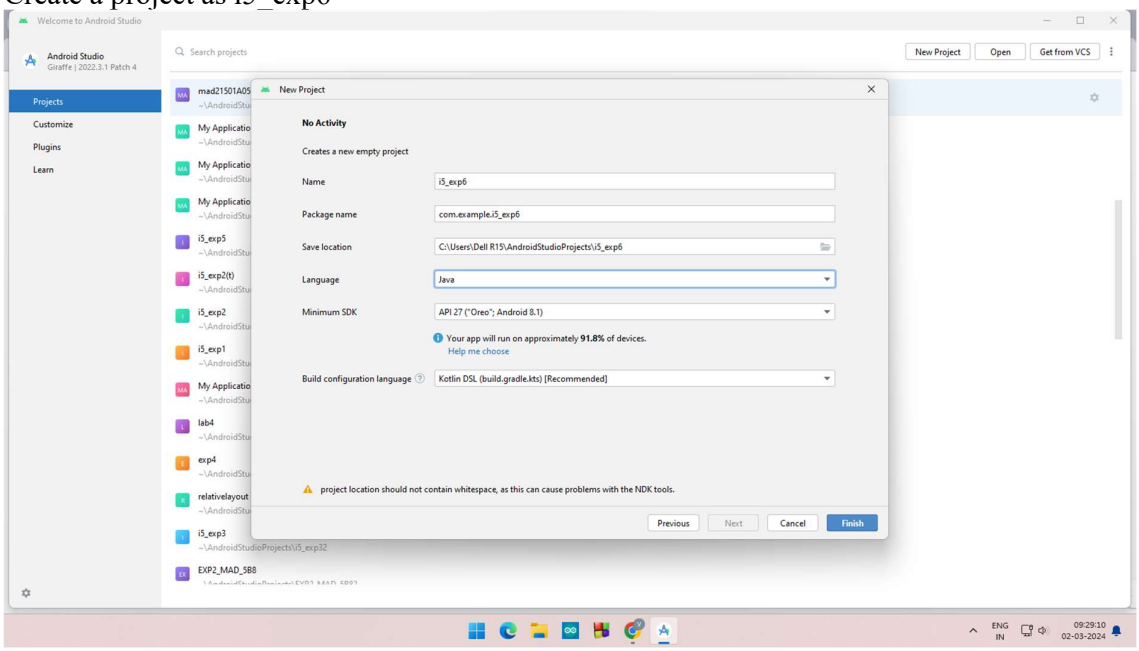
2. Create a layout for the fragment.

3. We can add the fragment to a host activity either statically or dynamically.

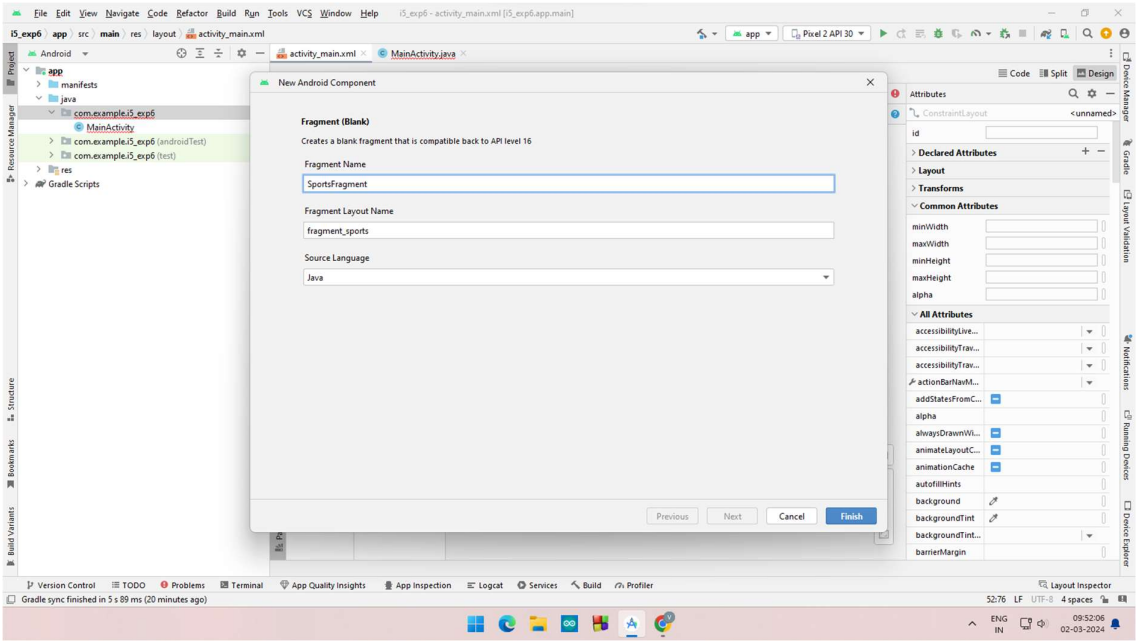
In Fragment Activity, get an instance of the Fragment Manager, which can be used to create a Fragment Transaction.

Procedure:

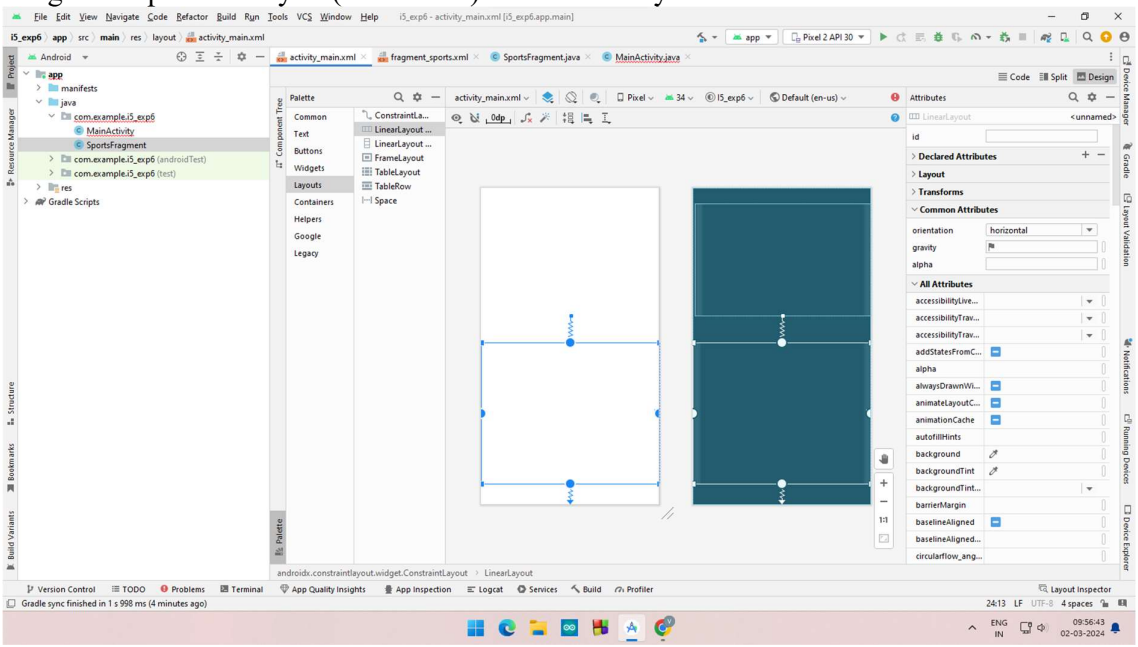
Create a project as i5_exp6



Create a main activity and sport fragment



Drag on drop Linear layout(Horizontal) in mainActivty.xml



MainActivity.java

```
package com.example.i5_exp6;
import android.os.Bundle;
import android.util.Log;
import android.widget.Toast;
import androidx.activity.EdgeToEdge;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
```

```
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentResultListener;
import androidx.fragment.app.FragmentTransaction;
public class MainActivity extends AppCompatActivity {
  SportsFragment sf;
  FragmentManager fmgr;
  FragmentTransaction ft;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
     try{
        sf=new SportsFragment();
        fmgr=getSupportFragmentManager();
        ft=fmgr.beginTransaction();
        ft.add(R.id.ll_top,sf);
        ft.commit();
        fmgr.setFragmentResultListener("rk", this, new FragmentResultListener() {
         @Override
          public void onFragmentResult(@NonNull String requestKey, @NonNull Bundle result) {
              int option=result.getInt("SelectedIndex");
              ft=fmgr.beginTransaction();
              switch (option){
                 case 0:ft.replace(R.id.ll_bottom,new CricketFragment());break;
                 case 1:ft.replace(R.id.ll_bottom,new TennisFragment());break;
                 case 2:ft.replace(R.id.ll_bottom,new BadmintonFragment());break;
                 case 3:ft.replace(R.id.ll_bottom,new HockeyFragment()); break;
              }
              ft.commit();
           }
        });
     }
     catch(Exception ex){
        Toast.makeText(this,ex.getMessage(),Toast.LENGTH_LONG).show();
        Log.d("Problem in sports Fragment",ex.getMessage());
     }
  }
}
```

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:id="@+id/main"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">
  <LinearLayout
     android:id="@+id/ll_top"
```

```
        android:layout_width="367dp"
        android:layout_height="333dp"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.04"
        tools:layout_editor_absoluteY="2dp"></LinearLayout>
    <LinearLayout
        android:id="@+id/ll_bottom"
        android:layout_width="380dp"
        android:layout_height="361dp"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.483"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/ll_top"
        app:layout_constraintVertical_bias="1.0"></LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

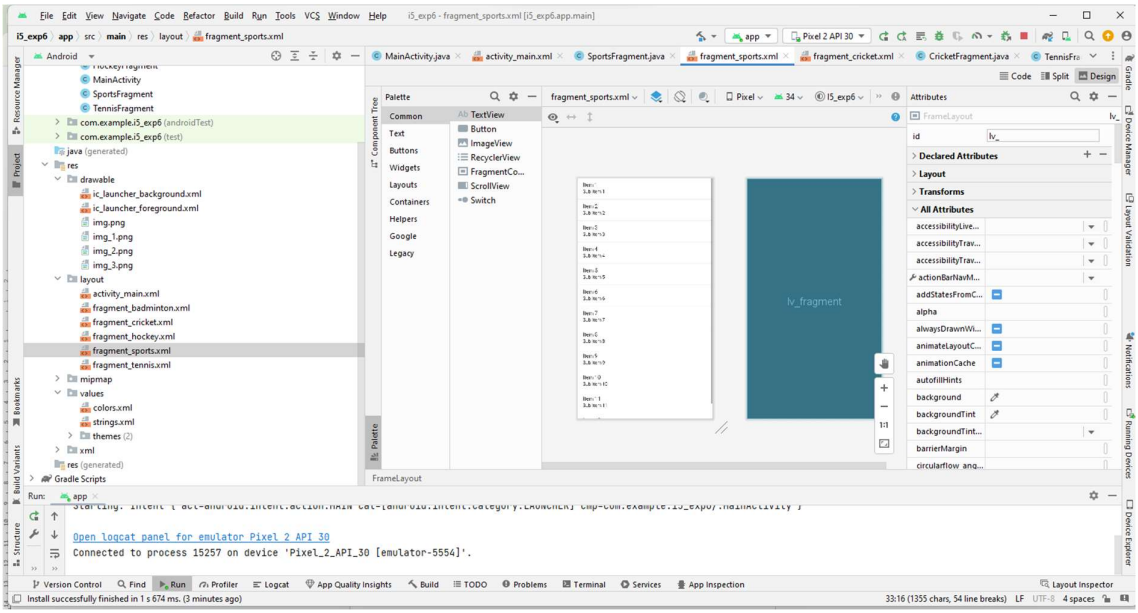
Sport.java

```
package com.example.i5_exp6;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.ListView;
import android.widget.Toast;
public class SportsFragment extends Fragment implements AdapterView.OnItemClickListener{
    public SportsFragment() {
        // Required empty public constructor
    }
    ListView lv;
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_sports, container, false);
    }
    public void onViewCreated(View view,Bundle savedInstanceState){
        lv=(ListView)view.findViewById(R.id.lv_fragment);
        lv.setOnItemClickListener(this);
        super.onViewCreated(view,savedInstanceState);
    }
    public void onItemClick(AdapterView<?> parent, View view, int i, long l) {
        try{Bundle b=new Bundle();
            b.putInt("SelectedIndex",i);
```

```
            getParentFragmentManager().setFragmentResult("rk",b);}
        catch(Exception e){
            Log.d("Error in settings",e.getMessage());
        }
    }
}
```

Activity_sport.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/lv_"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".SportsFragment">
    <ListView
        android:id="@+id/lv_fragment"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:entries="@array/Sports_List" />
</FrameLayout>
```



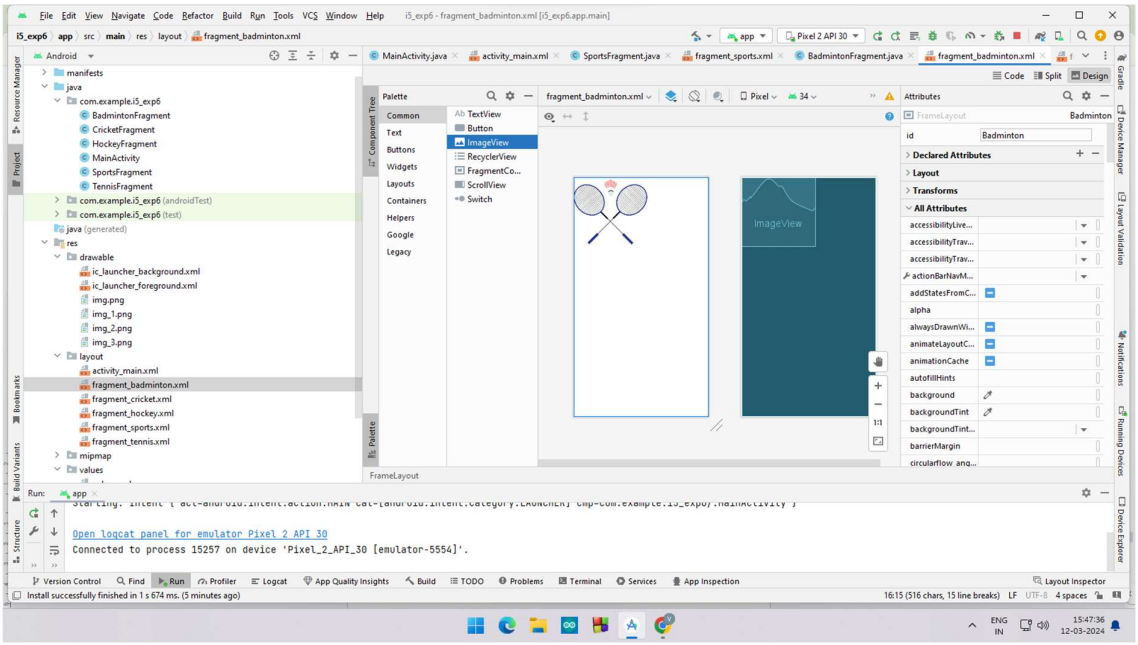
BadmintonFragment.java

```
package com.example.i5_exp6;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class BadmintonFragment extends Fragment {
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
```

```
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_badminton, container, false);
    }
}
```

Fragment_badminton.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:id="@+id/Badminton"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".BadmintonFragment" >

<ImageView
  android:id="@+id/imageView"
  android:layout_width="226dp"
  android:layout_height="wrap_content"
  android:src="@drawable/img" />
</FrameLayout>
```



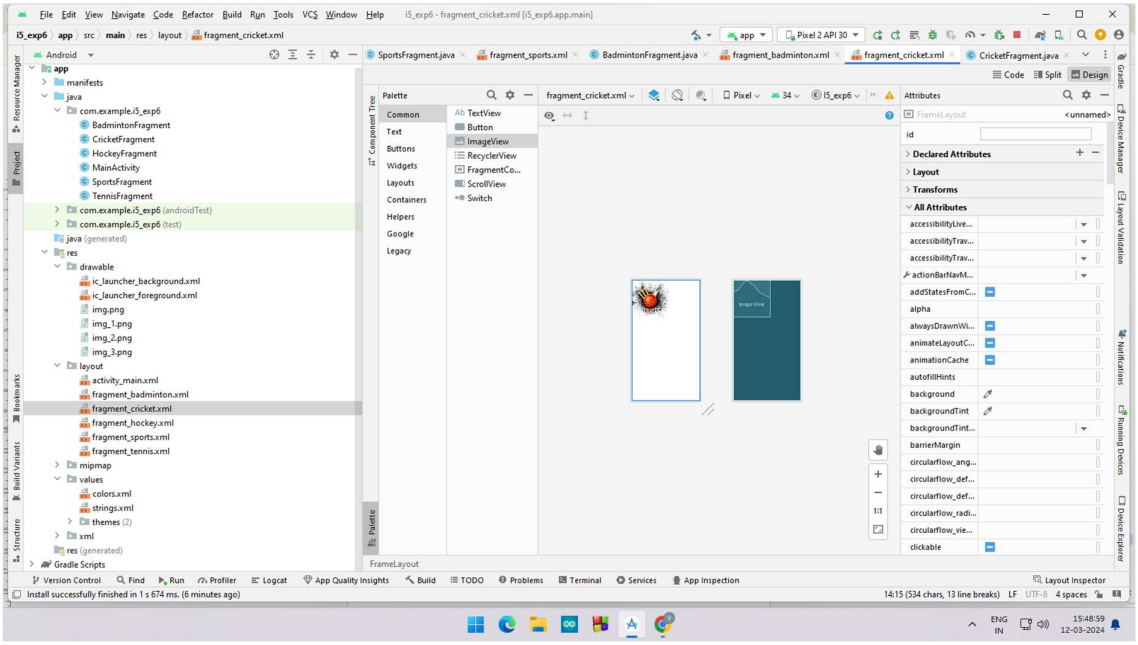
CricketFragment.java

```
package com.example.i5_exp6;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class CricketFragment extends Fragment {
  public View onCreateView(LayoutInflater inflater, ViewGroup container,
                    Bundle savedInstanceState) {
```

```
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_cricket, container, false);
    }
}
```

Fragment_cricket.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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=".CricketFragment">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/img_1" />
</FrameLayout>
```



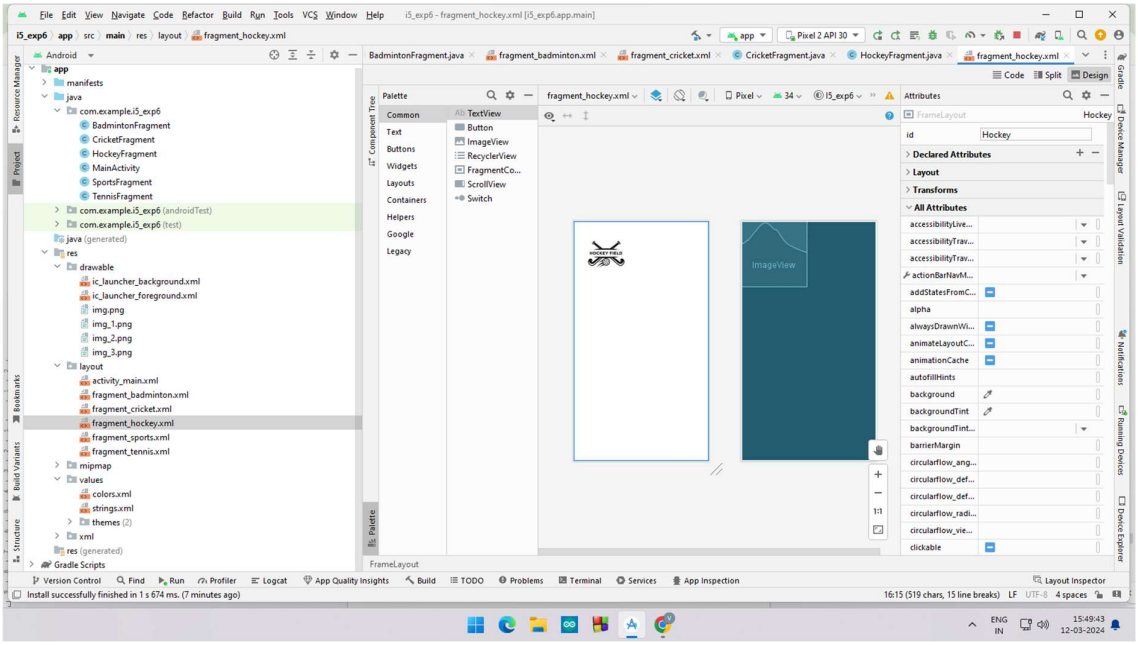
HockeyFragment.java

```
package com.example.i5_exp6;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class HockeyFragment extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
```

```
        return inflater.inflate(R.layout.fragment_hockey, container, false);
    }
}
```

Fragment_hockey.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:id="@+id/Hockey"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".HockeyFragment">

<ImageView
  android:id="@+id/imageView3"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:src="@drawable/img_2" />
</FrameLayout>
```



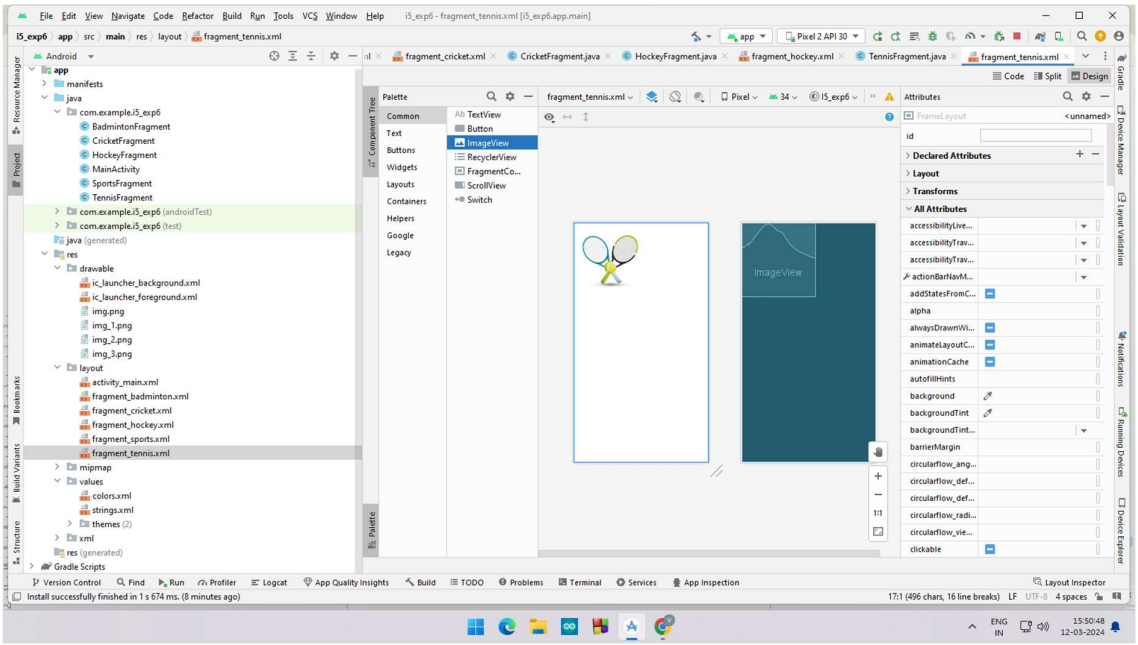
TennisFragment.java

```
package com.example.i5_exp6;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class TennisFragment extends Fragment {
  @Override
  public View onCreateView(LayoutInflater inflater, ViewGroup container,
```

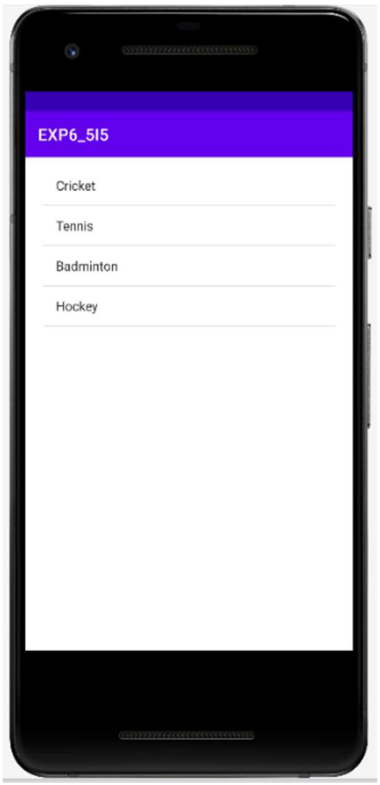
```
                    Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_tennis, container, false);
    }
}
```

Fragment_tennis.xml

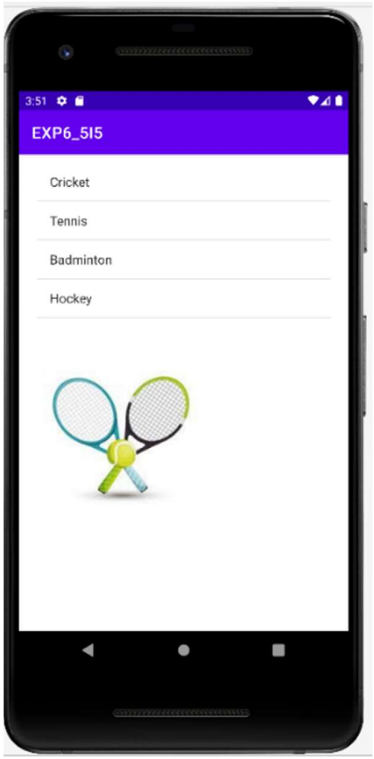
```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".TennisFragment">

<ImageView
  android:id="@+id/imageView5"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:src="@drawable/img_3" />
</FrameLayout>
```



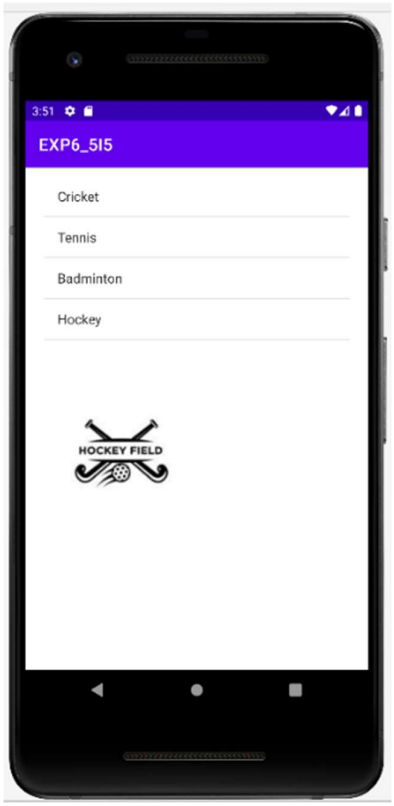
OUTPUT:


EXP6_5I5
Cricket
Tennis
Badminton
Hockey


EXP6_5I5
Cricket
Tennis
Badminton
Hockey
CRICKET
fever


3:51
EXP6_5I5
Cricket
Tennis
Badminton
Hockey


3:51
EXP6_5I5
Cricket
Tennis
Badminton
Hockey

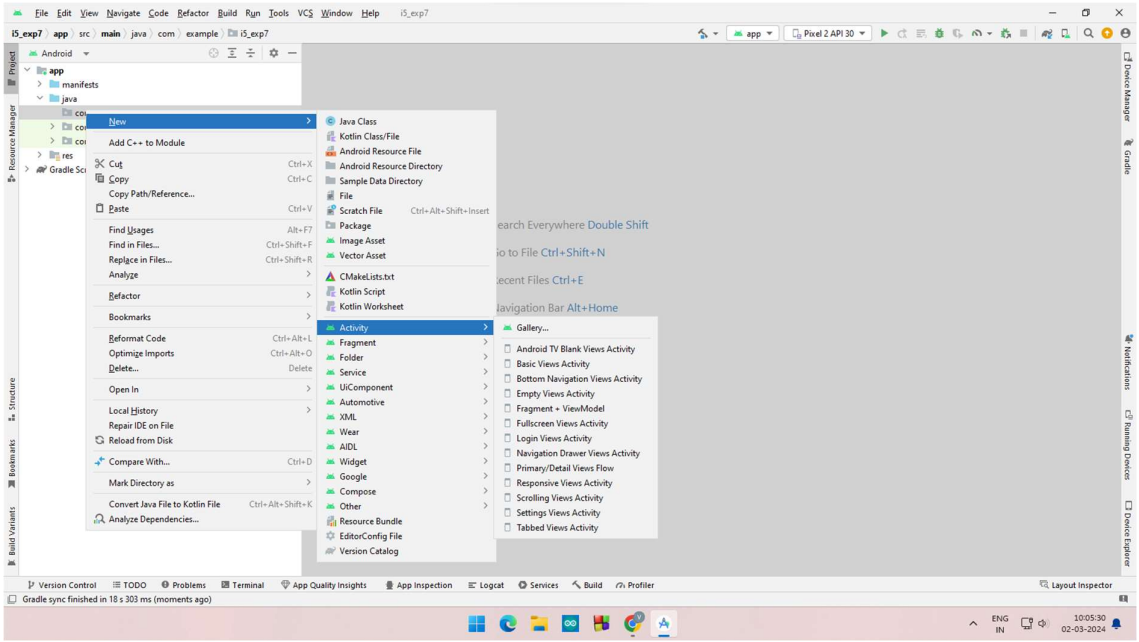

3:51
EXP6_5I5
Cricket
Tennis
Badminton
Hockey
HOCKEY FIELD

EXPERIMENT-7

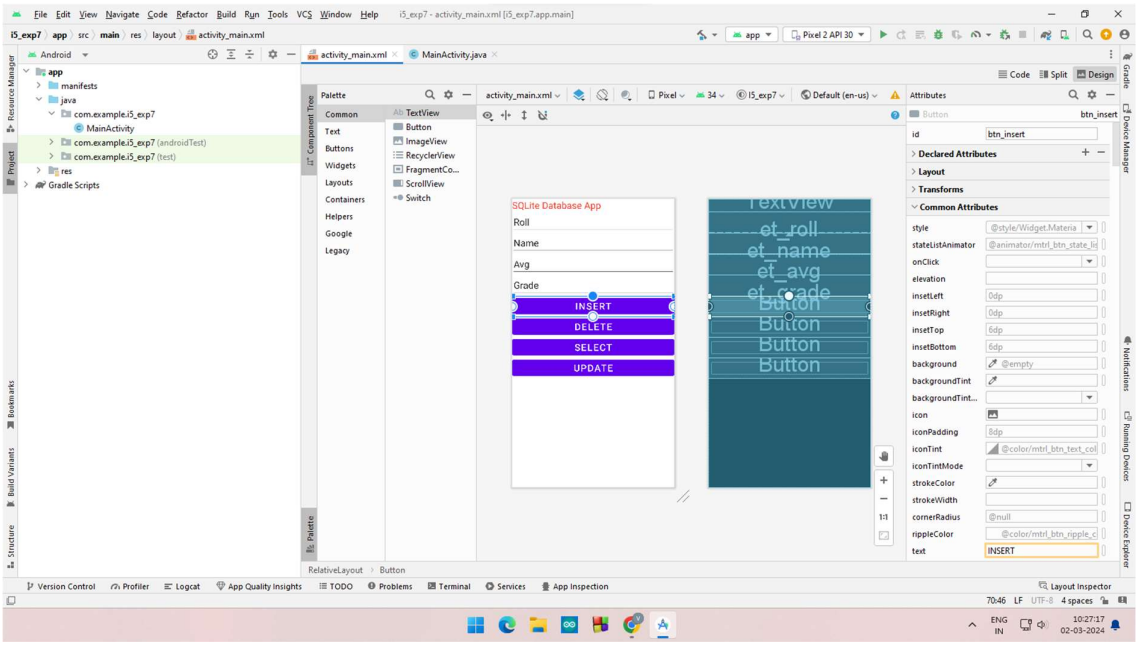
Aim: Build mobile application serverless database SQLite Database

Description:
SQLite:
It is a database engine written in the C programming language. Its not a standalone app, rather its a library that software developer embed in their apps.
Local database : SQLite
Cloud database: Firebase
'.db' extension is used while saving the file.
SQLite contains the following classes:
1. SQLiteCursor
2. SQLiteOpenHelper
3. SQLiteDatabase
4. SQLiteQuery
5. SQLiteQueryBuilder
6. SQLiteException
SQLite contains the following methods:
long insert(String table,string nullColumnBack,Count Value);
int update(String table,countervalue value);
int delete(String table, String whereClass, String[]);

Procedure:
Create new project is i5_exp7 in that project create main activity



Design of main Activity



Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/tv_title"
    android:text="SQLite Database App"
    android:textSize="24sp"
    android:textColor="#F44336"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
  </TextView>
  <EditText
    android:id="@+id/et_roll"
    android:text="Roll"
    android:textSize="24sp"
    android:layout_below="@+id/tv_title"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"></EditText>
  <EditText
    android:id="@+id/et_name"
    android:text="Name"
    android:textSize="24sp"
    android:layout_below="@+id/et_roll"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"></EditText>
  <EditText
    android:id="@+id/et_avg"
```

```
    android:text="Avg"
    android:textSize="24sp"
    android:layout_below="@+id/et_name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"></EditText>
  <EditText
    android:id="@+id/et_grade"
    android:text="Grade"
    android:textSize="24sp"
    android:layout_below="@+id/et_avg"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"></EditText>
  <Button
    android:id="@+id/btn_insert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/et_grade"
    android:onClick="insertStudent"
    android:text="INSERT"
    android:textSize="24sp"></Button>
  <Button
    android:id="@+id/btn_delete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/btn_insert"
    android:onClick="deleteStudent"
    android:text="DELETE"
    android:textSize="24sp"></Button>
  <Button
    android:id="@+id/btn_select"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/btn_delete"
    android:onClick="viewStudent"
    android:text="SELECT"
    android:textSize="24sp"></Button>
  <Button
    android:id="@+id/btn_update"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/btn_select"
    android:onClick="updateStudent"
    android:text="UPDATE"
    android:textSize="24sp"></Button>
</RelativeLayout>
```

StudentdbHelper.java

```
package com.example.i5_exp7;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
```

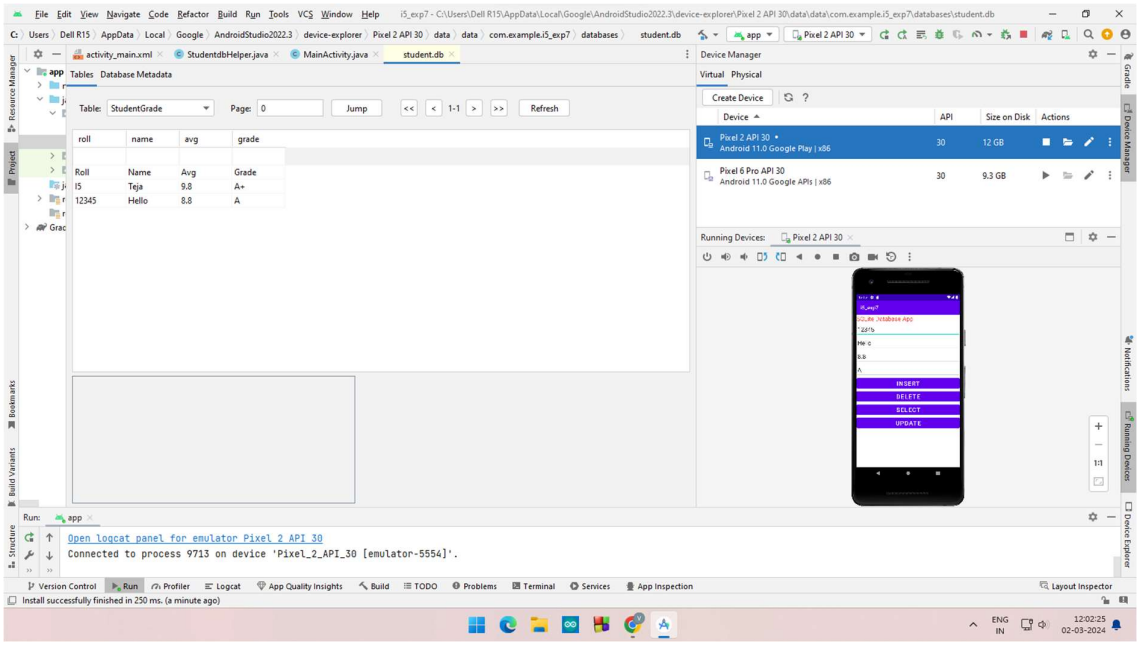
```
import android.database.sqlite.SQLiteCursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class StudentdbHelper extends SQLiteOpenHelper {
  public StudentdbHelper(Context context){
     super(context,"student.db",null,1);
  }
  public void onCreate(SQLiteDatabase sqLiteDatabase) {
     String q="Create table StudentGrade(roll TEXT primary key,name TEXT,avg TEXT,grade
TEXT)";
     sqLiteDatabase.execSQL(q);

  }
  public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {
     String q="drop table if exists StudentGrade";
     sqLiteDatabase.execSQL(q);
  }
  public boolean insertStudent(String roll,String name,String avg,String grade){
     SQLiteDatabase sqLiteDatabase=this.getWritableDatabase();
     ContentValues student=new ContentValues();
     student.put("roll",roll);
     student.put("name",name);
     student.put("avg",avg);
     student.put("grade",grade);
     long res;
     res=sqLiteDatabase.insert("StudentGrade",null,student);
     if(res==-1)return (false);
     else return (true);
  }
  public int updateStudent(String roll,String name,String avg,String grade){
     SQLiteDatabase sqLiteDatabase=this.getWritableDatabase();
     ContentValues student=new ContentValues();
     student.put("roll",roll);
     student.put("name",name);
     student.put("avg",avg);
     student.put("grade",grade);
     String[] params=new String[]{roll};
     return sqLiteDatabase.update("StudentGrade",student,"roll=?",params);
  }
  public int deleteStudent(String roll){
     SQLiteDatabase sqLiteDatabase=this.getWritableDatabase();
     String[] params=new String[]{roll};
     return sqLiteDatabase.delete("StudentGrade","roll=?",params);
  }
  public Cursor viewStudent(String roll){
     SQLiteDatabase sqLiteDatabase=this.getWritableDatabase();
     String[] params=new String[]{roll};
     return sqLiteDatabase.rawQuery("select * from StudentGrade where roll=?",params);
  }
}
```

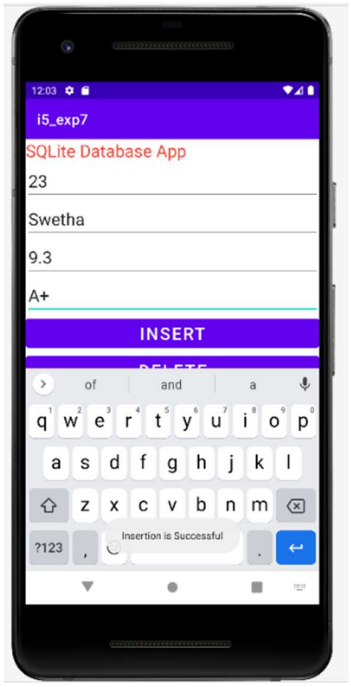
MainActivity.java

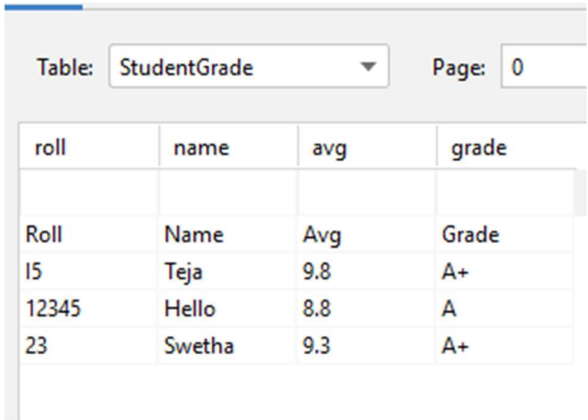
```
package com.example.i5_exp7;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  StudentdbHelper dbHelper;
  EditText et_roll,et_name,et_avg,et_grade;
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    dbHelper=new StudentdbHelper(this);
    et_roll=this.findViewById(R.id.et_roll);
    et_name=this.findViewById(R.id.et_name);
    et_avg=this.findViewById(R.id.et_avg);
    et_grade=this.findViewById(R.id.et_grade);
  }
  public void insertStudent(View v){
    String r=et_roll.getText().toString();
    String n=et_name.getText().toString();
    String a=et_avg.getText().toString();
    String g=et_grade.getText().toString();
    if(dbHelper.insertStudent(r,n,a,g)){
      Toast.makeText(this, "Insertion is Successful", Toast.LENGTH_LONG).show();
    }else{
      Toast.makeText(this, "Insertion is Failed", Toast.LENGTH_LONG).show();
    }
  }
  public void updateStudent(View v){
    String r=et_roll.getText().toString();
    String n=et_name.getText().toString();
    String a=et_avg.getText().toString();
    String g=et_grade.getText().toString();
    if(dbHelper.updateStudent(r,n,a,g)>0){
      Toast.makeText(this, "Update is Successful", Toast.LENGTH_LONG).show();
    }else{
      Toast.makeText(this, "Update is Failed", Toast.LENGTH_LONG).show();
    }
  }
  public void deleteStudent(View v){
    String r=et_roll.getText().toString();
    if(dbHelper.deleteStudent(r)>0){
      Toast.makeText(this, "delete is Successful", Toast.LENGTH_LONG).show();
    }else{
      Toast.makeText(this, "delete is Failed", Toast.LENGTH_LONG).show();
    }
  }
  public void viewStudent(View v){
 Cursor student=dbHelper.viewStudent(et_roll.getText().toString());
    if(student.moveToFirst()){
```

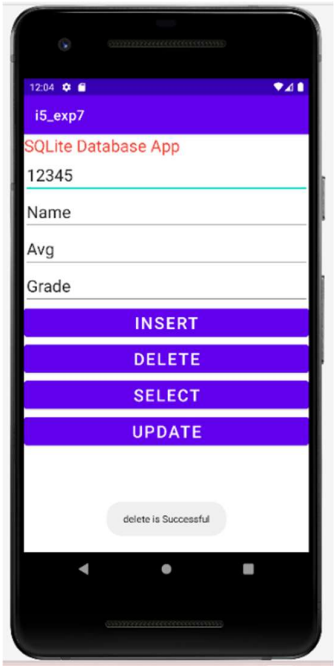
```
            et_name.setText(student.getString(1));
            et_avg.setText(student.getString(2));
            et_grade.setText(student.getString(3));
        }else{
            Toast.makeText(this, "No such student", Toast.LENGTH_LONG).show();
        }
    }
}
```

OUTPUT:









Tables Database Metadata

Table: StudentGrade Page: 0

roll	name	avg	grade
Roll	Name	Avg	Grade
I5	Teja	9.8	A+
23	Swetha	9.3	A+

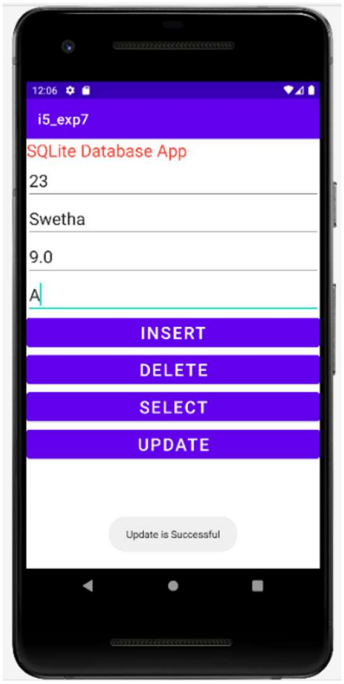


Table: StudentGrade Page: 0

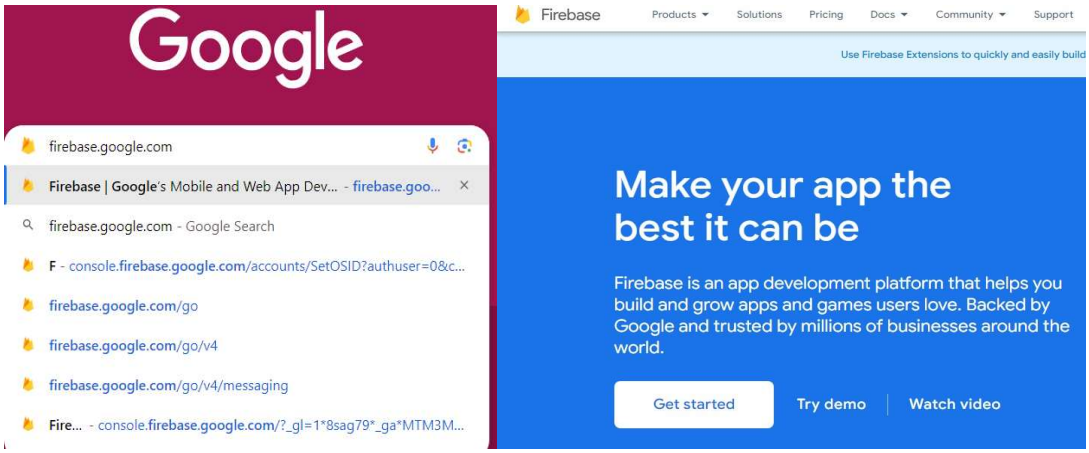
roll	name	avg	grade
Roll	Name	Avg	Grade
I5	Teja	9.8	A+
23	Swetha	9.0	A

Experiment-7.2

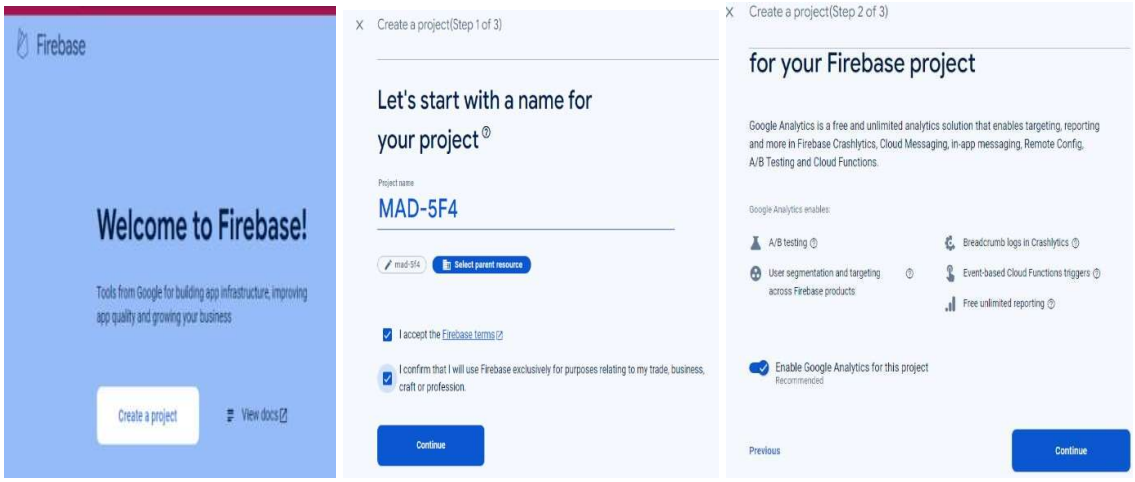
Aim: To build a mobile application with Firebase database.

Description:
Firebase:
The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronised in real-time to every connected client.
The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client. When you build cross-platform apps with our Apple platforms, Android, and JavaScript SDKs, all of your clients share one Realtime Database instance and automatically receive updates with the newest data.

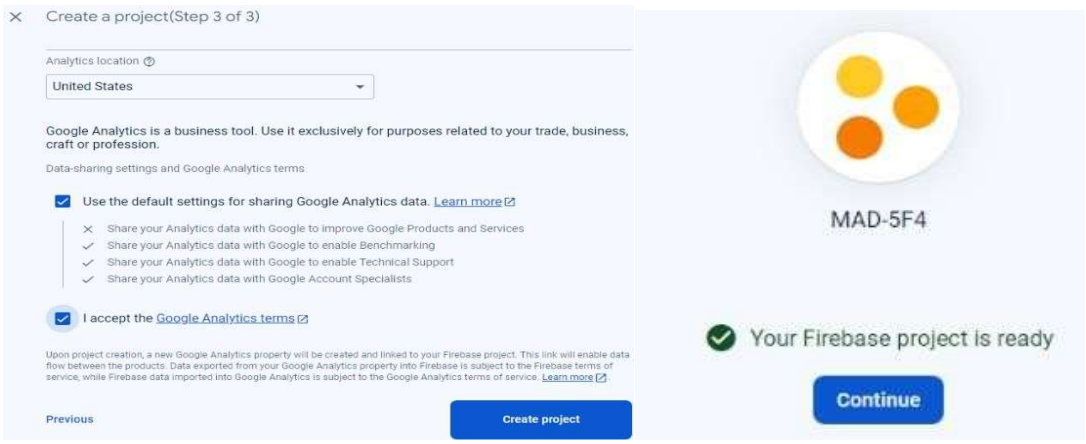
Procedure:
1.Open browser and go to firebase.google.com. 2.Login to the firebase and click on goto console. 3.Create a new project in android studio.



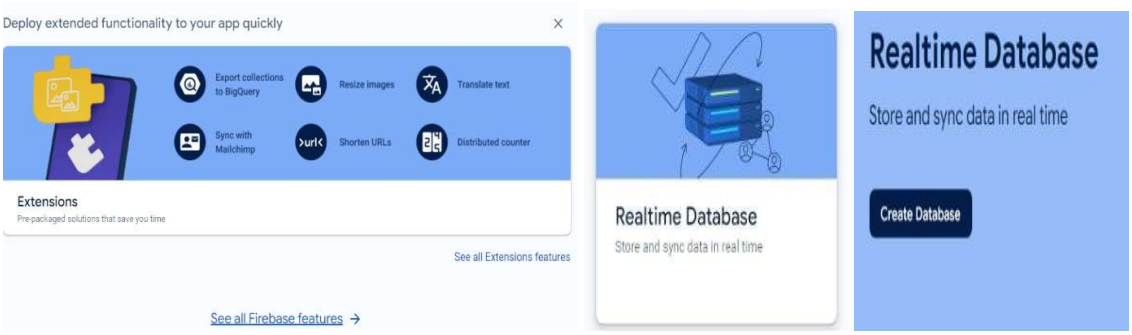
CLICK ON "Go to Console" on right top corner. Click on "Create Project"& give a Project name and click on Continue. Click on "Continue"



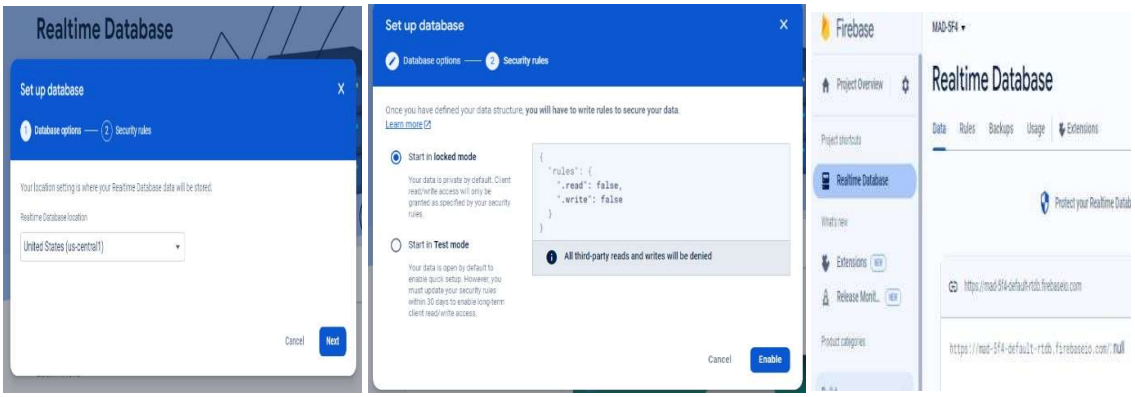
Click on “Create Project”. After Project is Created…Click on “Continue”



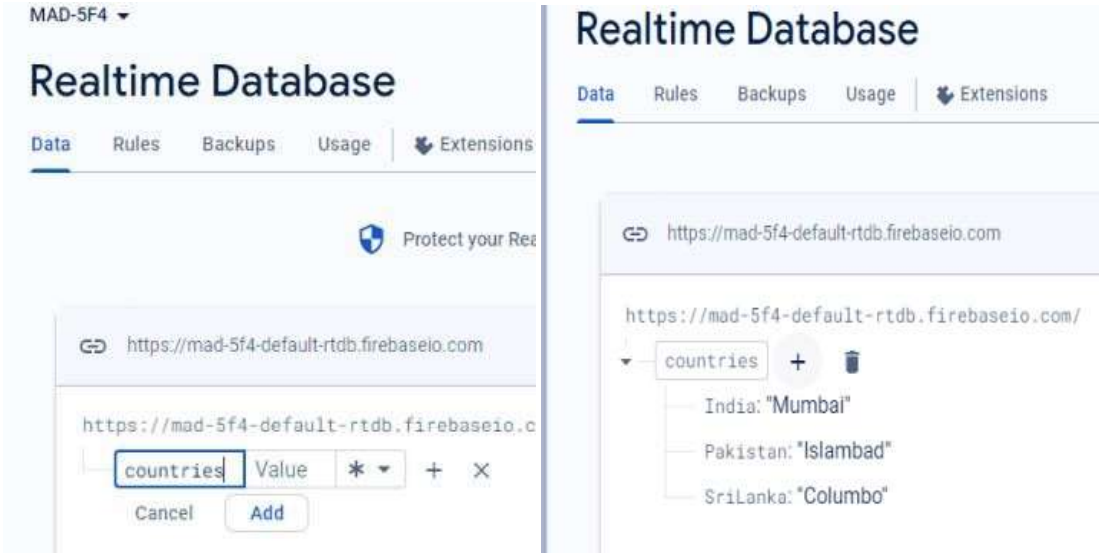
Scroll down and select ”See all Firebase Features” and Click on” Real time Database”. Click on “Create Database”



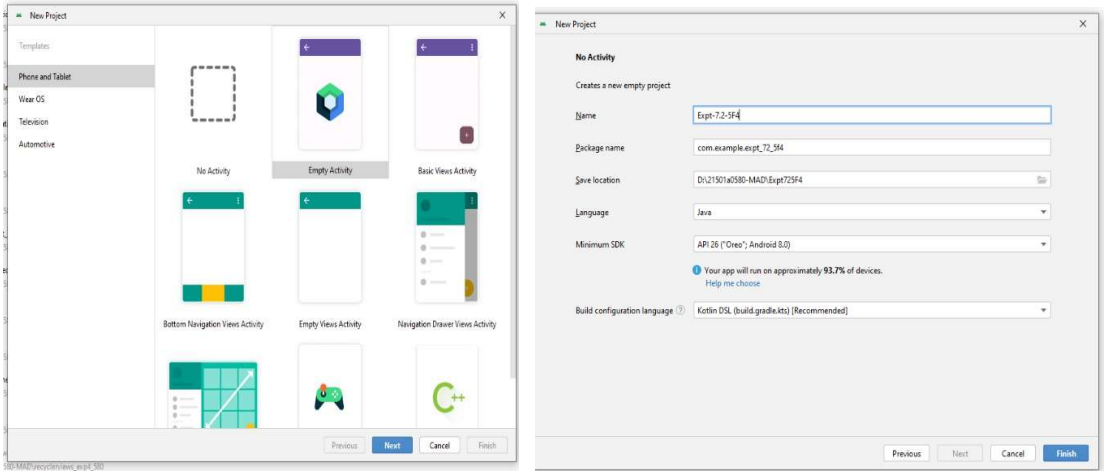
Click on “Next”. Click on Enable



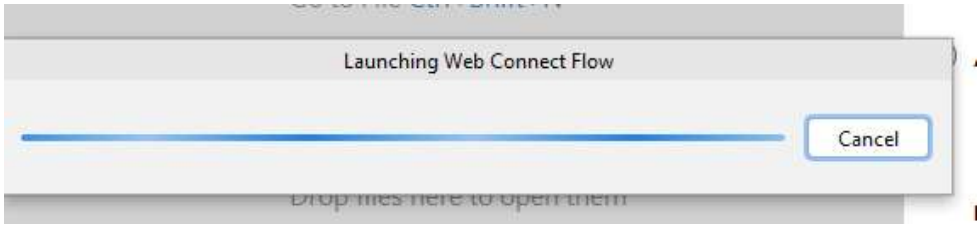
Click on “+” after “https://mad-5f4-default-rtdb.firebaseio.com/countries url and click “countries” in Key and select “Auto” and click on enter. Click on “+” and give key as’ India’ and Value as ‘Mumbai’ click on enter andsimilarly add other 2 countries

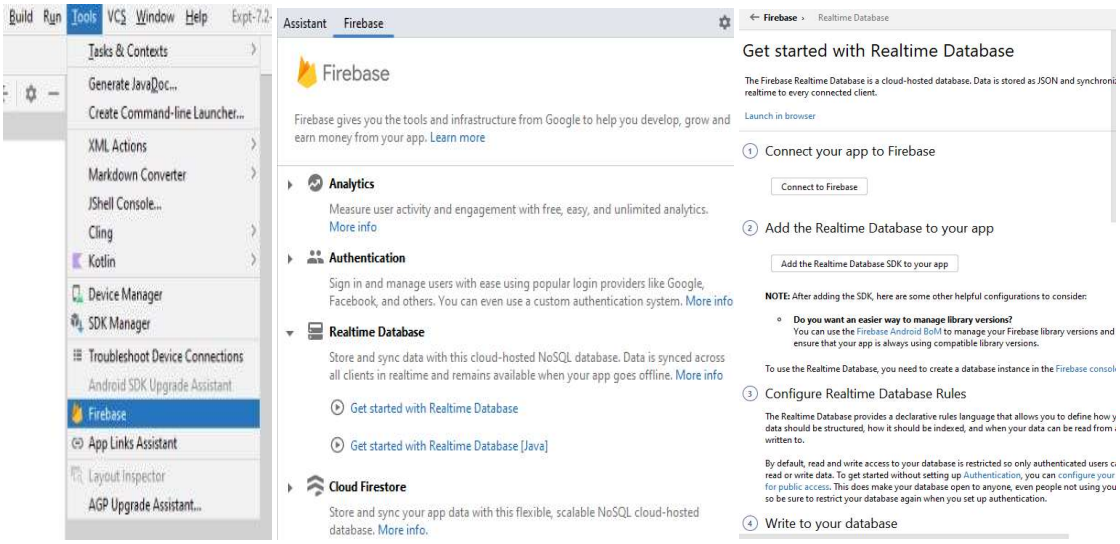


Now Goto Android-Studio and open a New Project. Select Empty Activity and click on next and give a name tothe project. Click on finish.

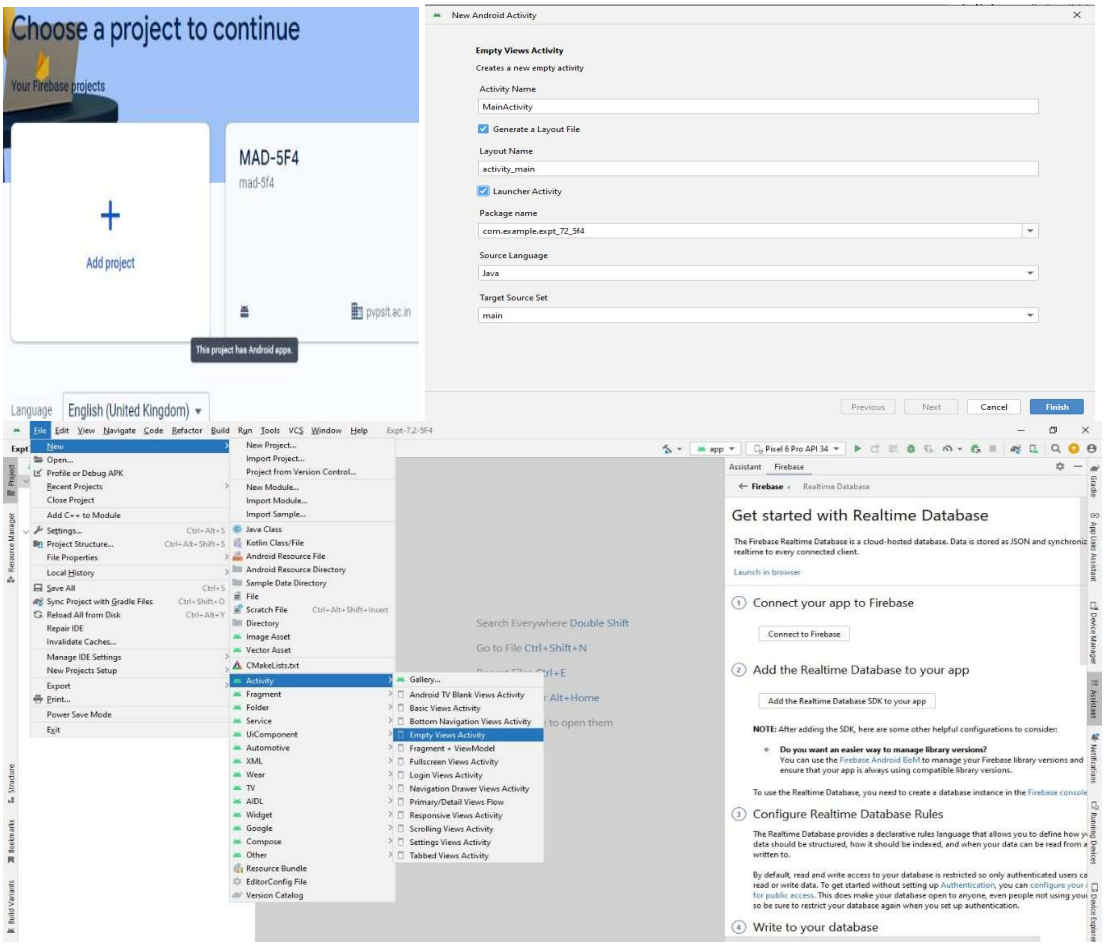


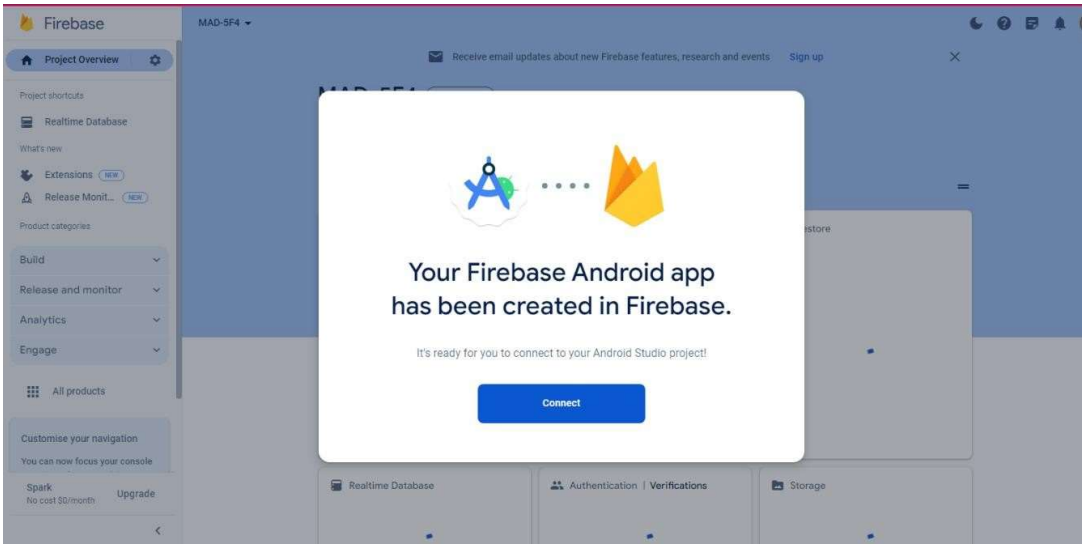
Goto ‘Tools” and click on “Fire Base”. In “Firebase” click on “Real time database. Click on “connect your appto firebase”





An android symbol displays at bottom left corner of “MSD-5F4”





MainActivity.java

```
package com.pvpsit.a5i5_exp7_firebase;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
import com.google.firebase.database.DataSnapshot;
import com.google.firebase.database.DatabaseError;
import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.FirebaseDatabase;
import com.google.firebase.database.GenericTypeIndicator;
import com.google.firebase.database.ValueEventListener;
import java.util.ArrayList;
import java.util.Map;

public class MainActivity extends
AppCompatActivity { ListView lv_cities;
ArrayAdapter<String> aadap;
ArrayList<String> arr_list;
protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        lv_cities = findViewById(R.id.lv_cities);
        arr_list = new ArrayList<String>(); // Initialize ArrayList before creating
        ArrayAdapter aadap = new ArrayAdapter<String>(this,android.R.layout.simple_list_item_1,
        arr_list);
        DatabaseReference databaseReference =
        FirebaseDatabase.getInstance().getReference("cities");
        databaseReference.addValueEventListener(new ValueEventListener() {
        public void onDataChange(@NonNull DataSnapshot snapshot) { if (snapshot.exists()) {
```

```
Toast.makeText(getApplicationContext(), "hi",
Toast.LENGTH_LONG).show(); GenericTypeIndicator<Map<String, String>>
genericTypeIndicator = new GenericTypeIndicator<Map<String, String>>() {};
Map<String, String> map =  snapshot.getValue(genericTypeIndicator); if (map != null) {
for (Map.Entry<String, String> map1 : map.entrySet()) {
arr_list.add(map1.getValue());
}
aadap.notifyDataSetChanged(); // Move notifyDataSetChanged() here
} } }
@Override
public void onCancelled(@NonNull DatabaseError error) {
// Handle onCancelled
}
});
lv_cities.setAdapter(aadap); // Set adapter after adding data to the ArrayList
}
}
```

AndroidManifest.xml:

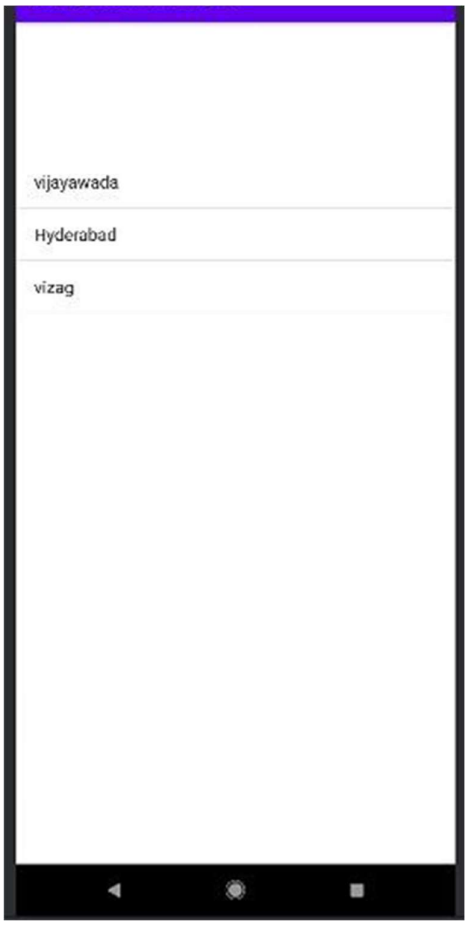
```
<?xml version="1.0" encoding="utf-8"?>
<manifest
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools">
<uses-permission android:name="android.permission.INTERNET"></uses-permission><uses-
permission android:name="android.permission.ACCESS_NETWORK_STATE"></uses
permission>
<application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme._5c3_exp7_firebase"
        tools:targetApi="31">
<activity
android:name=".MainActivity"
android:exported="true">
<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"?>
<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">
<ListView
        android:id="@+id/lv_cities"
        android:layout_width="409dp"
        android:layout_height="354dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.289" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output:



EXPERIMENT-8

Aim: Build mobile application based on the Google Maps

Description:
Maps SDK for Android:
Building a mobile application based on Google Maps involves leveraging the powerful features provided by the Google Maps Platform APIs to create engaging and interactive experiences for users. The Google Maps SDK for Mobile serves as the foundation for integrating dynamic maps directly into the application interface, allowing developers to display custom-styled maps, add markers and overlays, and enable various interactions such as panning and zooming.

Procedure:
1.Create an API_KEY of google maps to access them in your application.
2.Then Create a project with no activity.
3.Create a Main Activity as a launcher activity.
4.Then in the activity_main.xml create a frame layout and give id as map.
5.The codes for the MainActivity.java and activity_main.xml and AndroidManifests.xml and Build.gradle.ktl(:app) are given in the codes section.

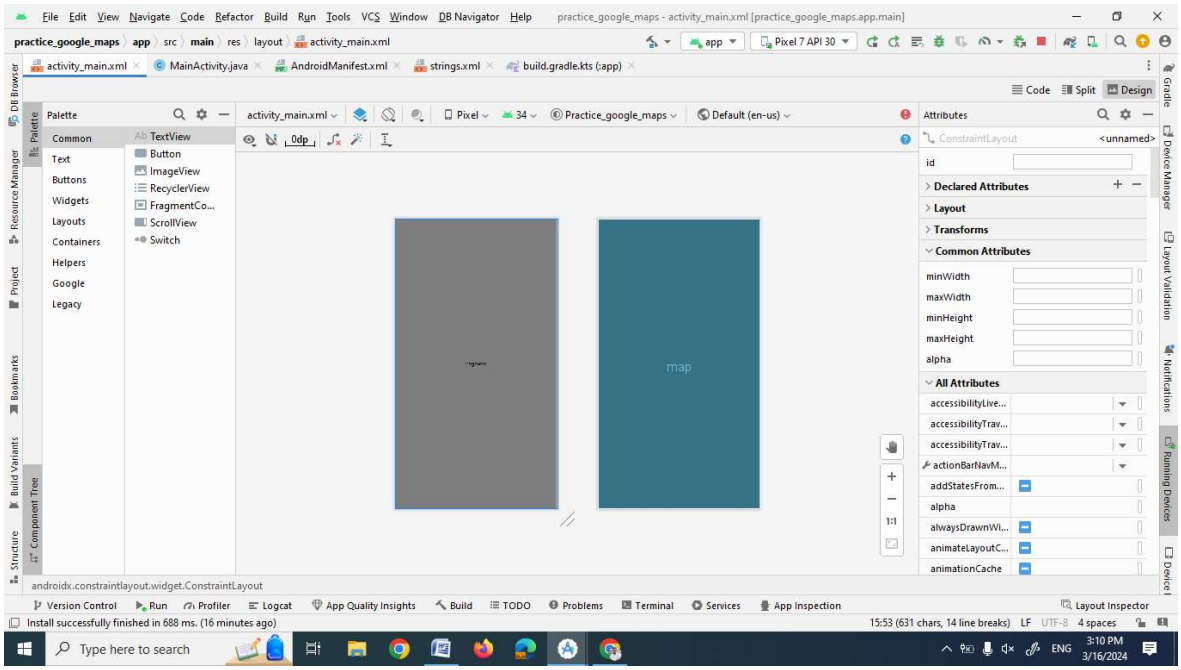
MainActivity.java

```
package com.example.practice_google_maps;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
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 MainActivity extends AppCompatActivity implements OnMapReadyCallback {
GoogleMap gMap;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      SupportMapFragment supportMapFragment=(SupportMapFragment)
            getSupportFragmentManager().findFragmentById(R.id.map);
      supportMapFragment.getMapAsync(this);
   }
   @Override
   public void onMapReady(@NonNull GoogleMap googleMap)
   {
      gMap=googleMap;
      LatLng vja=new LatLng(16.48816,80.69413);
      MarkerOptions mo=new MarkerOptions();
      mo.position(vja);
      mo.title("PVPSIT");
      gMap.addMarker(mo);
      gMap.moveCamera(CameraUpdateFactory.newLatLng(vja));
```

```
        gMap.getUiSettings().setZoomControlsEnabled(true);
        gMap.getUiSettings().setCompassEnabled(true);

    }
}
```

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



AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
```

```
        android:supportsRtl="true"
        android:theme="@style/Theme.Practice_google_maps"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <meta-data
            android:name="com.google.android.geo.API_KEY"
            android:value="@string/mic_maps_api_key" />
    </application>
</manifest
```

Strings.xml

```
<resources>
    <string name="app_name">practice_google_maps</string>
    <string name="mic_maps_api_key">AIzaSyBtNldqVCKeU9eK-Q_eyZE0iHP-
C4RLY5o</string>
</resources>
```

Build.gradle.kts(:app)

```
plugins {

    id("com.android.application")

}

android {

    namespace = "com.example.practice_google_maps"
    compileSdk = 34
    defaultConfig {
        applicationId = "com.example.practice_google_maps"
        minSdk = 24
        targetSdk = 34
        versionCode = 1
       versionName = "1.0"
        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            isMinifyEnabled = false
            proguardFiles(getDefaultProguardFile("proguard-android-
optimize.txt"), "proguard-rules.pro")
        }
    }
    compileOptions {
        sourceCompatibility = JavaVersion.VERSION_1_8
        targetCompatibility = JavaVersion.VERSION_1_8
    }
}
dependencies {
    implementation("androidx.appcompat:appcompat:1.6.1")
    implementation("com.google.android.material:material:1.11.0"
    implementation("androidx.constraintlayout:constraintlayout:2.1.4")
    testImplementation("junit:junit:4.13.2")
    androidTestImplementation("androidx.test.ext:junit:1.1.5")
```

```
    androidTestImplementation("androidx.test.espresso:espresso-core:3.5.1")
    implementation("com.google.android.gms:play-services-maps:18.2.0")

}
```

OUTPUT: