T.J.S ENGINEERING COLLEGE

(Approved by AICTE &Affiliated to Anna University, Chennai)

Peruvoyal, (Near Kavarapettai),

Gummidipoondi Taluk,

Thiruvallur District-601206

NAME : ……

REG NO : ……

DEPARTMENT : ……..

SUBJECT CODE : ……

YEAR/SEM : ……

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Thiruvallur District-601206.

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DATE OF EXAMINATION : .....

REGISTER NUMBER : | | | | | | | | | | | | |

Certified that this is the Bonafide record of practical work done by the aforesaid student in the _____during the year _____.

Laboratory in charge Head of the Department

Internal Examiner External Examiner

S.NO	NAME OF EXPERIMENT	DATE	MARKS	SIGN

LIST OF EXPERIMENTS

1. Develop an application that uses GUI components, Font, Layout Managers and event listeners.

2. Develop an application that makes use of databases

3. Develop a native application that uses GPS location information

4. Implement an application that creates an alert upon receiving a message

5. Develop an application that makes use of RSS Feed.

6. Create an application using Sensor Manager

7. Create an android application that converts the user input text to voice.

8. Develop a Mobile application for simple and day to day needs

CO-PO MAPPING

CO	POs					
	PO1	PO2	PO3	PO4	PO5	PO6
1	3	2	1	2	2	1
2	3	3	1	2	1	1
3	3	3	1	2	1	1
4	3	3	2	2	2	1
5	3	2	2	1	1	1
Avg	3	2.6	1.4	1.8	1.4	1

Ex. No: 01	Develop an application that uses GUI components, Font and Colors
Date:	

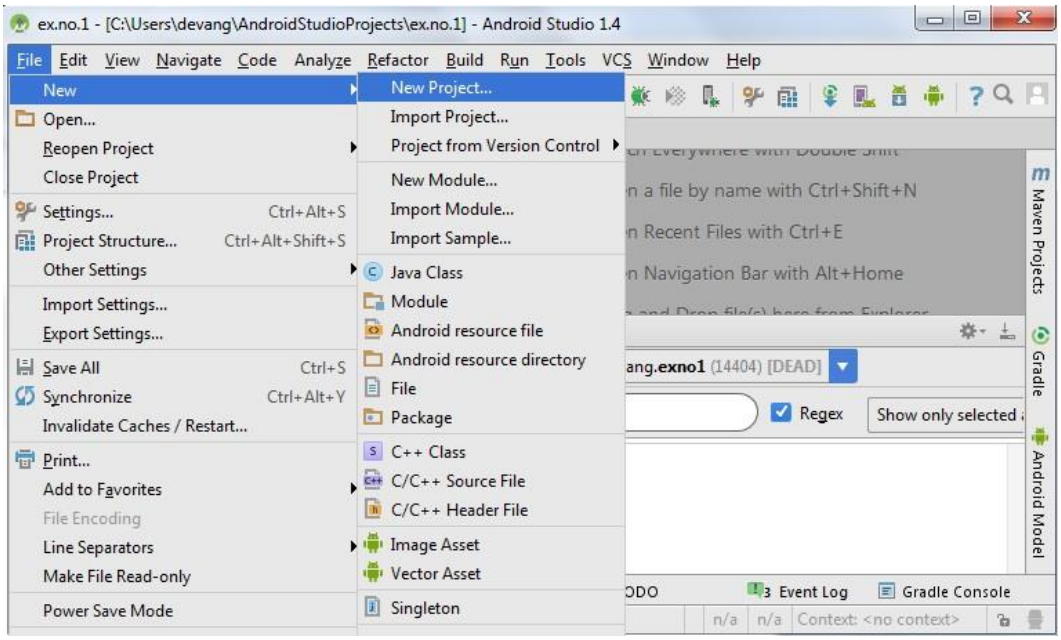
Aim:

To develop a Simple Android Application that uses GUI components, Font and Colors.

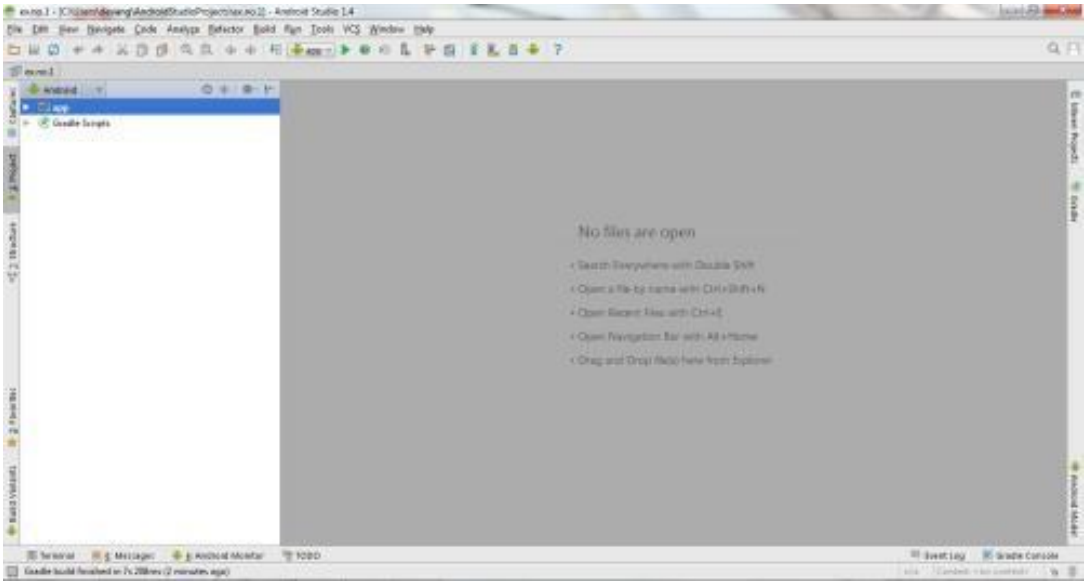
Procedure:

Creating a New project:

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



- Then type the Application name as **"exno1"**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:

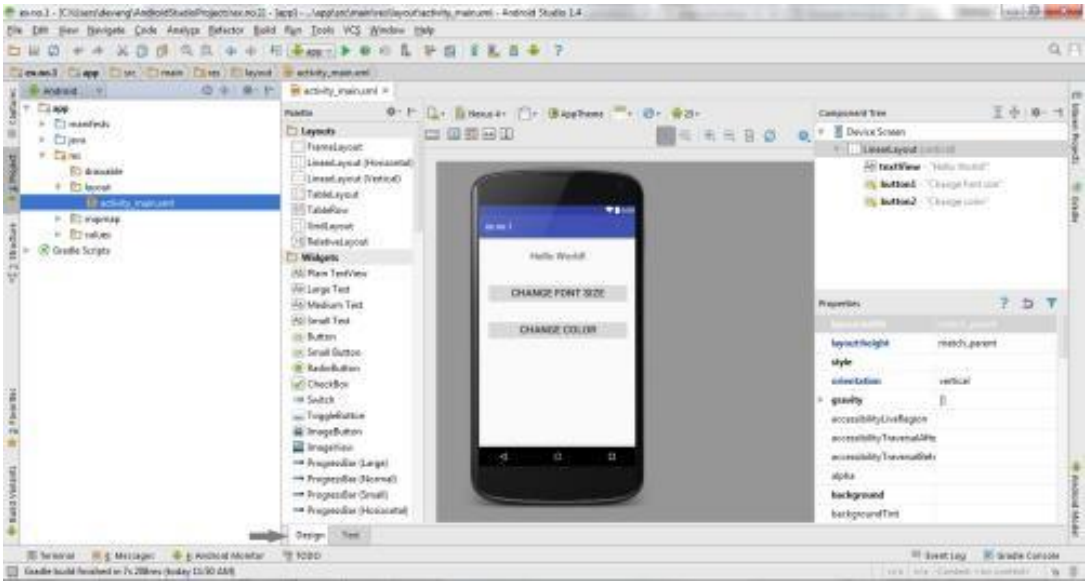
- Click on **app -> res -> layout -> activity_main.xml**.
- Now click on Text as shown below.
- Then delete the code which is there and type the code as given below.

Code for Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:orientation="vertical"
  android:layout_width="match_parent"
  android:layout_height="match_parent">
<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:gravity="center"
    android:text="Hello World!"
    android:textSize="25sp"
    android:textStyle="bold" />
<Button
    android:id="@+id/button1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:gravity="center"
    android:text="Change font size"
    android:textSize="25sp" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:gravity="center"
    android:text="Change color"
    android:textSize="25sp" />
</LinearLayout>
```

- 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.exno1 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

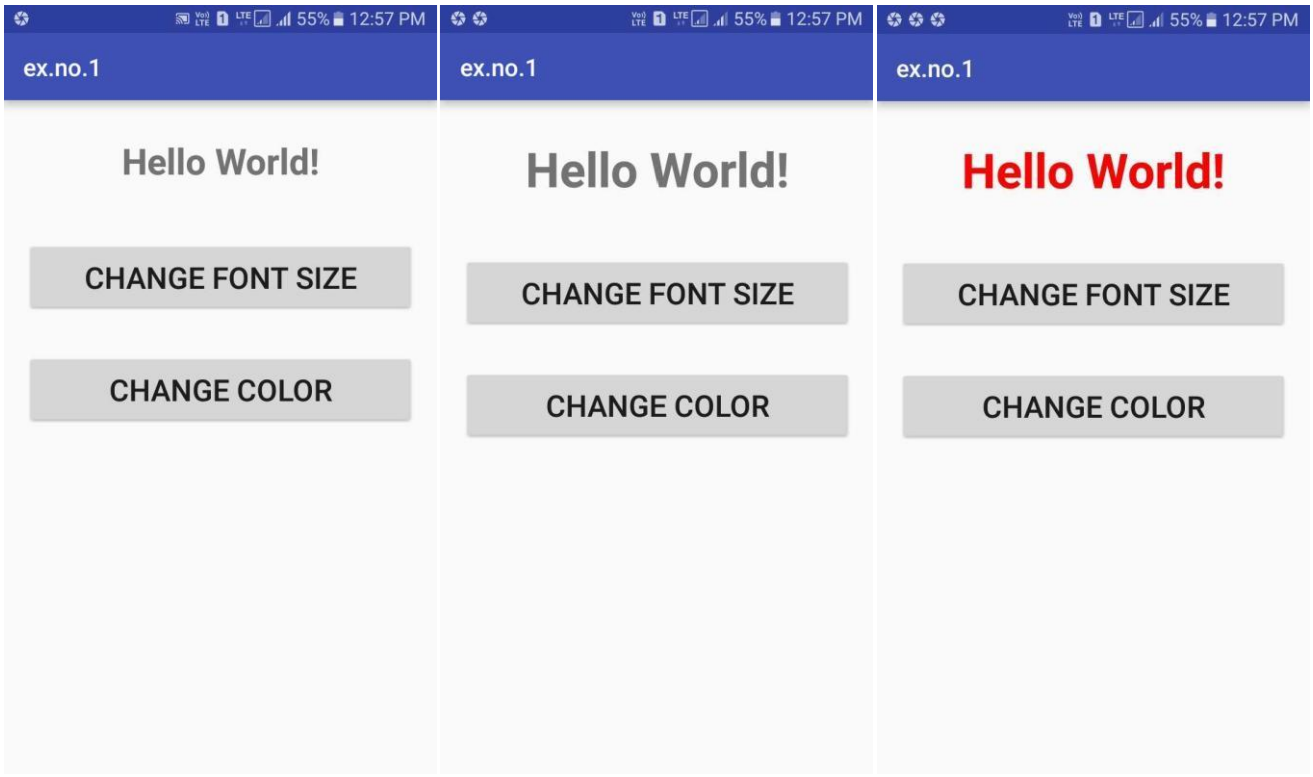
```
package com.example.exno1;
import android.graphics.Color;
//import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{
  int  ch=1;
  float font=30;
```

```
@Override
protected void onCreate(Bundle savedInstanceState)
{
  super.onCreate(savedInstanceState);
  setContentView(R.layout.activity_main);
  final TextView t= (TextView) findViewById(R.id.textView);
  Button b1= (Button) findViewById(R.id.button1);
  b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
      t.setTextSize(font);
      font = font + 5;
       if (font == 50)
          font = 30;
    }
  });
  Button b2= (Button) findViewById(R.id.button2);
  b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
      switch (ch) {
        case 1:
          t.setTextColor(Color.RED);
          break;
        case 2:
          t.setTextColor(Color.GREEN);
          break;
        case 3:
          t.setTextColor(Color.BLUE);
          break;
        case 4:
          t.setTextColor(Color.CYAN);
          break;
        case 5:
          t.setTextColor(Color.YELLOW);
          break;
        case 6:
          t.setTextColor(Color.MAGENTA);
          break;
      }
      ch++;
      if (ch == 7)
```

```
            ch = 1;
        }
    });
  }
}
```

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

Output:



Result:

Thus a Simple Android Application that uses GUI components, Font and Colors is developed and executed successfully.

Ex. No. 02 **Develop an application that makes use of database**
Date:

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 **"exno4"** and click Next.
- Then **select the Minimum S**DK 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:

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent">
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="50dp"
    android:layout_y="20dp"
    android:text="Student Details"
    android:textSize="30sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="110dp"
    android:text="Enter Rollno:"
    android:textSize="20sp" />
```

```
<EditText
    android:id="@+id/Rollno"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="100dp"
    android:inputType="number"
    android:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="160dp"
    android:text="Enter Name:"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Name"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="150dp"
    android:inputType="text"
    android:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="210dp"
    android:text="Enter Marks:"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Marks"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
```

```
    android:layout_x="175dp"
    android:layout_y="200dp"
    android:inputType="number"
    android:textSize="20sp" />

<Button
    android:id="@+id/Insert"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="300dp"
    android:text="Insert"
    android:textSize="30dp" />

<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="300dp"
    android:text="Delete"
    android:textSize="30dp" />

<Button
    android:id="@+id/Update"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="400dp"
    android:text="Update"
    android:textSize="30dp" />

<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="400dp"
    android:text="View"
```

```
    android:textSize="30dp" />

<Button
    android:id="@+id/ViewAll"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_x="100dp"
    android:layout_y="500dp"
    android:text="View All"
    android:textSize="30dp" />

</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.exno4 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

```
packagecom.example.exno4;
 import android.app.Activity;
import android.app.AlertDialog.Builder;
import  android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener
{
  EditText Rollno,Name,Marks;
  Button Insert,Delete,Update,View,ViewAll;
  SQLiteDatabase db;
  /** Called when the activity is first created. */
  @Override
  public void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
```

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

    Rollno=(EditText)findViewById(R.id.Rollno);
    Name=(EditText)findViewById(R.id.Name);
    Marks=(EditText)findViewById(R.id.Marks);
    Insert=(Button)findViewById(R.id.Insert);
    Delete=(Button)findViewById(R.id.Delete);
    Update=(Button)findViewById(R.id.Update);
    View=(Button)findViewById(R.id.View);
    ViewAll=(Button)findViewById(R.id.ViewAll);

    Insert.setOnClickListener(this);
    Delete.setOnClickListener(this);
    Update.setOnClickListener(this);
    View.setOnClickListener(this);
    ViewAll.setOnClickListener(this);

    // Creating database and table
    db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
    db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name VARCHAR,marks
VARCHAR);");
  }
  public void onClick(View view)
  {
    // Inserting a record to the Student table
    if(view==Insert)
    {
      // Checking for empty fields
      if(Rollno.getText().toString().trim().length()==0||
           Name.getText().toString().trim().length()==0||
           Marks.getText().toString().trim().length()==0)
      {
        showMessage("Error", "Please enter all values");
        return;
      }
      db.execSQL("INSERT INTO student VALUES('"+Rollno.getText()+"','"+Name.getText()+
           "','"+Marks.getText()+"');");
      showMessage("Success", "Record added");
      clearText();
    }
    // Deleting a record from the Student table
    if(view==Delete)
```

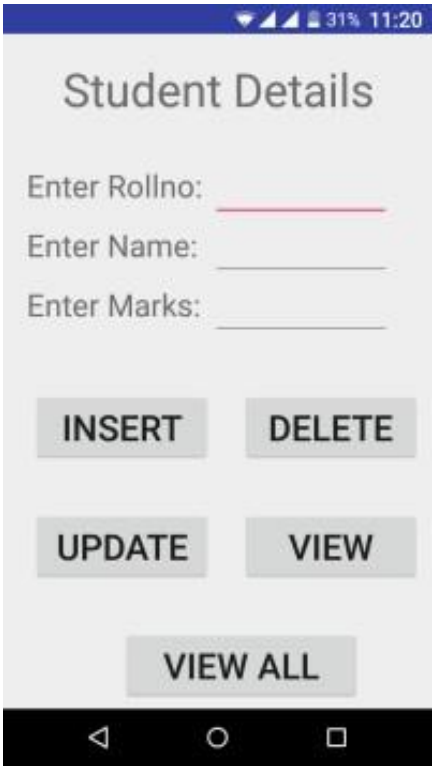
```
{
   // Checking for empty roll number
   if(Rollno.getText().toString().trim().length()==0)
   {
      showMessage("Error", "Please enter Rollno");
      return;
   }
   Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'", null);
   if(c.moveToFirst())
   {
      db.execSQL("DELETE FROM student WHERE rollno='"+Rollno.getText()+"'");
      showMessage("Success", "Record Deleted");
   }
   else
   {
      showMessage("Error", "Invalid Rollno");
   }
   clearText();
}
// Updating a record in the Student table
if(view==Update)
{
   // Checking for empty roll number
   if(Rollno.getText().toString().trim().length()==0)
   {
      showMessage("Error", "Please enter Rollno");
      return;
   }
   Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'", null);
   if(c.moveToFirst()) {
      db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" + Marks.getText() +
            "' WHERE rollno='"+Rollno.getText()+"'");
      showMessage("Success", "Record Modified");
   }
   else {
      showMessage("Error", "Invalid Rollno");
   }
   clearText();
}
// Display a record from the Student table
if(view==View)
{
```

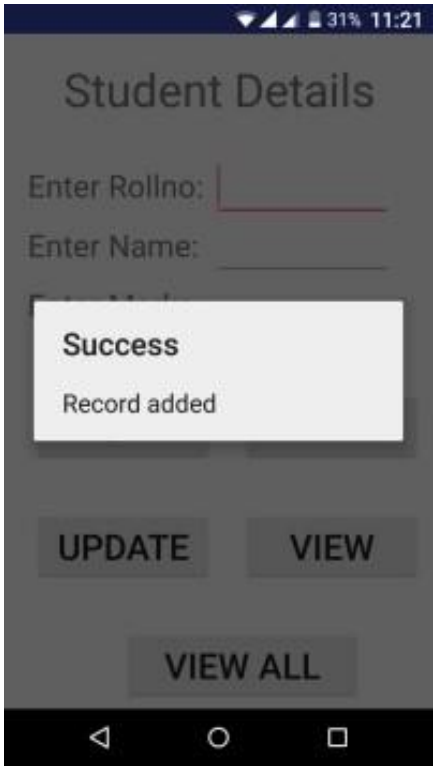
```
        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter Rollno");
            return;
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst())
        {
            Name.setText(c.getString(1));
            Marks.setText(c.getString(2));
        }
        else
        {
            showMessage("Error", "Invalid Rollno");
            clearText();
        }
    }
    // Displaying all the records
    if(view==ViewAll)
    {
        Cursor c=db.rawQuery("SELECT * FROM student", null);
        if(c.getCount()==0)
        {
            showMessage("Error", "No records found");
            return;
        }
        StringBuffer buffer=new StringBuffer();
        while(c.moveToNext())
        {
            buffer.append("Rollno: "+c.getString(0)+"\n");
            buffer.append("Name: "+c.getString(1)+"\n");
            buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details", buffer.toString());
    }
}
public void showMessage(String title,String message)
{
    Builder builder=new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
```

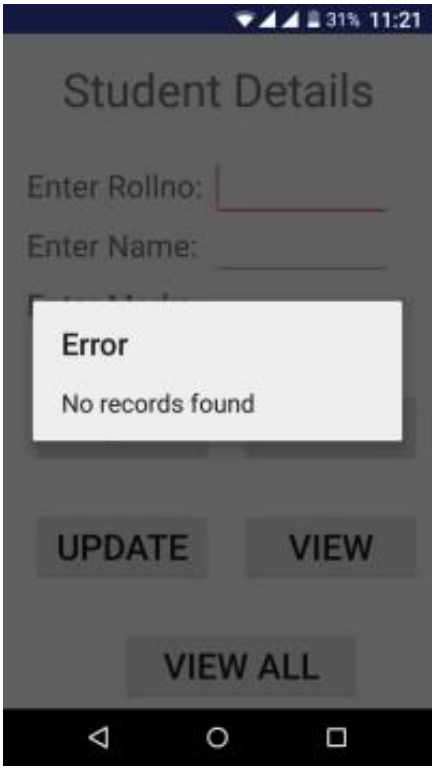
```
    builder.setMessage(message);
    builder.show();
  }
  public void clearText()
  {
    Rollno.setText("");
    Name.setText("");
    Marks.setText("");
    Rollno.requestFocus();
  }
}
```

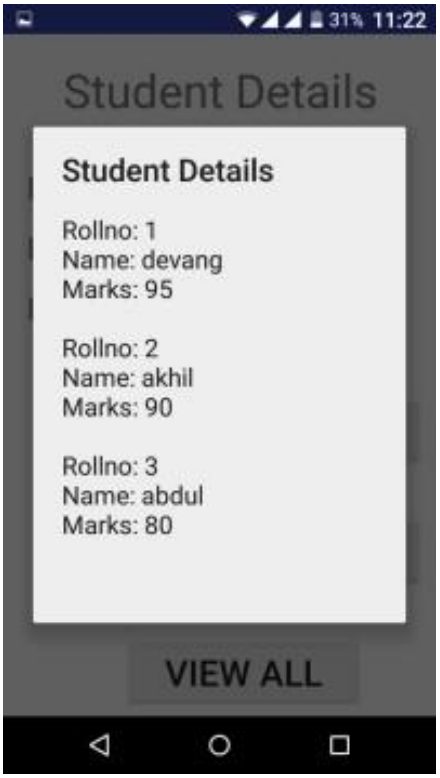
- So now the Coding part is also completed.
- Now run the application to see the output.

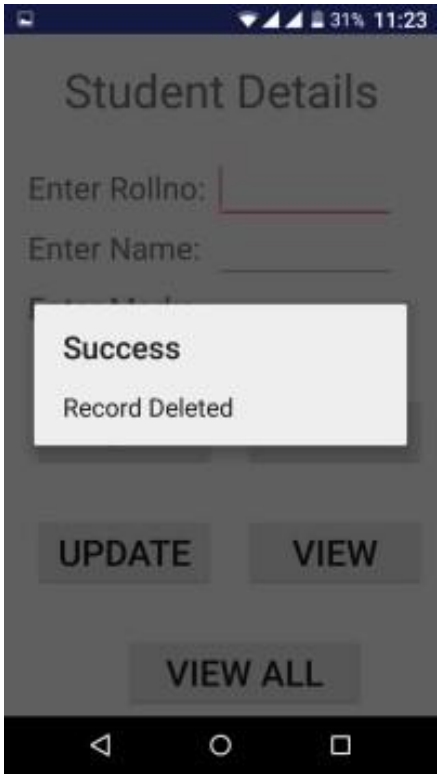
Output:

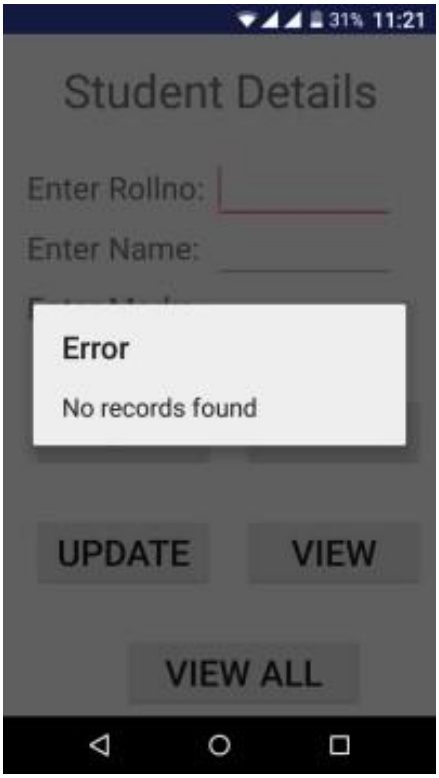




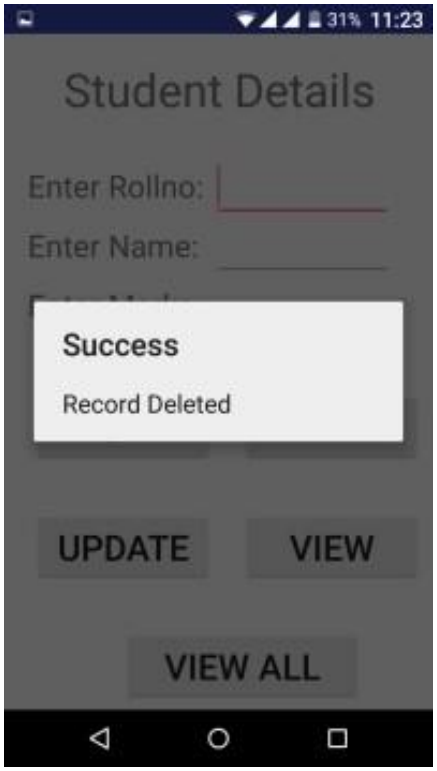



31% 11:22
Student Details
Student Details
Rollno: 1
Name: devang
Marks: 95
Rollno: 2
Name: akhil
Marks: 90
Rollno: 3
Name: abdul
Marks: 80
VIEW ALL

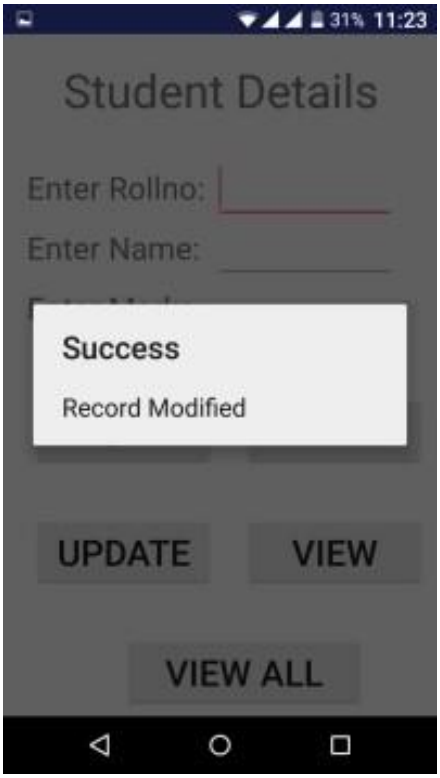

31% 11:23
Student Details
Enter Rollno:
Enter Name:
Success
Record Deleted
UPDATE
VIEW
VIEW ALL

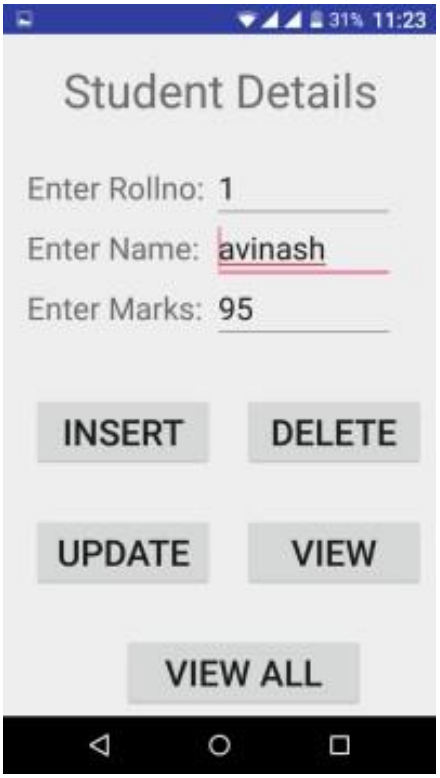

31% 11:21
Student Details
Enter Rollno:
Enter Name:
Error
No records found
UPDATE
VIEW
VIEW ALL


31% 11:22
Student Details
Student Details
Rollno: 1
Name: devang
Marks: 95
Rollno: 2
Name: akhil
Marks: 90
Rollno: 3
Name: abdul
Marks: 80
VIEW ALL


31% 11:23
Student Details
Enter Rollno:
Enter Name:
Success
Record Deleted
UPDATE
VIEW
VIEW ALL


31% 11:23
Student Details
Student Details
Rollno: 2
Name: akhil
Marks: 90
Rollno: 3
Name: abdul
Marks: 80
VIEW ALL





Result:

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

Ex. No. 03 **Develop a native application that uses GPS location information**
Date:

Aim:

To develop an Android Application that uses GPS location information.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno7"**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:

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

<Button
    android:id = "@+id/button"
    android:layout_width = "fill_parent"
    android:layout_height = "wrap_content"
    android:text = "getlocation"/>

</LinearLayout>
```

- Now click on Design and your application will look as given below.
- So now the designing part is completed.

Following will be the content of res/values/strings.xml to define two new constants –

```
<?xml version = "1.0" encoding = "utf-8"?>
<resources>
<string name = "app_name">Tutorialspoint</string>
</resources>
```

Adding permissions in Manifest for the Android Application:

- Click on **app -> manifests -> AndroidManifest.xml.**

Code for AndroidManifest.xml:

```
<?xml version = "1.0" encoding = "utf-8"?>
<manifest xmlns:android = "http://schemas.android.com/apk/res/android"
  package = "com.example.tutorialspoint7.myapplication">
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<uses-permission android:name = "android.permission.INTERNET" />
<application
    android:allowBackup = "true"
    android:icon = "@mipmap/ic_launcher"
    android:label = "@string/app_name"
    android:supportsRtl = "true"
    android:theme = "@style/AppTheme">

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

</manifest>
```

Java Coding for the Android Application:

- Click on **app -> java -> com.example.exno7 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

```
packagecom.example.exno7;

import android.Manifest;
import android.app.Activity;
import android.os.Bundle;
import android.support.v4.app.ActivityCompat;
import android.test.mock.MockPackageManager;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends Activity {

  Button btnShowLocation;
  private static final int REQUEST_CODE_PERMISSION = 2;
  String mPermission = Manifest.permission.ACCESS_FINE_LOCATION;

  // GPSTracker class
  GPSTracker gps;

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

    try {
      if (ActivityCompat.checkSelfPermission(this, mPermission)
        != MockPackageManager.PERMISSION_GRANTED) {

        ActivityCompat.requestPermissions(this, new String[]{mPermission},
          REQUEST_CODE_PERMISSION);

        // If any permission above not allowed by user, this condition will
          execute every time, else your else part will work
      }
    } catch (Exception e) {
      e.printStackTrace();
    }

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

```
    // show location button click event
    btnShowLocation.setOnClickListener(new View.OnClickListener() {

      @Override
      public void onClick(View argo) {
        // create class object
        gps = new GPSTracker(MainActivity.this);

        // check if GPS enabled
        if(gps.canGetLocation()){

          double latitude = gps.getLatitude();
          double longitude = gps.getLongitude();

          // \n is for new line
          Toast.makeText(getApplicationContext(), "Your Location is - \nLat: "
            + latitude + "\nLong: " + longitude, Toast.LENGTH_LONG).show();
        }else{
          // can't get location
          // GPS or Network is not enabled
          // Ask user to enable GPS/network in settings
          gps.showSettingsAlert();
        }

      }
    });
  }
}
```

- Following is the content of the modified main activity file **GPSTracker.java**.

Code for GPDTracker.Java

```
packagecom.example.exno7;
import android.app.AlertDialog;
import android.app.Service;
import android.content.Context;
import android.content.DialogInterface;
import android.content.Intent;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import   android.os.IBinder;
import android.provider.Settings;
```

```
import android.util.Log;
public class GPSTracker extends Service implements LocationListener {

  private final Context mContext;

  // flag for GPS status
  boolean isGPSEnabled = false;

  // flag for network status
  boolean isNetworkEnabled = false;

  // flag for GPS status
  boolean canGetLocation = false;

  Location location; // location
  double latitude; // latitude
  double longitude; // longitude

  // The minimum distance to change Updates in meters
  private static final long MIN_DISTANCE_CHANGE_FOR_UPDATES = 10; // 10 meters

  // The minimum time between updates in milliseconds
  private static final long MIN_TIME_BW_UPDATES = 1000 * 60 * 1; // 1 minute

  // Declaring a Location Manager
  protected LocationManager locationManager;

  public GPSTracker(Context context) {
    this.mContext = context;
    getLocation();
  }

  public Location getLocation() {
    try {
      locationManager = (LocationManager) mContext.getSystemService(LOCATION_SERVICE);

      // getting GPS status
      isGPSEnabled = locationManager.isProviderEnabled(LocationManager.GPS_PROVIDER);

      // getting network status
      isNetworkEnabled = locationManager
        .isProviderEnabled(LocationManager.NETWORK_PROVIDER);
```

```
if (!isGPSEnabled && !isNetworkEnabled) {
  // no network provider is enabled
} else {
  this.canGetLocation = true;
  // First get location from Network Provider
  if (isNetworkEnabled) {
    locationManager.requestLocationUpdates(
      LocationManager.NETWORK_PROVIDER,
      MIN_TIME_BW_UPDATES,
      MIN_DISTANCE_CHANGE_FOR_UPDATES, this);

    Log.d("Network", "Network");
    if (locationManager != null) {
      location = locationManager
        .getLastKnownLocation(LocationManager.NETWORK_PROVIDER);

      if (location != null) {
        latitude = location.getLatitude();
        longitude = location.getLongitude();
      }
    }
  }

  // if GPS Enabled get lat/long using GPS Services
  if (isGPSEnabled) {
    if (location == null) {
      locationManager.requestLocationUpdates(
        LocationManager.GPS_PROVIDER,
        MIN_TIME_BW_UPDATES,
        MIN_DISTANCE_CHANGE_FOR_UPDATES, this);

      Log.d("GPS Enabled", "GPS Enabled");
      if (locationManager != null) {
        location = locationManager
          .getLastKnownLocation(LocationManager.GPS_PROVIDER);

        if (location != null) {
          latitude = location.getLatitude();
          longitude = location.getLongitude();
        }
      }
```

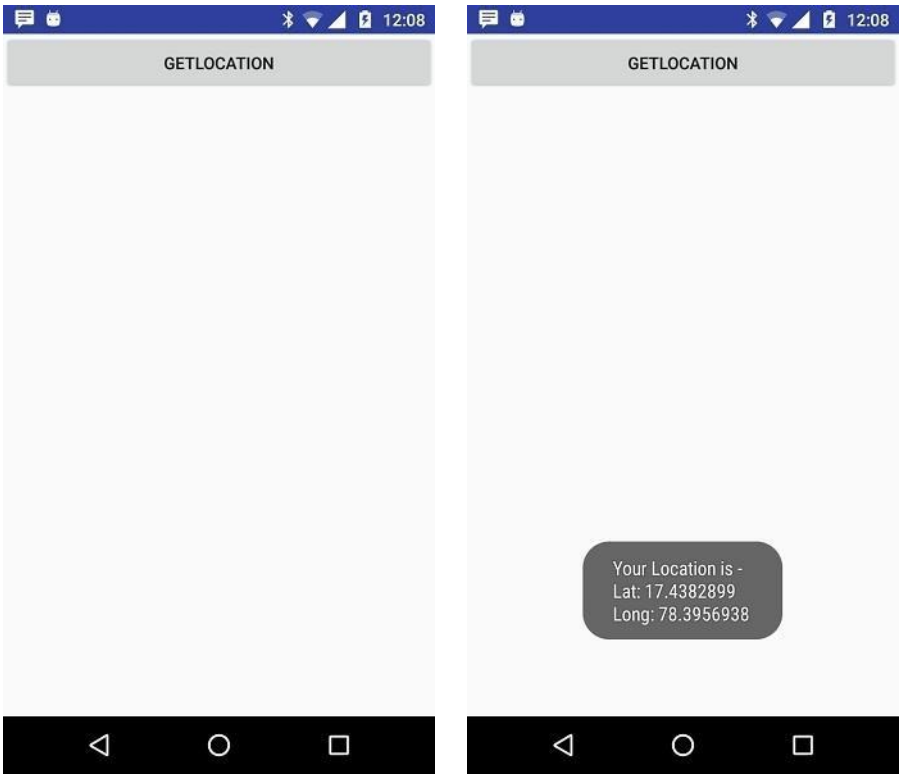
```
        }
      }
    }

  } catch (Exception e) {
    e.printStackTrace();
  }

  return location;
}

/**
  * Stop using GPS listener
  * Calling this function will stop using GPS in your app
* */

public void stopUsingGPS(){
  if(locationManager != null){
    locationManager.removeUpdates(GPSTracker.this);
  }
}

/**
  * Function to get latitude
* */

public double getLatitude(){
  if(location != null){
    latitude = location.getLatitude();
  }

  // return latitude
  return latitude;
}

/**
  * Function to get longitude
* */

public double getLongitude(){
  if(location != null){
    longitude = location.getLongitude();
```

```
    }

    // return longitude
    return longitude;
}

/**
    * Function to check GPS/wifi enabled
    * @return boolean
* */

public boolean canGetLocation() {
    return this.canGetLocation;
}

/**
    * Function to show settings alert dialog
    * On pressing Settings button will lauch Settings Options
* */

public void showSettingsAlert(){
    AlertDialog.Builder alertDialog = new AlertDialog.Builder(mContext);

    // Setting Dialog Title
    alertDialog.setTitle("GPS is settings");

    // Setting Dialog Message
    alertDialog.setMessage("GPS is not enabled. Do you want to go to settings menu?");

    // On pressing Settings button
    alertDialog.setPositiveButton("Settings", new DialogInterface.OnClickListener() {
        public void onClick(DialogInterface dialog,int which) {
            Intent intent = new Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
            mContext.startActivity(intent);
        }
    });

    // on pressing cancel button
    alertDialog.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
        public void onClick(DialogInterface dialog, int which) {
            dialog.cancel();
        }
```

```
    });

    // Showing Alert Message
    alertDialog.show();
  }

  @Override
  public void onLocationChanged(Location location) {
  }

  @Override
  public void onProviderDisabled(String provider) {
  }

  @Override
  public void onProviderEnabled(String provider) {
  }

  @Override
  public void onStatusChanged(String provider, int status, Bundle extras) {
  }

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

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

Output:



Result:

Thus Android Application that implements GPS Location Information is developed and executed successfully.

Ex. No. 04 **Implement an application that creates an alert upon receiving a message**
Date:

Aim:

To develop an Android Application that creates an alert upon receiving a message.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"ex.no9"**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.

Creating Second Activity for the Android Application:

- Click on **File -> New -> Activity -> Empty Activity**.
- Type the Activity Name as SecondActivity and click Finish button.
- Thus Second Activity For the application is created.

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:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:layout_margin="10dp"
  android:orientation="vertical">

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Message"
    android:textSize="30sp" />
```

```
<EditText
    android:id="@+id/editText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:singleLine="true"
    android:textSize="30sp" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:layout_gravity="center"
    android:text="Notify"
    android:textSize="30sp"/>

</LinearLayout>
```

- 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.exno9 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

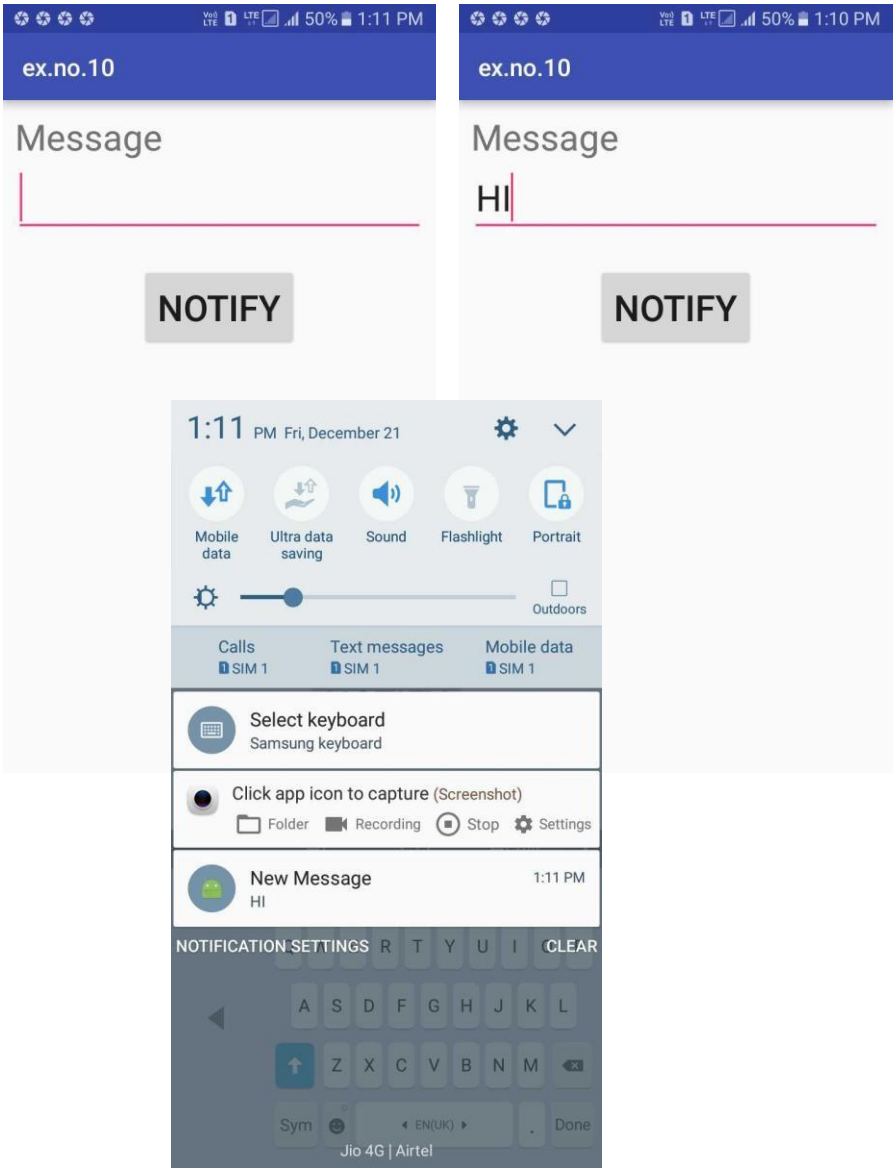
Code for MainActivity.java:

```
packagecom.example.exno9;

import android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity
{
```

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

    notify= (Button) findViewById(R.id.button);
    e= (EditText) findViewById(R.id.editText);

    notify.setOnClickListener(new View.OnClickListener()
    {
      @Override
      public void onClick(View v)
      {
        Intent intent = new Intent(MainActivity.this, SecondActivity.class);
        PendingIntent pending = PendingIntent.getActivity(MainActivity.this, 0, intent, 0);
        Notification noti = new Notification.Builder(MainActivity.this).setContentTitle("New
Message").setContentText(e.getText().toString()).setSmallIcon(R.mipmap.ic_launcher).setContentIntent(pe
nding).build();
        NotificationManager manager = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
        noti.flags |= Notification.FLAG_AUTO_CANCEL;
        manager.notify(0, noti);
      }
    });
  }
}
```

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

Output:



Result:

Thus Android Application that creates an alert upon receiving a message is developed and executed successfully.

Ex. No. 05 **Write a mobile application that makes use of RSS Feed**
Date:

Aim:

To develop an Android Application that makes use of RSS Feed.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno10"**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:

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

<ListView
    android:id="@+id/listView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content" />

</LinearLayout>
```

- Now click on Design and your application will look as given below.
- So now the designing part is completed.

Adding permissions in Manifest for the Android Application:

- Click on **app -> manifests -> AndroidManifest.xml.**

- Now include the INTERNET permissions in the AndroidManifest.xml file as shown below.

Code for AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.exno10" >
<uses-permission android:name="android.permission.INTERNET"/>

<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:supportsRtl="true"
    android:theme="@style/AppTheme" >
<activity android:name=".MainActivity" >
<intent-filter>
<action android:name="android.intent.action.MAIN" />

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

</manifest>
```

- So now the Permissions are added in the Manifest.

Java Coding for the Android Application:

- Click on app -> java -> com.example.exno10 -> MainActivity.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

```
package com.example.exno10;

import android.app.ListActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.AsyncTask;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.ListView;
```

```
import org.xmlpull.v1.XmlPullParser;
import org.xmlpull.v1.XmlPullParserException;
import org.xmlpull.v1.XmlPullParserFactory;
import java.io.IOException;
import java.io.InputStream;
import java.net.MalformedURLException;
import java.net.URL;
import java.util.ArrayList;
import java.util.List;

public class MainActivity extends ListActivity
{
  List headlines;
  List links;
  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    new MyAsyncTask().execute();
  }
  class MyAsyncTask extends AsyncTask<Object,Void,ArrayAdapter>
  {
    @Override
    protected ArrayAdapter doInBackground(Object[] params)
    {
      headlines = new ArrayList();
      links = new ArrayList();
      try
      {
        URL url = new URL("https://codingconnect.net/feed");
        XmlPullParserFactory factory = XmlPullParserFactory.newInstance();
        factory.setNamespaceAware(false);
        XmlPullParser xpp = factory.newPullParser();

        // We will get the XML from an input stream
        xpp.setInput(getInputStream(url), "UTF_8");
        boolean insideItem = false;
```

```
  // Returns the type of current event: START_TAG, END_TAG, etc..
  int eventType = xpp.getEventType();
  while (eventType != XmlPullParser.END_DOCUMENT)
  {
    if (eventType == XmlPullParser.START_TAG)
    {
      if (xpp.getName().equalsIgnoreCase("item"))
      {
        insideItem = true;
      }
      else if (xpp.getName().equalsIgnoreCase("title"))
      {
        if (insideItem)
          headlines.add(xpp.nextText()); //extract the headline
      }
      else if (xpp.getName().equalsIgnoreCase("link"))
      {
        if (insideItem)
          links.add(xpp.nextText()); //extract the link of article
      }
    }
    else if(eventType==XmlPullParser.END_TAG && xpp.getName().equalsIgnoreCase("item"))
    {
      insideItem=false;
    }
    eventType = xpp.next(); //move to next element
  }

}
catch (MalformedURLException e)
{
  e.printStackTrace();
}
catch (XmlPullParserException e)
{
  e.printStackTrace();
}
catch (IOException e)
{
```

```
            e.printStackTrace();
          }
          return null;
        }
        protected void onPostExecute(ArrayAdapter adapter)
        {
          adapter = new ArrayAdapter(MainActivity.this, android.R.layout.simple_list_item_1, headlines);
          setListAdapter(adapter);
        }
      }
      @Override
      protected void onListItemClick(ListView l, View v, int position, long id)
      {
        Uri uri = Uri.parse((links.get(position)).toString());
        Intent intent = new Intent(Intent.ACTION_VIEW, uri);
        startActivity(intent);
      }
      public InputStream getInputStream(URL url)
      {
        try
        {
          return url.openConnection().getInputStream();
        }
        catch (IOException e)
        {
          return null;
        }
      }
}
```

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

Output:

Result:

Thus Android Application that makes use of RSS Feed is developed and executed successfully

Ex. No. o6 Date:	Android Application that creates Alarm Clock Using sensor manager

Aim:

To develop a Android Application that creates Alarm Clock using sensor manager.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno13"** and click Next.
- Then **select the Minimum SDK** as shown below and click Next.
- Then **select theEmpty 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.

Creating Second Activity for the Android Application:

- Click on **File -> New -> Activity -> Empty Activity**.
- Type the **Activity Name as AlarmReceiver** and click **Finish** button.
- Thus **Second Activity**for the application is created.

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:

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

<TimePicker
    android:id="@+id/timePicker"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center" />

<ToggleButton
    android:id="@+id/toggleButton"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="20dp"
    android:checked="false"
    android:onClick="OnToggleClicked" />

</LinearLayout>
```

- Now click on Design and your application will look as given below.
- So now the designing part is completed.

Changes in Manifest for the Android Application:

- Click on **app -> manifests -> AndroidManifest.xml.**
- Now change the activity tag to receiver tag in the AndroidManifest.xml file as shown below.

Code for AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.exno13" >

<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:supportsRtl="true"
    android:theme="@style/AppTheme" >
<activity android:name=".MainActivity" >
<intent-filter>
<action android:name="android.intent.action.MAIN" />

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

</manifest>
```

- So now the changes are done in the Manifest.

Java Coding for the Android Application:

Java Coding for Main Activity:

- Click on **app -> java -> com.example.exno13 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

```
packagecom.example.exno13;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import java.util.Calendar;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{
  TimePicker  alarmTimePicker;
  PendingIntent  pendingIntent;
  AlarmManager alarmManager;

  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    alarmTimePicker = (TimePicker) findViewById(R.id.timePicker);
    alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
  }
  public void OnToggleClicked(View view)
  {
    long time;
    if (((ToggleButton) view).isChecked())
    {
      Toast.makeText(MainActivity.this, "ALARM ON", Toast.LENGTH_SHORT).show();
      Calendar calendar = Calendar.getInstance();
      calendar.set(Calendar.HOUR_OF_DAY, alarmTimePicker.getCurrentHour());
```

```
        calendar.set(Calendar.MINUTE, alarmTimePicker.getCurrentMinute());
        Intent intent = new Intent(this, AlarmReceiver.class);
        pendingIntent = PendingIntent.getBroadcast(this, 0, intent, 0);

        time=(calendar.getTimeInMillis()-(calendar.getTimeInMillis()%60000));
        if(System.currentTimeMillis()>time)
        {
          if (calendar.AM_PM == 0)
            time = time + (1000*60*60*12);
          else
            time = time + (1000*60*60*24);
        }
        alarmManager.setRepeating(AlarmManager.RTC_WAKEUP, time, 10000, pendingIntent);
      }
      else
      {
        alarmManager.cancel(pendingIntent);
        Toast.makeText(MainActivity.this, "ALARM OFF", Toast.LENGTH_SHORT).show();
      }
    }
```

Java Coding for Alarm Receiver:

- Click on **app -> java -> com.example.exno13 -> AlarmReceiver**.
- Then delete the code which is there and type the code as given below.

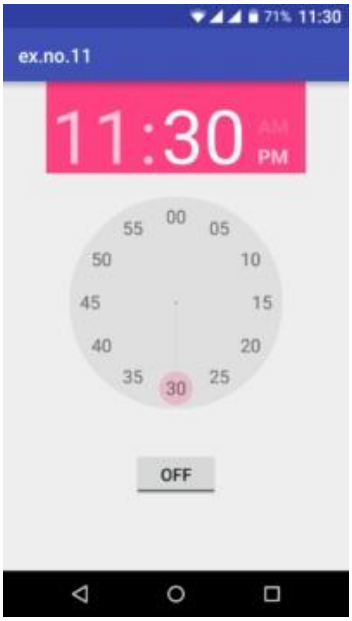
Code for AlarmReceiver.java:

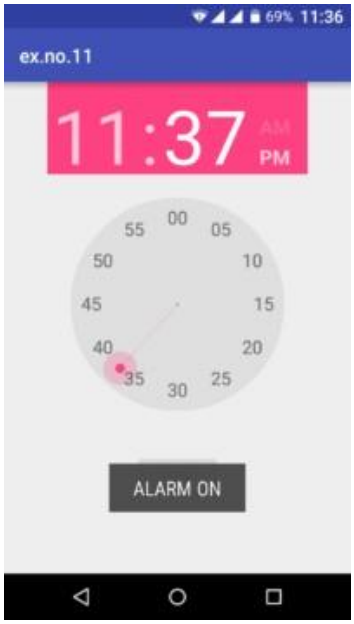
```
packagecom.example.exno13;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.widget.Toast;

public class AlarmReceiver extends BroadcastReceiver
{
  @Override
  public void onReceive(Context context, Intent intent)
  {
    Toast.makeText(context, "Alarm! Wake up! Wake up!", Toast.LENGTH_LONG).show();
    Uri alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);
```

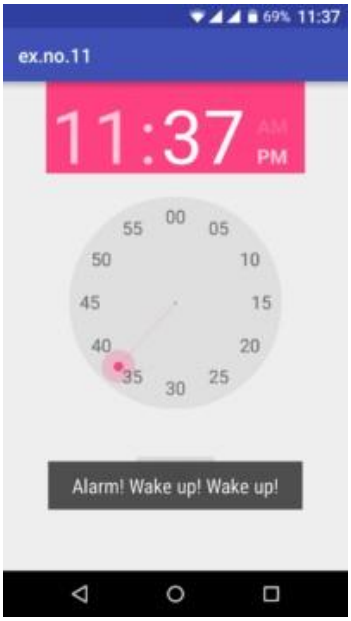
```
    if (alarmUri == null)
    {
       alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION);
    }
    Ringtone ringtone = RingtoneManager.getRingtone(context, alarmUri);
    ringtone.play();
  }
}
```

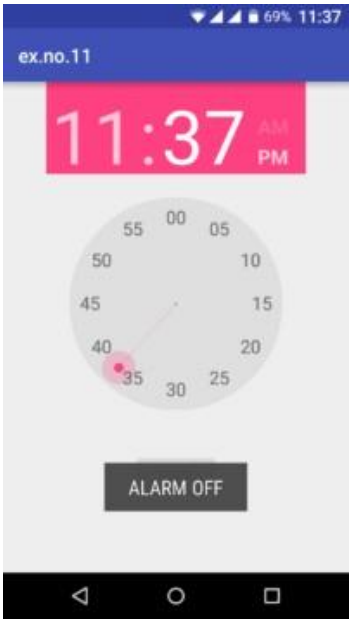
- So now the Coding part of Alarm Receiver is also completed.
- Now run the application to see the output.

Output:









Result:

Thus Android Application that creates Alarm Clock iusing sensor manager s developed and executed successfully.

Ex. No. 07 Date:	Develop an application that makes use of Notification Manager user input to voice

Aim:

To develop an Android Application that makes use of Notification Manager input to voice

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno5"**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:

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

  <Button
    android:id="@+id/btnSimpleNotification"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Simple Notification" />

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

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Notification With Icon" />

  <Button
    android:id="@+id/btnNotificationImage"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Notification With Image" />

  <Button
    android:id="@+id/btnNotificationWithGroupConvo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Notification With Group Conversation" />

  <Button
    android:id="@+id/btnNotificationSemantic"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Notification Semantic Action" />

</LinearLayout>
```

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:

```
packagecom.example.exno5;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.net.Uri;
import  androidx.core.app.NotificationCompat;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.Person;
import androidx.core.graphics.drawable.IconCompat;
import android.os.Bundle;
```

```
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import java.util.Date;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {

  NotificationManager notificationManager;
  NotificationCompat.Builder builder;
  NotificationChannel channel;

  CharSequence charSequence = "";

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

    Button btnSimpleNotification = findViewById(R.id.btnSimpleNotification);
    Button btnNotificationIcon = findViewById(R.id.btnNotificationIcon);
    Button btnNotificationImage = findViewById(R.id.btnNotificationImage);
    Button btnNotificationWithGroupConvo = findViewById(R.id.btnNotificationWithGroupConvo);
    Button btnNotificationSemantic = findViewById(R.id.btnNotificationSemantic);

    charSequence = btnNotificationIcon.getText();

    btnSimpleNotification.setOnClickListener(this);
    btnNotificationIcon.setOnClickListener(this);
    btnNotificationImage.setOnClickListener(this);
    btnNotificationWithGroupConvo.setOnClickListener(this);
    btnNotificationSemantic.setOnClickListener(this);

    notificationManager = (NotificationManager) getSystemService(Context.NOTIFICATION_SERVICE);
    CharSequence name = "My Notification";
    String description = "yadda yadda";
    int importance = NotificationManager.IMPORTANCE_DEFAULT;

    channel = new NotificationChannel("1", name, importance);
    channel.setDescription(description);

    builder = new NotificationCompat.Builder(MainActivity.this, channel.getId())
            .setSmallIcon(R.mipmap.ic_launcher);
```

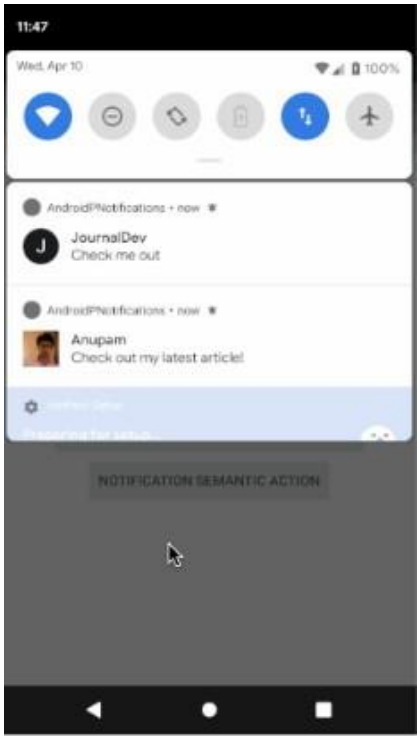
```
    notificationManager.createNotificationChannel(channel);

}

@Override
public void onClick(View v) {

    switch (v.getId()) {
        case R.id.btnSimpleNotification:
            simpleNotification();
            break;
        case R.id.btnNotificationIcon:
            notificationWithIcon();
            break;
        case R.id.btnNotificationImage:
            notificationWithImage();
            break;

        case R.id.btnNotificationWithGroupConvo:
            notificationWithGroupConvo();
            break;

        case R.id.btnNotificationSemantic:
            notificationSemantic();
            break;
    }
}
private void simpleNotification() {
    Person jd = new Person.Builder().setName("JournalDev ") .setImportant(true) .build();

    new NotificationCompat.MessagingStyle(jd)
            .addMessage("Check me out", new Date().getTime(), jd) .setBuilder(builder);

    notificationManager.notify(1, builder.build());
}
private void notificationWithIcon() {
    Person anupam = new Person.Builder()
            .setName("Anupam")
            .setIcon(IconCompat.createWithResource(this, R.drawable.index))
            .setImportant(true) .build();
    new NotificationCompat.MessagingStyle(anupam)
            .addMessage("Check out my latest article!", new Date().getTime(), anupam)
```

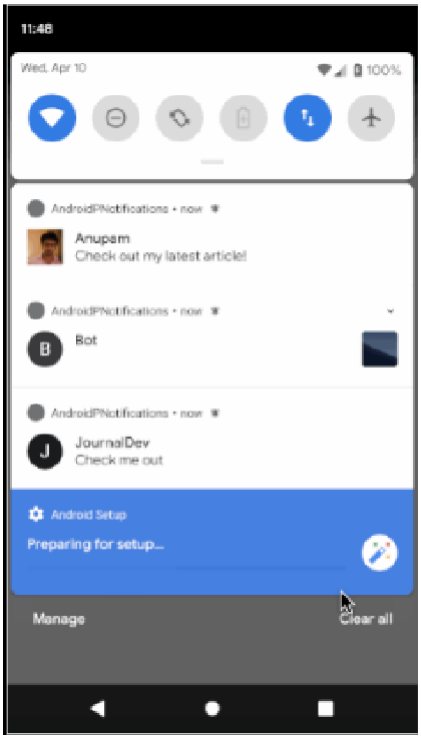
```
        .setBuilder(builder);
    notificationManager.notify(2, builder.build());
}
private void notificationWithImage() {
    Person bot = new Person.Builder()
        .setName("Bot") .setImportant(true)
        .setBot(true) .build();

    Uri uri = Uri.parse("android.resource://com.journaldev.androidpnotifications/drawable/"+R.drawable.bg);

    NotificationCompat.MessagingStyle.Message message = new
    NotificationCompat.MessagingStyle.Message("Check out my latest article!", new Date().getTime(), bot);
    message.setData("image/*",uri);

    new NotificationCompat.MessagingStyle(bot)
        .addMessage(message) .setGroupConversation(true).setBuilder(builder);

    notificationManager.notify(3, builder.build());
}
private void notificationWithGroupConvo()
{
    Person jd = new Person.Builder()
        .setName("JournalDev") .build();

    Person anupam = new Person.Builder()
        .setName("Anupam")
        .setIcon(IconCompat.createWithResource(this, R.drawable.samindexple_photo))
        .setImportant(true).build();

    Person bot = new Person.Builder()
        .setName("Bot").setBot(true) .build();

    Uri uri = Uri.parse("android.resource://com.journaldev.androidpnotifications/drawable/"+R.drawable.bg);

    NotificationCompat.MessagingStyle.Message message = new
    NotificationCompat.MessagingStyle.Message("", new Date().getTime(), bot);
    message.setData("image/*",uri);
    new NotificationCompat.MessagingStyle(bot)
        .addMessage("Hi. How are you?", new Date().getTime(), anupam)
        .addMessage(message)
        .addMessage("Does this image look good?", new Date().getTime(), bot)
        .addMessage("Looks good!", new Date().getTime(), jd)
```

```
        .setGroupConversation(true)
        .setConversationTitle("Sample Conversation")
        .setBuilder(builder);

    notificationManager.notify(4, builder.build());

}
private void notificationSemantic()
{
    Person jd = new Person.Builder()
        .setName("JournalDev")
        .build();

    Person anupam = new Person.Builder()
        .setName("Anupam")
        .setIcon(IconCompat.createWithResource(this, R.drawable.index))
        .setImportant(true)
        .build();

    Person bot = new Person.Builder()
        .setName("Bot")
        .setBot(true)
        .build();

    Uri uri = Uri.parse("android.resource://com.journaldev.androidpnotifications/drawable/"+R.drawable.bg);

    Intent intent = new Intent(this, MainActivity.class);
    intent.putExtra("hi","Notifications were read");
    PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, intent, 0);

    NotificationCompat.MessagingStyle.Message message = new
    NotificationCompat.MessagingStyle.Message("", new Date().getTime(), bot);
    message.setData("image/*",uri);

    NotificationCompat.Action replyAction =
        new NotificationCompat.Action.Builder(
            R.drawable.bg, "MARK READ", pendingIntent)
            .setSemanticAction(NotificationCompat.Action.SEMANTIC_ACTION_MARK_AS_READ)
            .build();
    NotificationCompat.Builder separateBuilder = builder;
    separateBuilder.addAction(replyAction);
```

```
    new NotificationCompat.MessagingStyle(bot)
        .addMessage("Hi. How are you?", new Date().getTime(), anupam)
        .addMessage(message)
        .addMessage("Does this image look good?", new Date().getTime(), bot)
        .addMessage("Looks good!", new Date().getTime(), jd)
        .setGroupConversation(true)
        .setConversationTitle("Sample Conversation")
        .setBuilder(separateBuilder);

    notificationManager.notify(5, separateBuilder.build());
  }
  @Override
  protected void onResume() {
    super.onResume();

    if(getIntent()!=null && getIntent().getExtras()!=null)
    {
      String value = getIntent().getStringExtra("hi");
      Toast.makeText(getApplicationContext(),value,Toast.LENGTH_LONG).show();
    }
  }
}
```

Output:





Result:

Thus Android Application that makes use of notification manager is developed and executed successfully.

Ex. No. 8 **Develop a Mobile application for simple needs (Mini Project)**
Date:

Aim:

To develop a Simple Android Application for Native Calculator.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno12"**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:

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

<LinearLayout
    android:id="@+id/linearLayout1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp">

<EditText
      android:id="@+id/editText1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
```

```
        android:layout_weight="1"
        android:inputType="numberDecimal"
        android:textSize="20sp" />

<EditText
        android:id="@+id/editText2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:inputType="numberDecimal"
        android:textSize="20sp" />

</LinearLayout>

<LinearLayout
    android:id="@+id/linearLayout2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp">

<Button
        android:id="@+id/Add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="+"
        android:textSize="30sp"/>

<Button
        android:id="@+id/Sub"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="-"
        android:textSize="30sp"/>

<Button
        android:id="@+id/Mul"
        android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="*"
        android:textSize="30sp"/>

<Button
        android:id="@+id/Div"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="/"
        android:textSize="30sp"/>

</LinearLayout>

<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50dp"
    android:text="Answer is"
    android:textSize="30sp"
    android:gravity="center"/>

</LinearLayout>
```

- 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.exno12 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

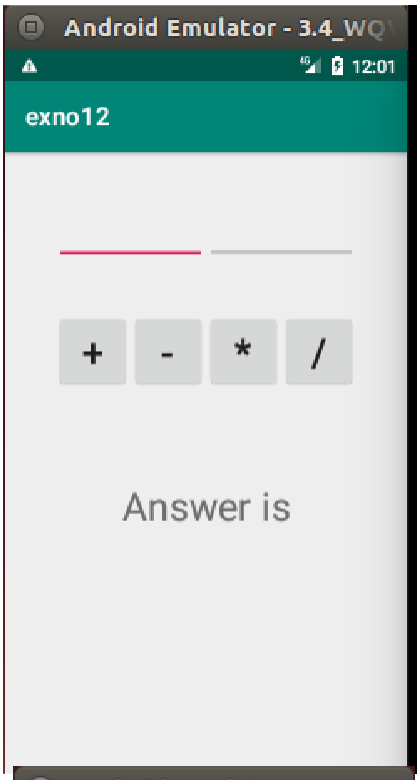
```
packagecom.example.exno12;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
```

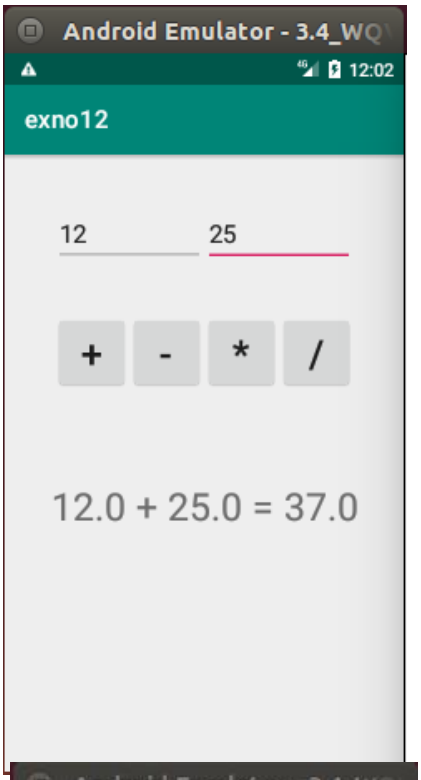
```
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity implements OnClickListener
{
  //Defining the Views
  EditText Num1;
  EditText Num2;
  Button Add;
  Button Sub;
  Button Mul;
  Button Div;
  TextView Result;

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

    //Referring the Views
    Num1 = (EditText) findViewById(R.id.editText1);
    Num2 = (EditText) findViewById(R.id.editText2);
    Add = (Button) findViewById(R.id.Add);
    Sub = (Button) findViewById(R.id.Sub);
    Mul = (Button) findViewById(R.id.Mul);
    Div = (Button) findViewById(R.id.Div);
    Result = (TextView) findViewById(R.id.textView);

    // set a listener
    Add.setOnClickListener(this);
    Sub.setOnClickListener(this);
    Mul.setOnClickListener(this);
    Div.setOnClickListener(this);
  }
  @Override
  public void onClick (View v)
  {
```

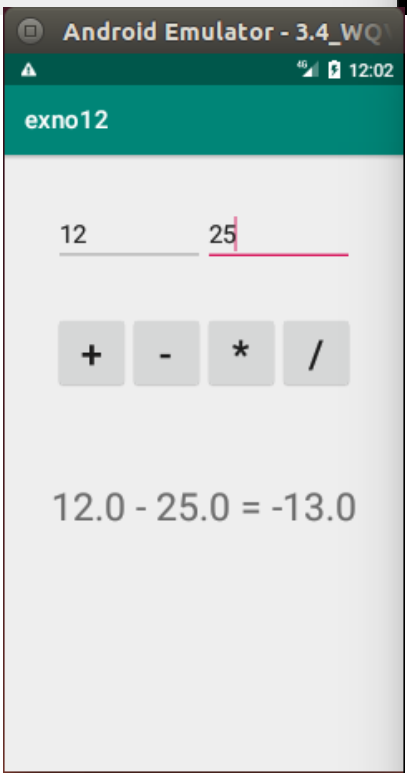
```
    float num1 = 0;
    float num2 = 0;
    float result = 0;
    String oper = "";
    // check if the fields are empty
    if (TextUtils.isEmpty(Num1.getText().toString()) || TextUtils.isEmpty(Num2.getText().toString()))
        return;

    // read EditText and fill variables with numbers
    num1 = Float.parseFloat(Num1.getText().toString());
    num2 = Float.parseFloat(Num2.getText().toString());

    // defines the button that has been clicked and performs the corresponding operation
    // write operation into oper, we will use it later for output
    switch (v.getId())
    {
      case R.id.Add:
        oper = "+";
        result = num1 + num2;
        break;
      case R.id.Sub:
        oper = "-";
        result = num1 - num2;
        break;
      case R.id.Mul:
        oper = "*";
        result = num1 * num2;
        break;
      case R.id.Div:
        oper = "/";
        result = num1 / num2;
        break;
      default:
        break;
    }
    // form the output line
    Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
  }
}
```

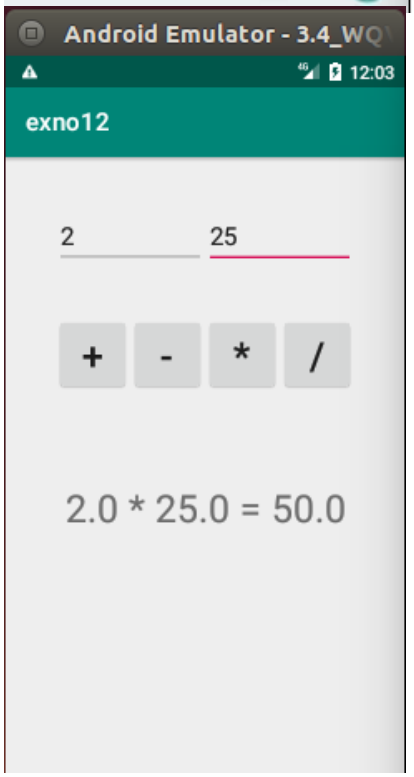
- So now the Coding part is also completed.
- Now run the application to see the output.

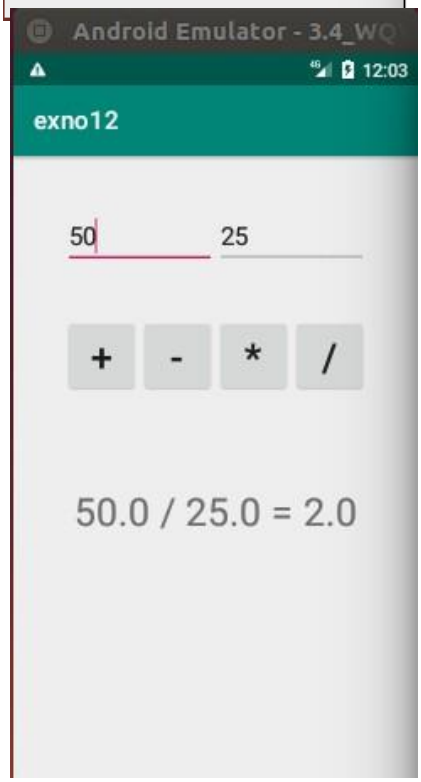
Output:











Result:

Thus a Simple Android Application for Native Calculator is developed and executed successfully.