

Week 6: Develop a Registration and Login application that makes use of database.

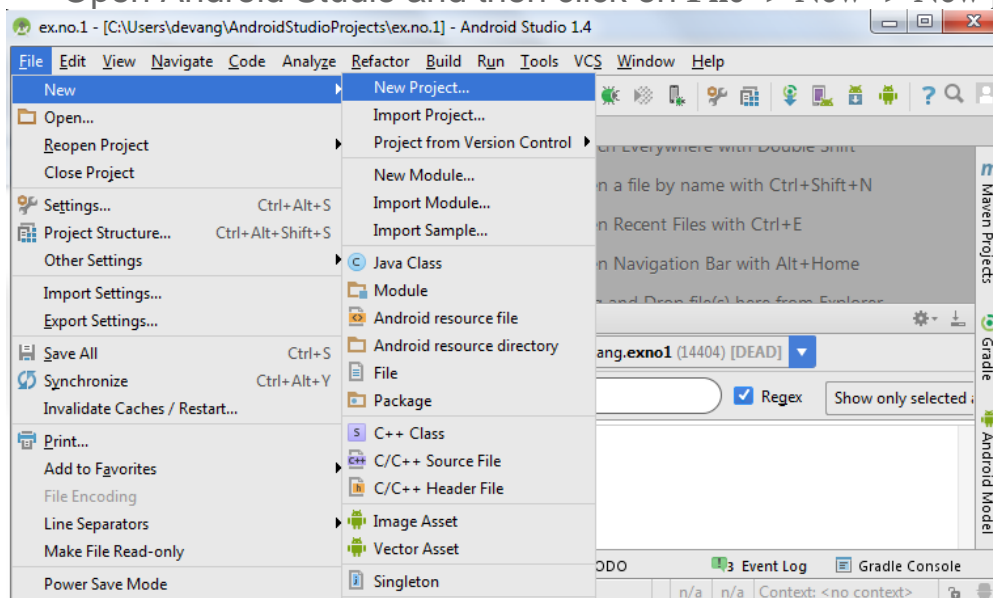
## Aim:

To develop a Simple [Android Application](#) that makes use of [Database](#).

## Procedure:

### Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.



- Then type the Application name as “**ex.no.5**” and click **Next**.

Create New Project

## New Project

Android Studio

### Configure your new project

Application name:

Company Domain:

Package name:  [Edit](#)

Project location:  [Browse](#)

The application name for most apps begins with an uppercase letter

[Previous](#) [Next](#) [Cancel](#) [Finish](#)

- Then select the **Minimum SDK** as shown below and click **Next**.

Help me choose'. Navigation buttons at the bottom are 'Previous', 'Next', 'Cancel', and 'Finish'."/>

Create New Project

## Target Android Devices

### Select the form factors your app will run on

Different platforms may require separate SDKs

☒ Phone and Tablet

Minimum SDK:  [Help me choose](#)

☐ Wear

Minimum SDK:

☐ TV

Minimum SDK:

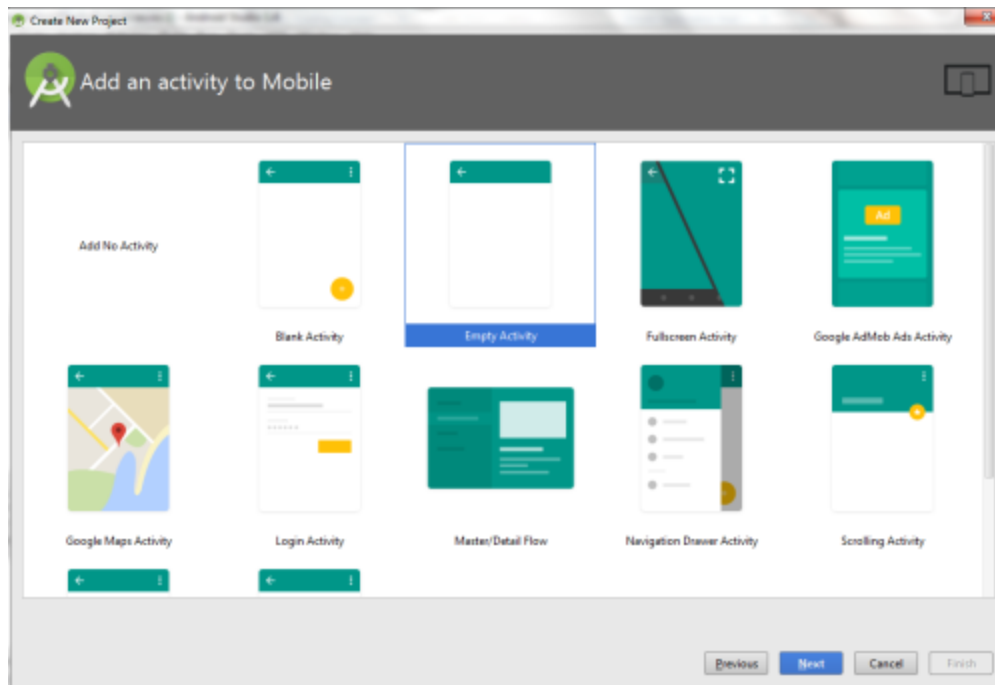
☐ Android Auto

☐ Glass (Not Installed)

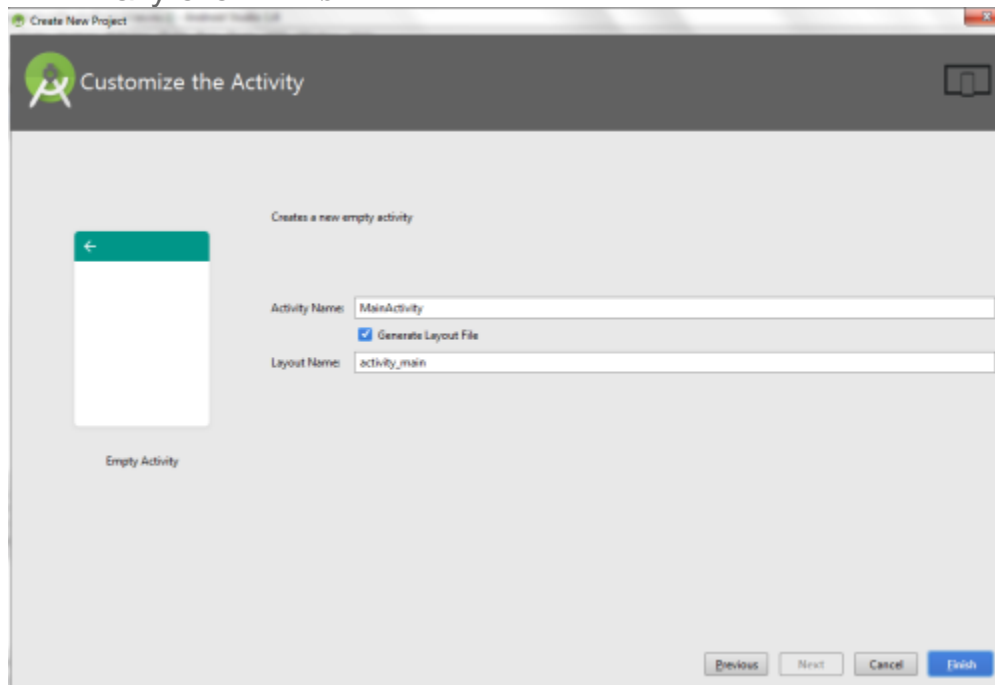
Minimum SDK:

[Previous](#) [Next](#) [Cancel](#) [Finish](#)

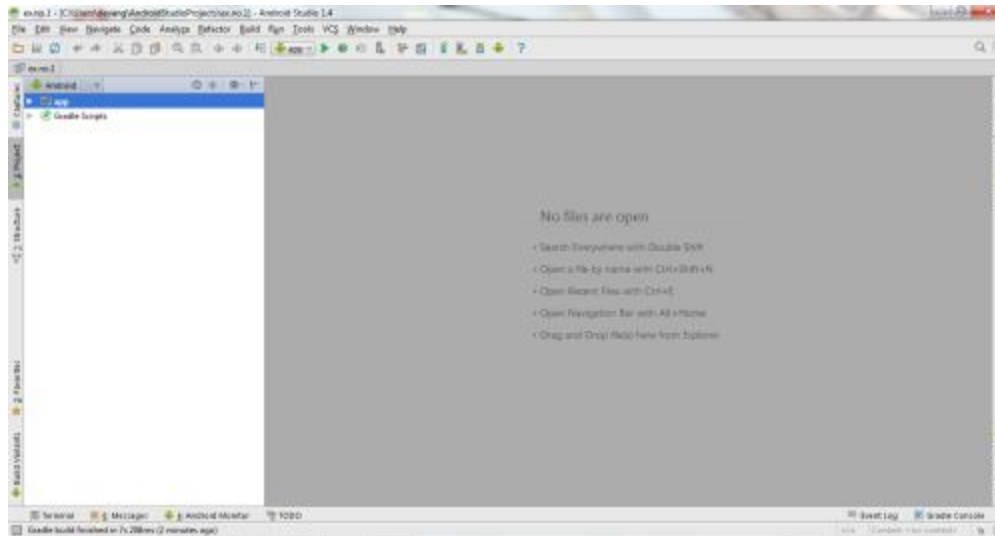
- Then select the **Empty Activity** and click **Next**.



- Finally click **Finish**.

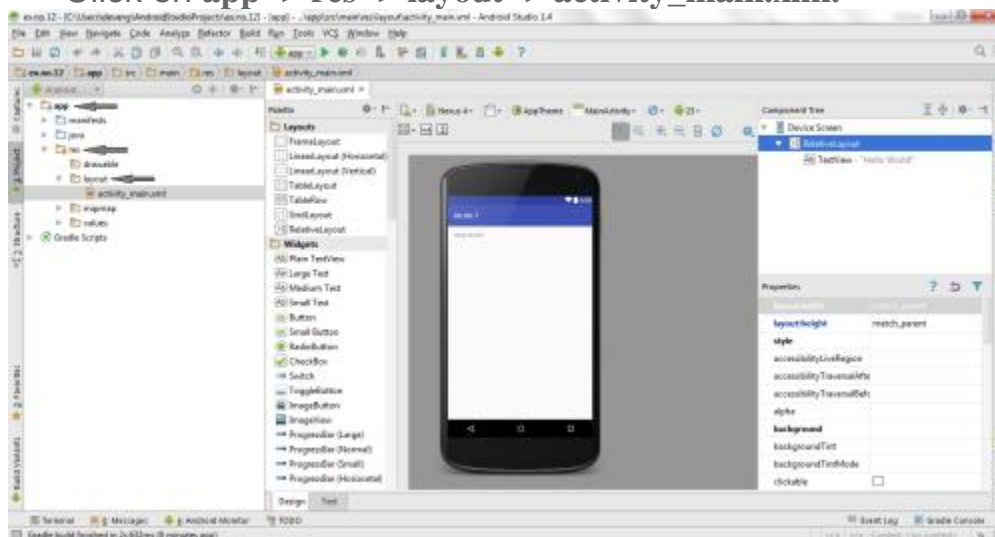


- It will take some time to build and load the project.
- After completion it will look as given below.

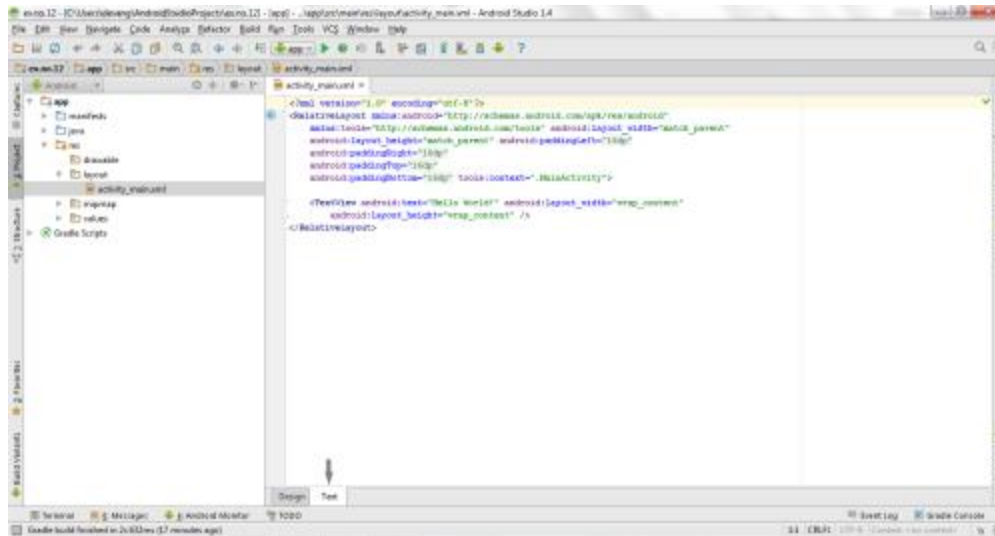


## Designing layout for the Android Application:

- Click on **app** -> **res** -> **layout** -> **activity\_main.xml**.



- Now click on **Text** as shown below.



- Then delete the code which is there and type the code as given below.

### Code for Activity\_main.xml:

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="match_parent"
4      android:layout_height="match_parent">
5      <TextView
6          android:layout_width="wrap_content"
7          android:layout_height="wrap_content"
8          android:layout_x="50dp"
9          android:layout_y="20dp"
10         android:text="Student Details"
11         android:textSize="30sp" />
12
13     <TextView
14         android:layout_width="wrap_content"
15         android:layout_height="wrap_content"
16         android:layout_x="20dp"
17         android:layout_y="110dp"
18         android:text="Enter Rollno:"
19         android:textSize="20sp" />
20
21     <EditText
22         android:id="@+id/Rollno"
23         android:layout_width="150dp"
24         android:layout_height="wrap_content"
25         android:layout_x="175dp"
26         android:layout_y="100dp"
27         android:inputType="number"
28         android:textSize="20sp" />
29
30     <TextView
31         android:layout_width="wrap_content"
32         android:layout_height="wrap_content"
33         android:layout_x="20dp"
34         android:layout_y="160dp"

```

```

35         android:text="Enter Name:"
36         android:textSize="20sp" />
37
38     <EditText
39         android:id="@+id/Name"
40         android:layout_width="150dp"
41         android:layout_height="wrap_content"
42         android:layout_x="175dp"
43         android:layout_y="150dp"
44         android:inputType="text"
45         android:textSize="20sp" />
46
47     <TextView
48         android:layout_width="wrap_content"
49         android:layout_height="wrap_content"
50         android:layout_x="20dp"
51         android:layout_y="210dp"
52         android:text="Enter Marks:"
53         android:textSize="20sp" />
54
55     <EditText
56         android:id="@+id/Marks"
57         android:layout_width="150dp"
58         android:layout_height="wrap_content"
59         android:layout_x="175dp"
60         android:layout_y="200dp"
61         android:inputType="number"
62         android:textSize="20sp" />
63
64     <Button
65         android:id="@+id/Insert"
66         android:layout_width="150dp"
67         android:layout_height="wrap_content"
68         android:layout_x="25dp"
69         android:layout_y="300dp"
70         android:text="Insert"
71         android:textSize="30dp" />
72
73     <Button
74         android:id="@+id/Delete"
75         android:layout_width="150dp"
76         android:layout_height="wrap_content"
77         android:layout_x="200dp"
78         android:layout_y="300dp"
79         android:text="Delete"
80         android:textSize="30dp" />
81
82     <Button
83         android:id="@+id/Update"
84         android:layout_width="150dp"
85         android:layout_height="wrap_content"
86         android:layout_x="25dp"
87         android:layout_y="400dp"
88         android:text="Update"

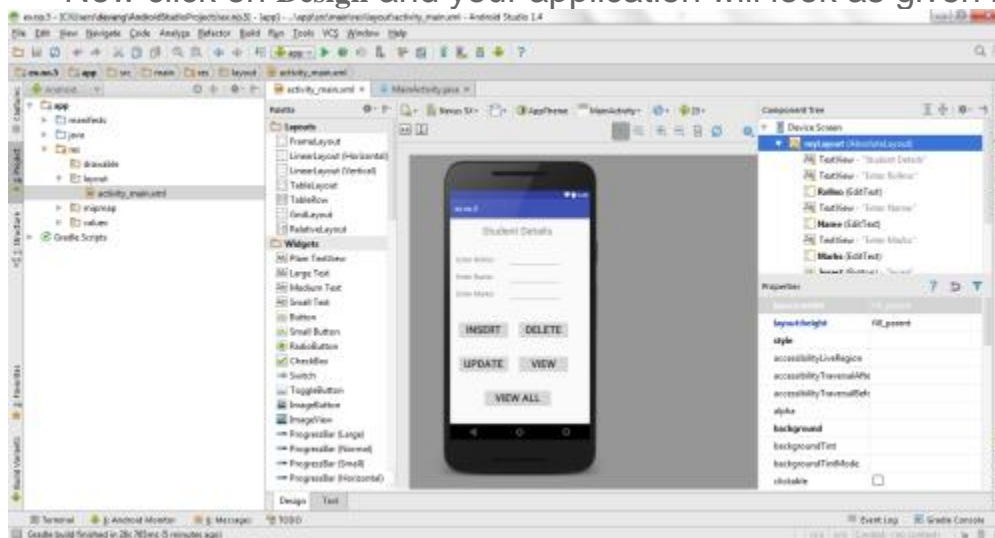
```

```

89         android:textSize="30dp" />
90
91     <Button
92         android:id="@+id/View"
93         android:layout_width="150dp"
94         android:layout_height="wrap_content"
95         android:layout_x="200dp"
96         android:layout_y="400dp"
97         android:text="View"
98         android:textSize="30dp" />
99
100    <Button
101        android:id="@+id/ViewAll"
102        android:layout_width="200dp"
103        android:layout_height="wrap_content"
104        android:layout_x="100dp"
105        android:layout_y="500dp"
106        android:text="View All"
107        android:textSize="30dp" />
108
109 </AbsoluteLayout>

```

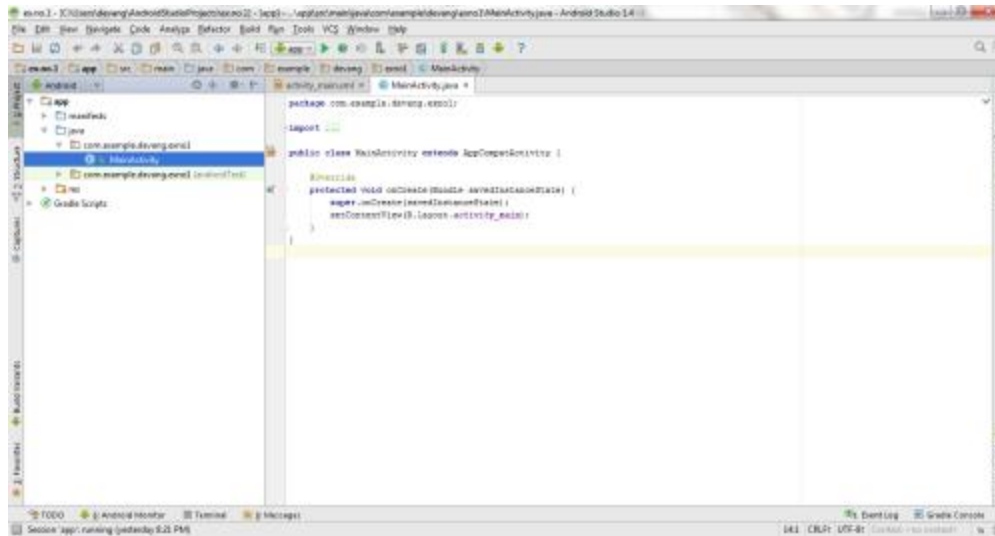
- Now click on **Design** and your application will look as given below.



- So now the designing part is completed.

## Java Coding for the Android Application:

- Click on **app -> java -> com.example.week6 -> MainActivity**.



- Then delete the code which is there and type the code as given below.  
Code for MainActivity.java:

```

1  package com.example.week6;
2
3  import android.app.Activity;
4  import android.app.AlertDialog.Builder;
5  import android.content.Context;
6  import android.database.Cursor;
7  import android.database.sqlite.SQLiteDatabase;
8  import android.os.Bundle;
9  import android.view.View;
10 import android.view.View.OnClickListener;
11 import android.widget.Button;
12 import android.widget.EditText;
13
14 public class MainActivity extends Activity implements OnClickListener
15 {
16     EditText Rollno,Name,Marks;
17     Button Insert,Delete,Update,View,ViewAll;
18     SQLiteDatabase db;
19     /** Called when the activity is first created. */
20     @Override
21     public void onCreate(Bundle savedInstanceState)
22     {
23         super.onCreate(savedInstanceState);
24         setContentView(R.layout.activity_main);
25
26         Rollno=(EditText)findViewById(R.id.Rollno);
27         Name=(EditText)findViewById(R.id.Name);
28         Marks=(EditText)findViewById(R.id.Marks);
29         Insert=(Button)findViewById(R.id.Insert);
30         Delete=(Button)findViewById(R.id.Delete);
31         Update=(Button)findViewById(R.id.Update);
32         View=(Button)findViewById(R.id.View);
33         ViewAll=(Button)findViewById(R.id.ViewAll);
34
35         Insert.setOnClickListener(this);

```



```

36 Delete.setOnClickListener(this);
37 Update.setOnClickListener(this);
38 View.setOnClickListener(this);
39 ViewAll.setOnClickListener(this);
40
41 // Creating database and table
42 db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
43 db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name
44 VARCHAR,marks VARCHAR);");
45 }
46 public void onClick(View view)
47 {
48     // Inserting a record to the Student table
49     if(view==Insert)
50     {
51         // Checking for empty fields
52         if(Rollno.getText().toString().trim().length()==0||
53             Name.getText().toString().trim().length()==0||
54             Marks.getText().toString().trim().length()==0)
55         {
56             showMessage("Error", "Please enter all values");
57             return;
58         }
59         db.execSQL("INSERT INTO student
60 VALUES('"+Rollno.getText()+"','"+Name.getText()+"
61             "','"+Marks.getText()+"');");
62         showMessage("Success", "Record added");
63         clearText();
64     }
65     // Deleting a record from the Student table
66     if(view==Delete)
67     {
68         // Checking for empty roll number
69         if(Rollno.getText().toString().trim().length()==0)
70         {
71             showMessage("Error", "Please enter Rollno");
72             return;
73         }
74         Cursor c=db.rawQuery("SELECT * FROM student WHERE
75 rollno='"+Rollno.getText()+"'", null);
76         if(c.moveToFirst())
77         {
78             db.execSQL("DELETE FROM student WHERE
79 rollno='"+Rollno.getText()+"'");
80             showMessage("Success", "Record Deleted");
81         }
82         else
83         {
84             showMessage("Error", "Invalid Rollno");
85         }
86         clearText();
87     }
88     // Updating a record in the Student table
89     if(view==Update)

```

```

90     {
91         // Checking for empty roll number
92         if(Rollno.getText().toString().trim().length()==0)
93         {
94             showMessage("Error", "Please enter Rollno");
95             return;
96         }
97         Cursor c=db.rawQuery("SELECT * FROM student WHERE
98 rollno='"+Rollno.getText()+"'", null);
99         if(c.moveToFirst()) {
100             db.execSQL("UPDATE student SET name='" + Name.getText() +
101 "','marks='" + Marks.getText() +
102                 "' WHERE rollno='"+Rollno.getText()+"'");
103             showMessage("Success", "Record Modified");
104         }
105         else {
106             showMessage("Error", "Invalid Rollno");
107         }
108         clearText();
109     }
110     // Display a record from the Student table
111     if(view==View)
112     {
113         // Checking for empty roll number
114         if(Rollno.getText().toString().trim().length()==0)
115         {
116             showMessage("Error", "Please enter Rollno");
117             return;
118         }
119         Cursor c=db.rawQuery("SELECT * FROM student WHERE
120 rollno='"+Rollno.getText()+"'", null);
121         if(c.moveToFirst())
122         {
123             Name.setText(c.getString(1));
124             Marks.setText(c.getString(2));
125         }
126         else
127         {
128             showMessage("Error", "Invalid Rollno");
129             clearText();
130         }
131     }
132     // Displaying all the records
133     if(view==ViewAll)
134     {
135         Cursor c=db.rawQuery("SELECT * FROM student", null);
136         if(c.getCount()==0)
137         {
138             showMessage("Error", "No records found");
139             return;
140         }
141         StringBuffer buffer=new StringBuffer();
142         while(c.moveToNext())
143         {

```

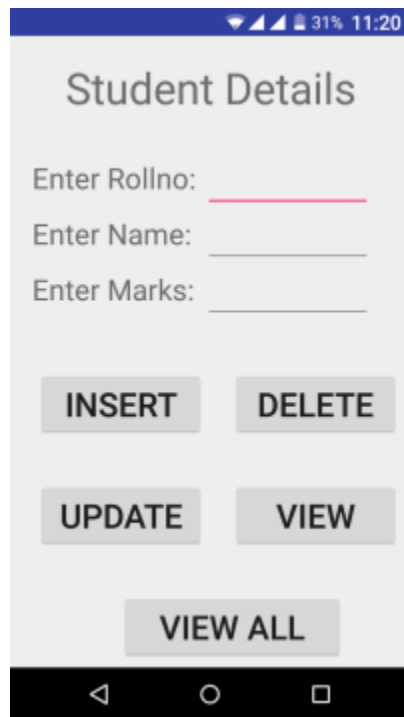
```

144         buffer.append("Rollno: "+c.getString(0)+"\n");
145         buffer.append("Name: "+c.getString(1)+"\n");
146         buffer.append("Marks: "+c.getString(2)+"\n\n");
147     }
148     showMessage("Student Details", buffer.toString());
149 }
150 }
151 public void showMessage(String title,String message)
152 {
153     Builder builder=new Builder(this);
154     builder.setCancelable(true);
155     builder.setTitle(title);
156     builder.setMessage(message);
157     builder.show();
158 }
159 public void clearText()
160 {
161     Rollno.setText("");
162     Name.setText("");
163     Marks.setText("");
164     Rollno.requestFocus();
165 }
166 }

```

- So now the [Coding](#) part is also completed.
- Now run the [application](#) to see the output.

# Output:



Student Details

Enter Rollno:

Enter Name:

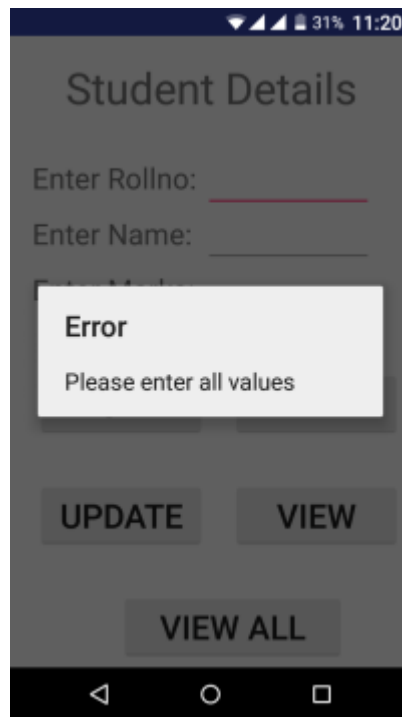
Enter Marks:

INSERT DELETE

UPDATE VIEW

VIEW ALL

This screenshot shows the 'Student Details' app interface. It features three input fields for 'Enter Rollno:', 'Enter Name:', and 'Enter Marks:'. Below these fields are five buttons: 'INSERT', 'DELETE', 'UPDATE', 'VIEW', and 'VIEW ALL'. The app is running on an Android device with a status bar at the top showing 31% battery and the time 11:20.



Student Details

Enter Rollno:

Enter Name:

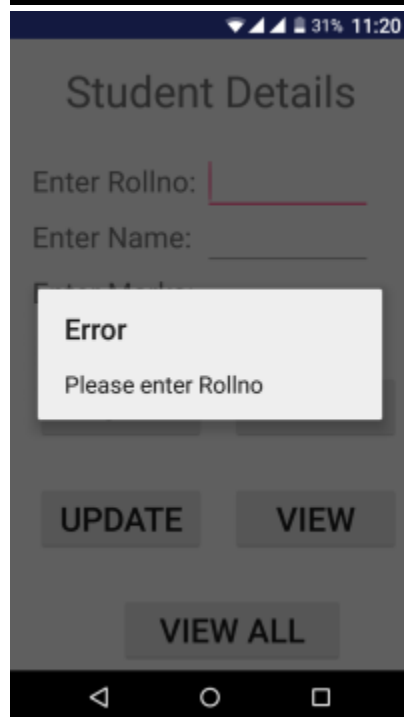
Error

Please enter all values

UPDATE VIEW

VIEW ALL

This screenshot shows the same 'Student Details' app interface as the first, but with an error dialog box displayed. The dialog box has the title 'Error' and the message 'Please enter all values'. The background of the app is dimmed. The status bar at the top shows 31% battery and the time 11:20.



Student Details

Enter Rollno:

Enter Name:

Error

Please enter Rollno

UPDATE VIEW

VIEW ALL

This screenshot shows the 'Student Details' app interface with an error dialog box. The dialog box has the title 'Error' and the message 'Please enter Rollno'. The background of the app is dimmed. The status bar at the top shows 31% battery and the time 11:20.

Student Details

Enter Rollno: 1

Enter Name: devang

Enter Marks: 95

INSERT DELETE

UPDATE VIEW

VIEW ALL

Student Details

Enter Rollno:   

Enter Name:   

Enter Marks:   

Success

Record added

UPDATE VIEW

VIEW ALL

Student Details

Enter Rollno:   

Enter Name:   

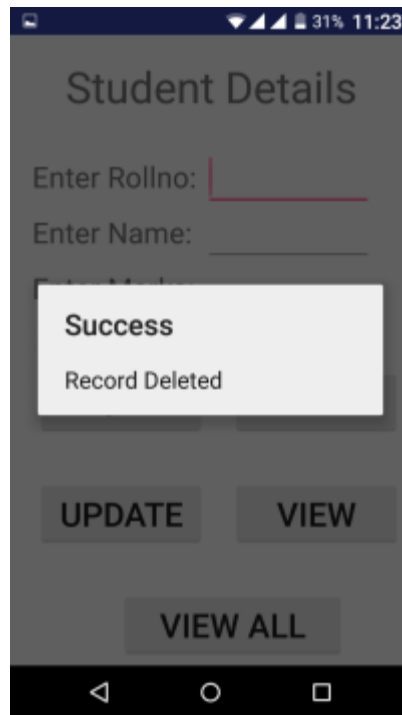
Enter Marks:   

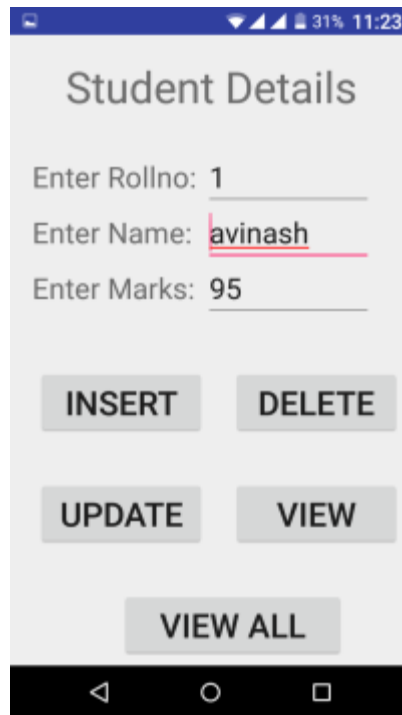
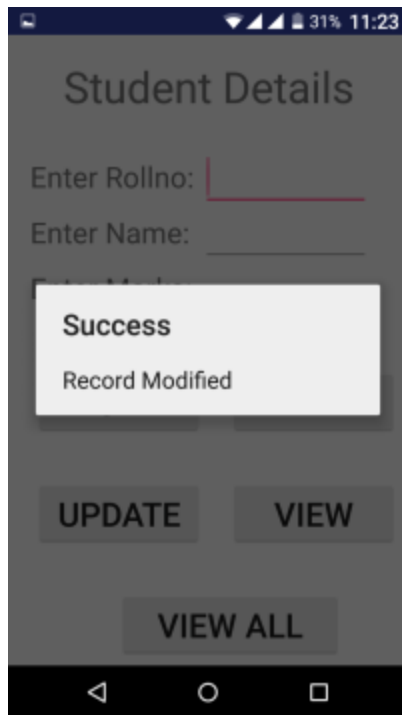
Error

No records found

UPDATE VIEW

VIEW ALL





## Result:

Thus a Simple Android Application that makes use of Database is developed and executed successfully.