

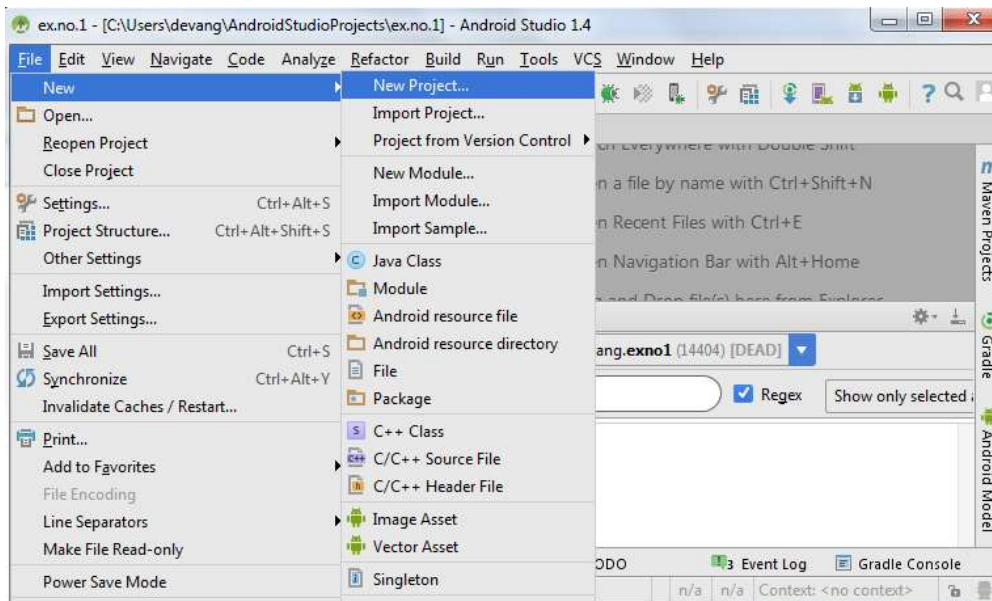
Application that makes use of database.

To develop a Simple Android Application that makes use of Database.

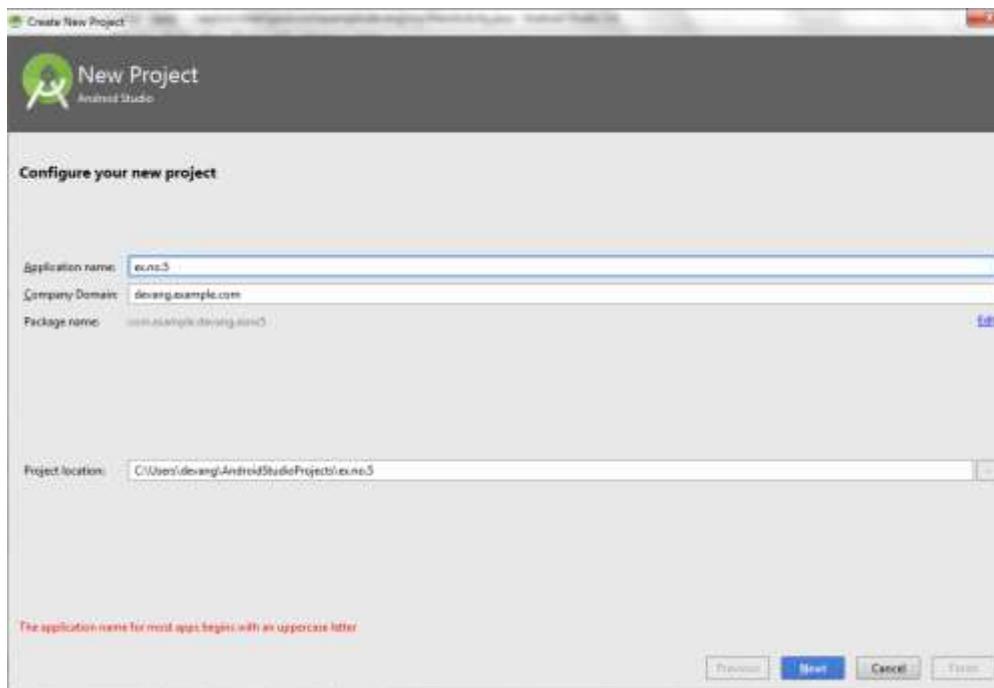
Procedure:

Creating a New project:

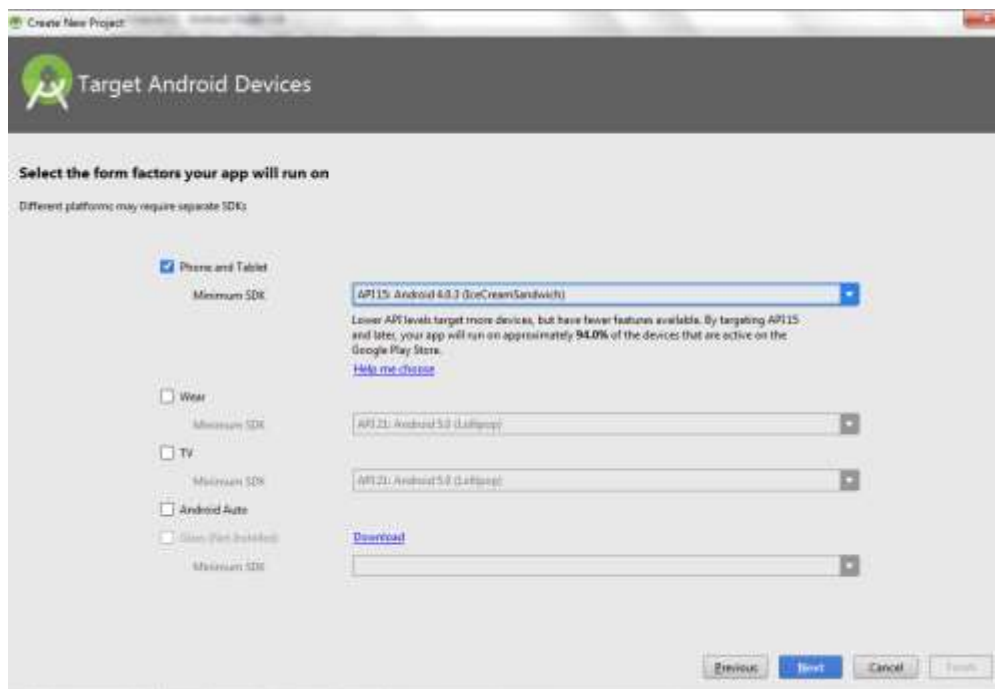
- Open Android Studio and then click on **File -> New -> New project.**



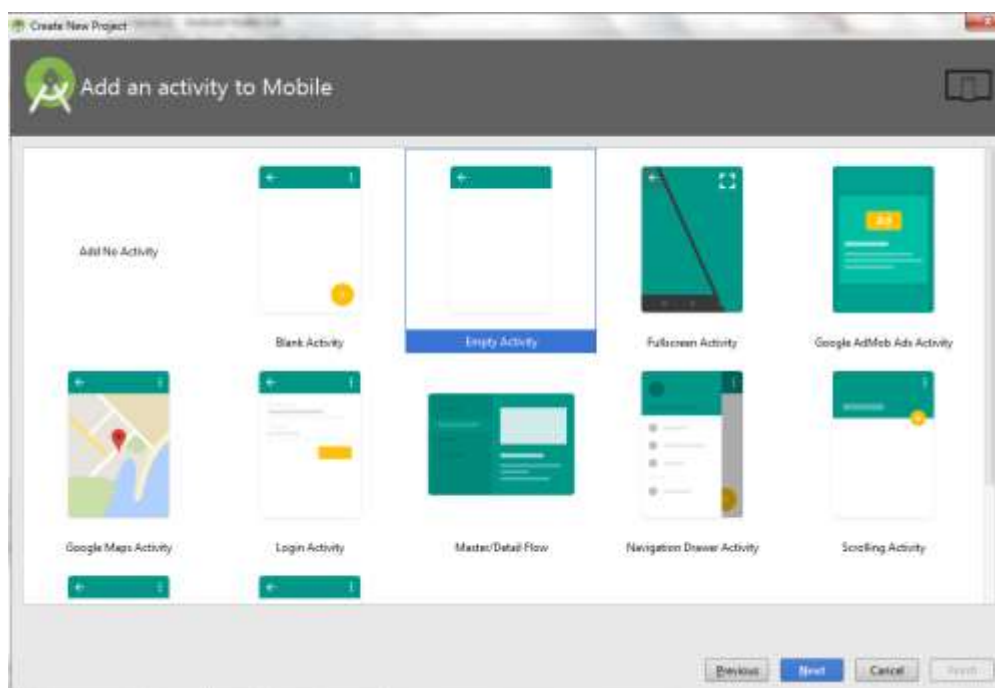
- Then type the Application name as “**ex.no.5**” and click **Next.**



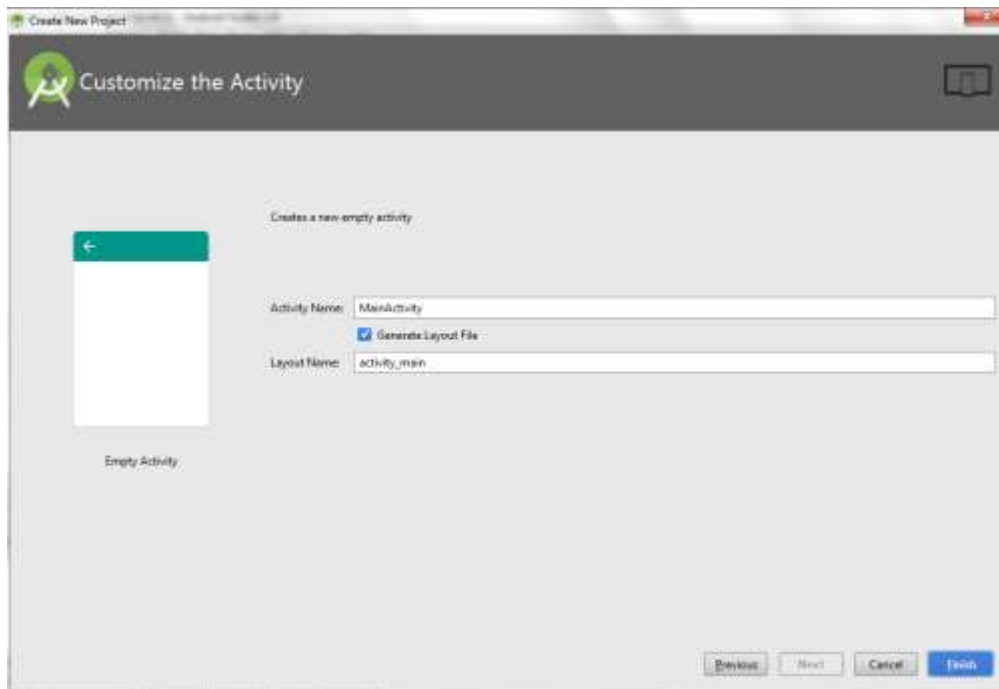
- Then select the **Minimum SDK** as shown below and click **Next**.



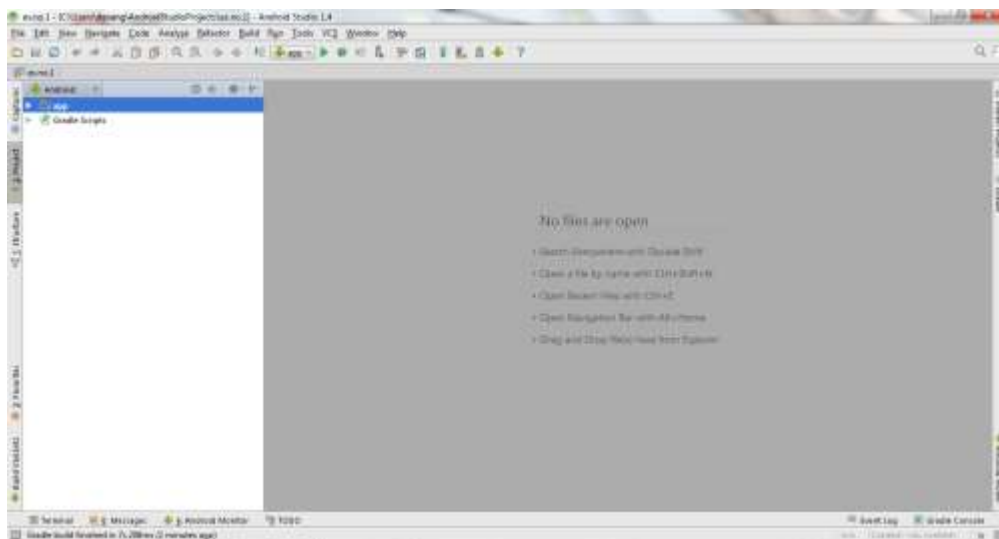
- Then select the **Empty Activity** and click **Next**.



- Finally click **Finish**.

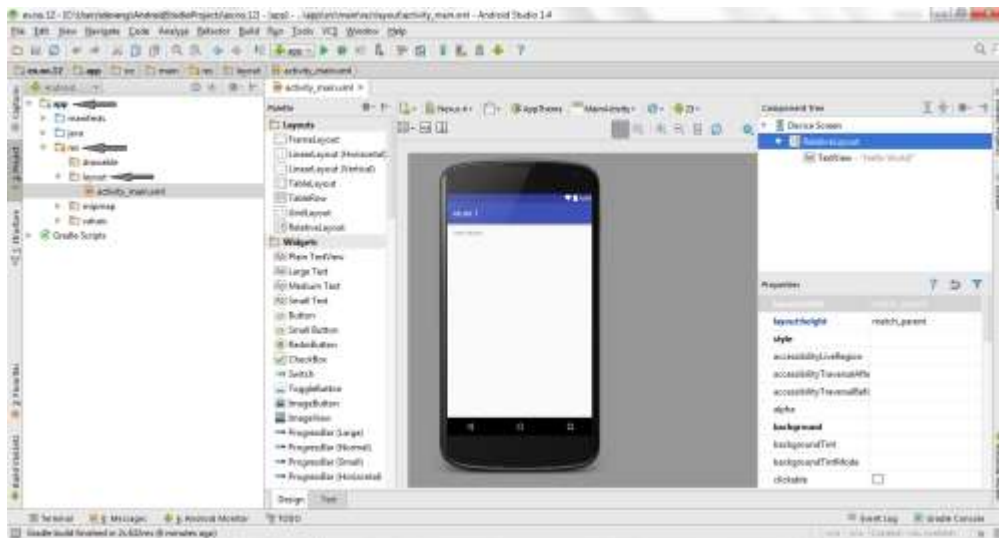


- It will take some time to build and load the project.
- After completion it will look as given below.

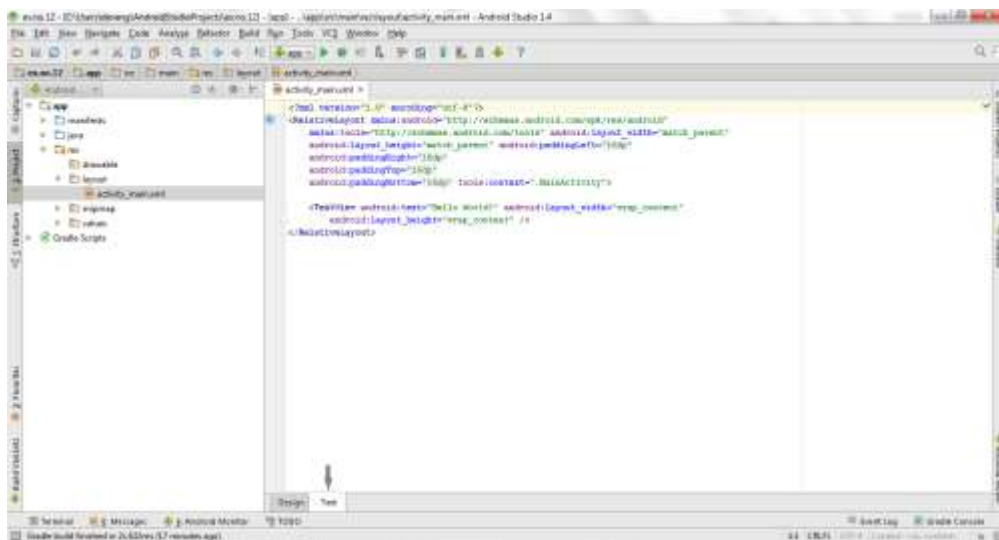


Designing layout for the Android Application:

- 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:

```

2
1 <?xml version="1.0" encoding="utf-8"?>
2 <AbsoluteLayout
3   xmlns:android="http://schemas.android.com/apk/res/android"
4     android:layout_width="match_parent"
5     android:layout_height="match_parent">
6     <TextView
7       android:layout_width="wrap_content"
8       android:layout_height="wrap_content"
9       android:layout_x="50dp"
10      android:layout_y="20dp"
11      android:text="Student Details"
12      android:textSize="30sp" />
13   <TextView

```

```

13         android:layout_width="wrap_content"
14         android:layout_height="wrap_content"
15         android:layout_x="20dp"
16         android:layout_y="110dp"
17         android:text="Enter Rollno:"
18         android:textSize="20sp" />
19
20     <EditText
21         android:id="@+id/Rollno"
22         android:layout_width="150dp"
23         android:layout_height="wrap_content"
24         android:layout_x="175dp"
25         android:layout_y="100dp"
26         android:inputType="number"
27         android:textSize="20sp" />
28
29     <TextView
30         android:layout_width="wrap_content"
31         android:layout_height="wrap_content"
32         android:layout_x="20dp"
33         android:layout_y="160dp"
34         android:text="Enter Name:"
35         android:textSize="20sp" />
36
37     <EditText
38         android:id="@+id/Name"
39         android:layout_width="150dp"
40         android:layout_height="wrap_content"
41         android:layout_x="175dp"
42         android:layout_y="150dp"
43         android:inputType="text"
44         android:textSize="20sp" />
45
46     <TextView
47         android:layout_width="wrap_content"
48         android:layout_height="wrap_content"
49         android:layout_x="20dp"
50         android:layout_y="210dp"
51         android:text="Enter Marks:"
52         android:textSize="20sp" />
53
54     <EditText
55         android:id="@+id/Marks"
56         android:layout_width="150dp"
57         android:layout_height="wrap_content"
58         android:layout_x="175dp"
59         android:layout_y="200dp"
60         android:inputType="number"
61         android:textSize="20sp" />
62
63     <Button
64         android:id="@+id/Insert"
65         android:layout_width="150dp"
66         android:layout_height="wrap_content"
67         android:layout_x="25dp"
68         android:layout_y="300dp"
69         android:text="Insert"
70         android:textSize="30dp" />
71
72     <Button

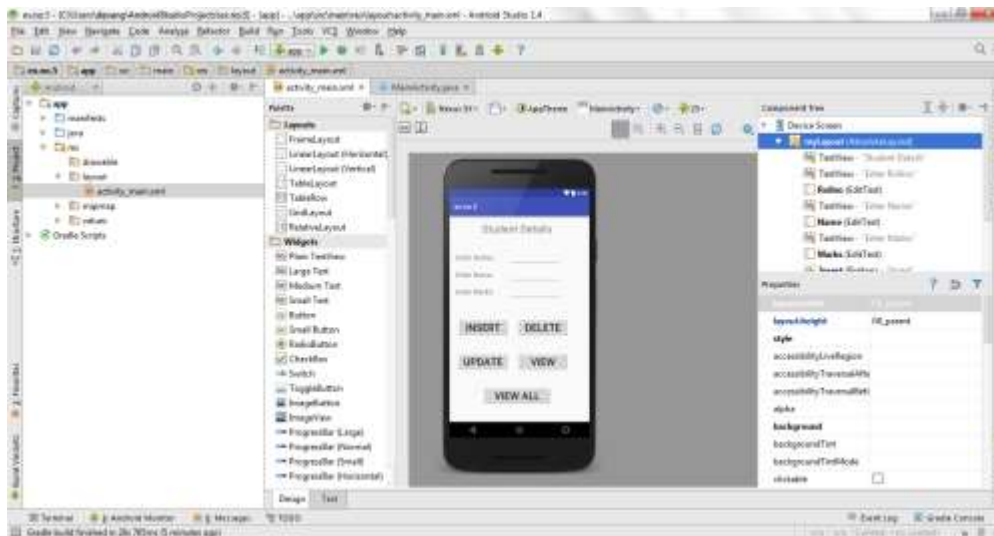
```

```

63         android:id="@+id/Delete"
64         android:layout_width="150dp"
65         android:layout_height="wrap_content"
66         android:layout_x="200dp"
67         android:layout_y="300dp"
68         android:text="Delete"
69         android:textSize="30dp" />
70     <Button
71         android:id="@+id/Update"
72         android:layout_width="150dp"
73         android:layout_height="wrap_content"
74         android:layout_x="25dp"
75         android:layout_y="400dp"
76         android:text="Update"
77         android:textSize="30dp" />
78     <Button
79         android:id="@+id/View"
80         android:layout_width="150dp"
81         android:layout_height="wrap_content"
82         android:layout_x="200dp"
83         android:layout_y="400dp"
84         android:text="View"
85         android:textSize="30dp" />
86     <Button
87         android:id="@+id/ViewAll"
88         android:layout_width="200dp"
89         android:layout_height="wrap_content"
90         android:layout_x="100dp"
91         android:layout_y="500dp"
92         android:text="View All"
93         android:textSize="30dp" />
94 </AbsoluteLayout>
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109

```

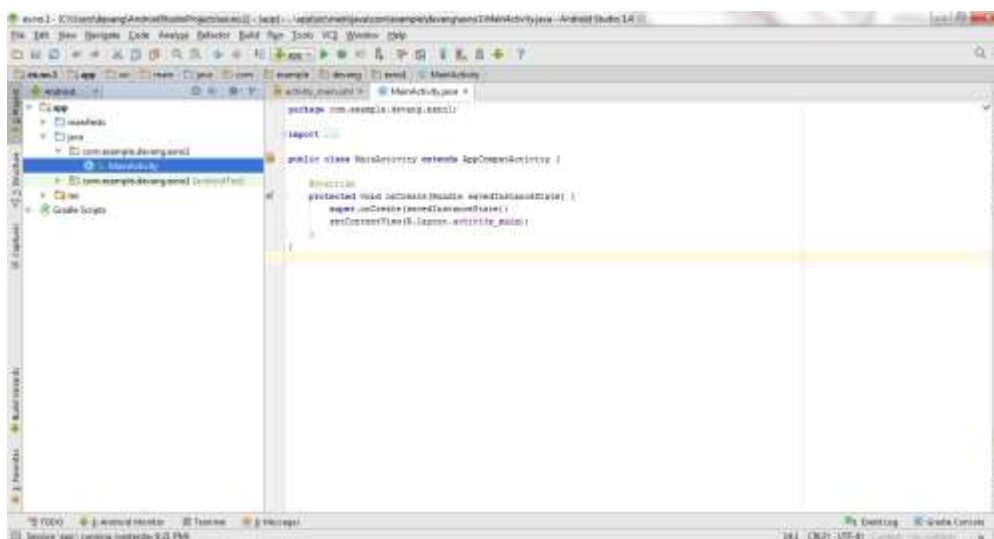
- Now click on **Design** and your application will look as given below.



- So now the designing part is completed.

Java Coding for the Android Application:

- Click on app -> java -> com.example.exno5 -> MainActivity.



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

Code for MainActivity.java:

```

2
1 package com.example.exno5;
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;

```

```

9  import android.widget.Button;
10 import android.widget.EditText;
11
12 public class MainActivity extends Activity implements OnClickListener
13 {
14     EditText Rollno,Name,Marks;
15     Button Insert,Delete,Update,View,ViewAll;
16     SQLiteDatabase db;
17     /** Called when the activity is first created. */
18     @Override
19     public void onCreate(Bundle savedInstanceState)
20     {
21         super.onCreate(savedInstanceState);
22         setContentView(R.layout.activity_main);
23
24         Rollno=(EditText) findViewById(R.id.Rollno);
25         Name=(EditText) findViewById(R.id.Name);
26         Marks=(EditText) findViewById(R.id.Marks);
27         Insert=(Button) findViewById(R.id.Insert);
28         Delete=(Button) findViewById(R.id.Delete);
29         Update=(Button) findViewById(R.id.Update);
30         View=(Button) findViewById(R.id.View);
31         ViewAll=(Button) findViewById(R.id.ViewAll);
32
33         Insert.setOnClickListener(this);
34         Delete.setOnClickListener(this);
35         Update.setOnClickListener(this);
36         View.setOnClickListener(this);
37         ViewAll.setOnClickListener(this);
38
39         // Creating database and table
40         db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE,
41 null);
42         db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno
43 VARCHAR,name VARCHAR,marks VARCHAR);");
44     }
45     public void onClick(View view)
46     {
47         // Inserting a record to the Student table
48         if(view==Insert)
49         {
50             // Checking for empty fields
51             if(Rollno.getText().toString().trim().length()==0||
52                 Name.getText().toString().trim().length()==0||
53                 Marks.getText().toString().trim().length()==0)
54             {
55                 showMessage("Error", "Please enter all values");
56                 return;
57             }
58             db.execSQL("INSERT INTO student
59 VALUES ('"+Rollno.getText()+"','"+Name.getText()+"
60             "','"+Marks.getText()+"');");
61             showMessage("Success", "Record added");
62             clearText();
63         }
64         // Deleting a record from the Student table
65         if(view==Delete)
66         {
67             // Checking for empty roll number
68             if(Rollno.getText().toString().trim().length()==0)

```



```

59         {
60             showMessage("Error", "Please enter Rollno");
61             return;
62         }
63         Cursor c=db.rawQuery("SELECT * FROM student WHERE
64 rollno='"+Rollno.getText()+"'", null);
65         if(c.moveToFirst())
66         {
67             db.execSQL("DELETE FROM student WHERE
68 rollno='"+Rollno.getText()+"'");
69             showMessage("Success", "Record Deleted");
70         }
71         else
72         {
73             showMessage("Error", "Invalid Rollno");
74         }
75         clearText();
76     }
77     // Updating a record in the Student table
78     if(view==Update)
79     {
80         // Checking for empty roll number
81         if(Rollno.getText().toString().trim().length()==0)
82         {
83             showMessage("Error", "Please enter Rollno");
84             return;
85         }
86         Cursor c=db.rawQuery("SELECT * FROM student WHERE
87 rollno='"+Rollno.getText()+"'", null);
88         if(c.moveToFirst()) {
89             db.execSQL("UPDATE student SET name='"+ Name.getText()
90 + "',marks='"+ Marks.getText() +
91             "' WHERE rollno='"+Rollno.getText()+"'");
92             showMessage("Success", "Record Modified");
93         }
94         else {
95             showMessage("Error", "Invalid Rollno");
96         }
97         clearText();
98     }
99     // Display a record from the Student table
100    if(view==View)
101    {
102        // Checking for empty roll number
103        if(Rollno.getText().toString().trim().length()==0)
104        {
105            showMessage("Error", "Please enter Rollno");
106            return;
107        }
108        Cursor c=db.rawQuery("SELECT * FROM student WHERE
109rollno='"+Rollno.getText()+"'", null);
110        if(c.moveToFirst())
111        {
112            Name.setText(c.getString(1));
113            Marks.setText(c.getString(2));
114        }
115        else
116        {
117            showMessage("Error", "Invalid Rollno");
118            clearText();
119        }

```

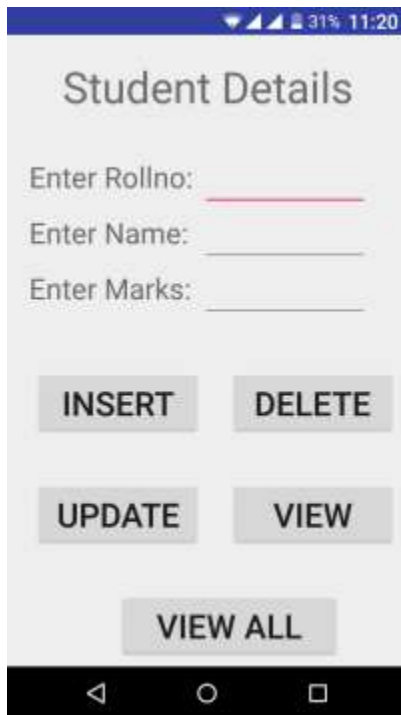
```

109     }
110     // Displaying all the records
111     if (view == ViewAll)
112     {
113         Cursor c = db.rawQuery("SELECT * FROM student", null);
114         if (c.getCount() == 0)
115         {
116             showMessage("Error", "No records found");
117             return;
118         }
119         StringBuffer buffer = new StringBuffer();
120         while (c.moveToNext())
121         {
122             buffer.append("Rollno: " + c.getString(0) + "\n");
123             buffer.append("Name: " + c.getString(1) + "\n");
124             buffer.append("Marks: " + c.getString(2) + "\n\n");
125         }
126         showMessage("Student Details", buffer.toString());
127     }
128 }
129 public void showMessage(String title, String message)
130 {
131     Builder builder = new Builder(this);
132     builder.setCancelable(true);
133     builder.setTitle(title);
134     builder.setMessage(message);
135     builder.show();
136 }
137 public void clearText()
138 {
139     Rollno.setText("");
140     Name.setText("");
141     Marks.setText("");
142     Rollno.requestFocus();
143 }
144 }
145
146
147
148
149
150
151
152
153
154
155
156
157
158

```

- So now the Coding part is also completed.
- Now run the application to see the output.

Output:



Student Details

Enter Rollno:

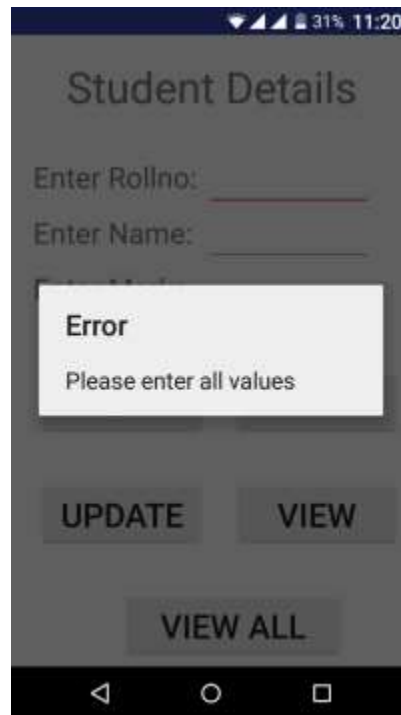
Enter Name:

Enter Marks:

INSERT DELETE

UPDATE VIEW

VIEW ALL



Student Details

Enter Rollno:

Enter Name:

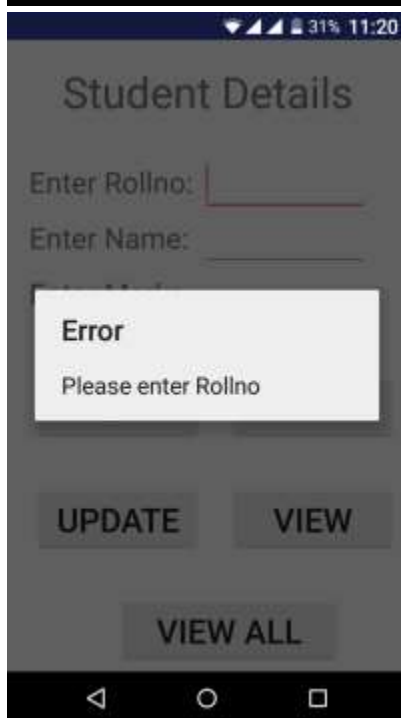
Enter Marks:

Error

Please enter all values

UPDATE VIEW

VIEW ALL



Student Details

Enter Rollno:

Enter Name:

Enter Marks:

Error

Please enter Rollno

UPDATE VIEW

VIEW ALL

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:

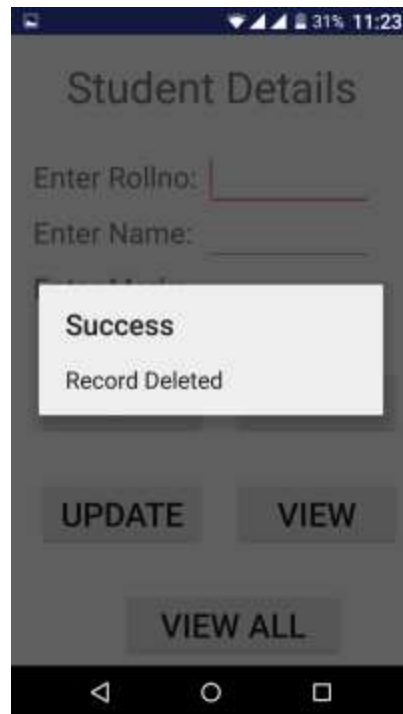
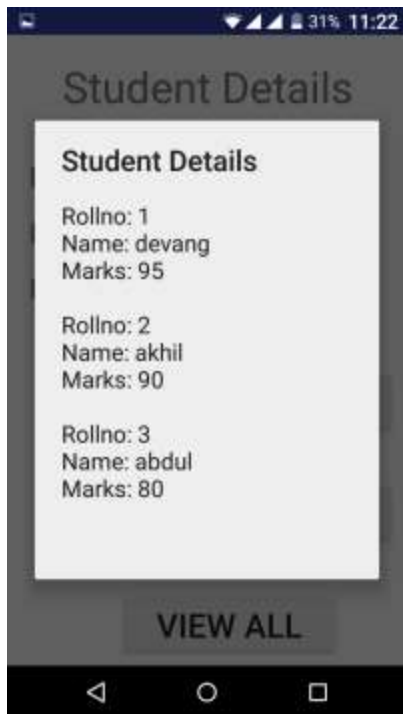
Enter Marks:

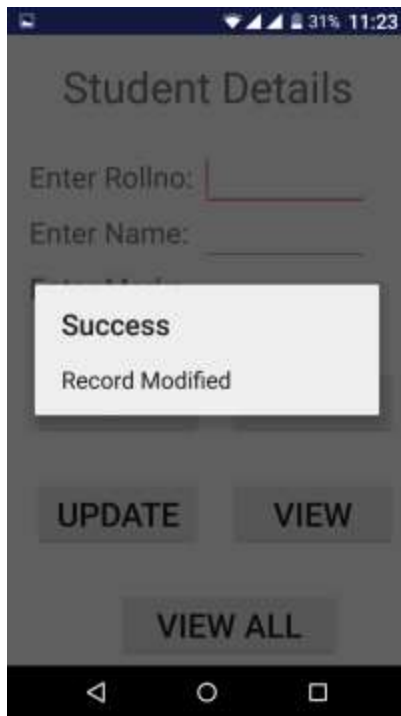
Error

No records found

UPDATE VIEW

VIEW ALL





Result:

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