Ex.No: 06

DEVELOP AN APPLICATION THAT USES RSS FEED

Aim:

To develop an application that uses RSS feed.

Procedure:

- Open Android Studio and then click on File -> New -> New project
- Then type the Application name as “My Application” 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.
- Click on app -> res -> layout -> activity_main.xml
- Now click on Text as shown below. Delete the code which is there and type the code as given below.
- Click on app -> manifests -> AndroidManifest.xml
- Now include the INTERNET permissions in the AndroidManifest.xml file
- Click on app -> java -> com.example.myapplication -> MainActivity.
- Delete the code which is there and type the code as given below.
- Now run the application to see the output

Code:

MainActivity.java

```
package com.example.myapplication;
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();
            xpp.setInput(getInputStream(url), "UTF_8");
            boolean insideItem = false;
            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;
        }
    }
}
```

Activity_main.xml:

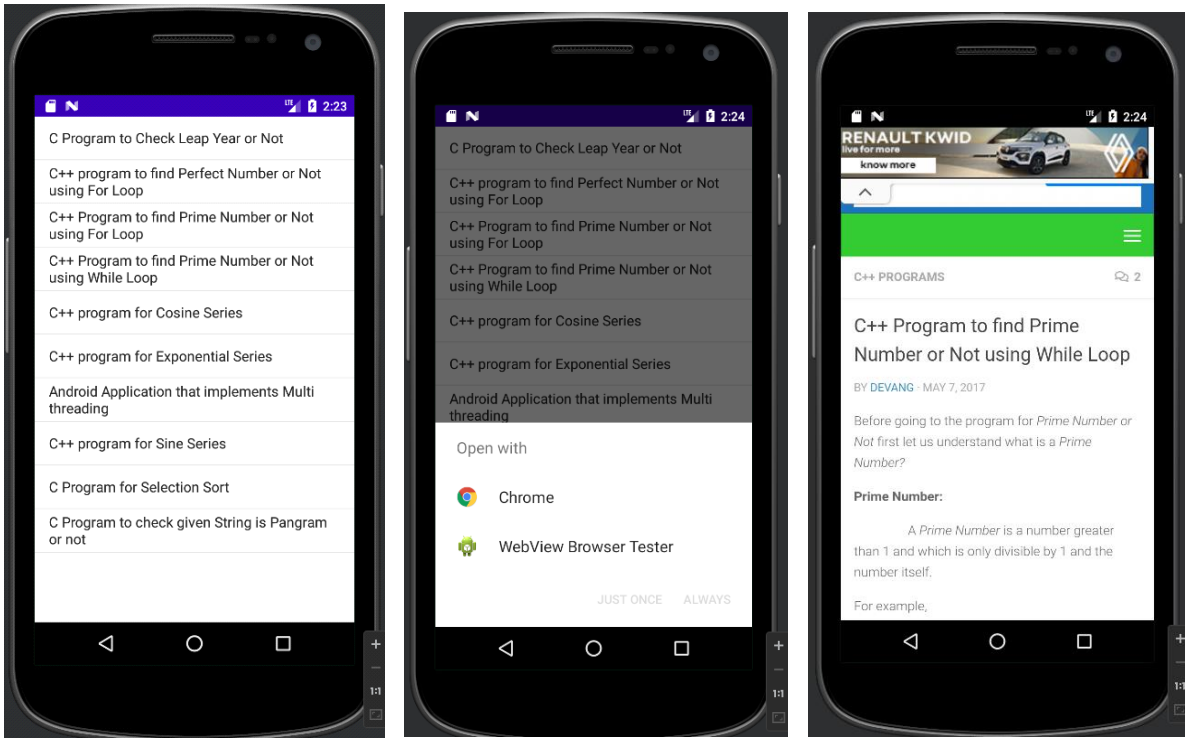
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical" >

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

AndroidManifest.xml

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

```
    <application>
        <activity
            android:name=".MainActivity"
            android:exported="true"
            android:theme="@style/Theme.MyApplication">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

Output:



Result:

Thus, an application that uses RSS feed has been implemented successfully.

Ex. No: 07

DEVELOP AN APPLICATION THAT IMPLEMENTS MULTI THREADING

Aim:

To develop an application that implements multithreading.

Procedure:

- Open Android Studio and then click on **File -> New -> New project.**
- Then type the Application name as “My Application” 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
- 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.
- Click on app -> java -> com.example.exno7 -> MainActivity.
- Then delete the code which is there and type the code as given below.
- Before Running the Application, Copy the Images given below and Paste it in “app -> res -> drawable” by pressing “right click mouse button on drawable” and selecting the “Paste” option.
- Now run the application to see the output.

Code:

MainActivity.java

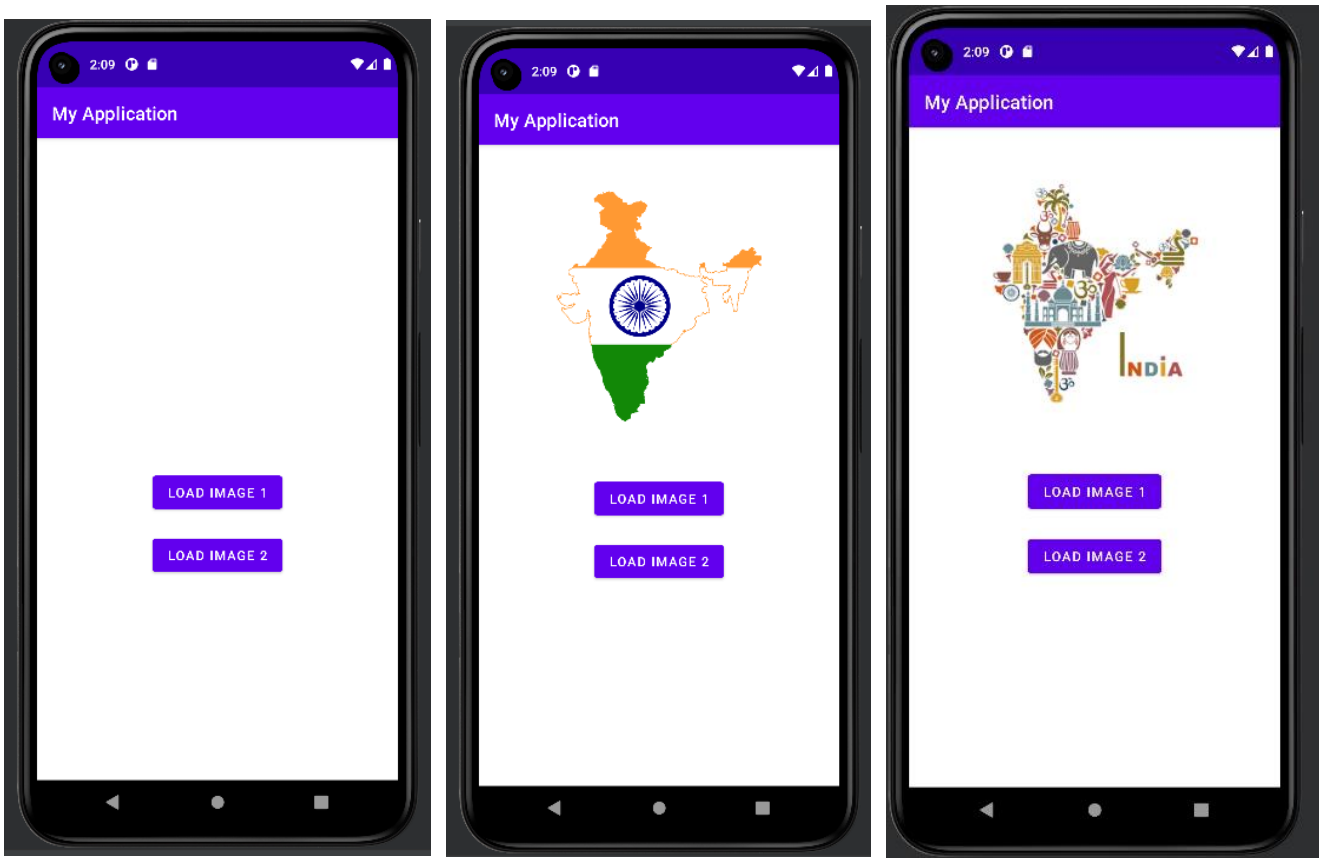
```
package com.example.myapplication;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity
{
   ImageView img;
   Button bt1,bt2;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      bt1 = (Button)findViewById(R.id.button);
      bt2= (Button) findViewById(R.id.button2);
      img = (ImageView)findViewById(R.id.imageView);
```

```
        bt1.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                new Thread(new Runnable()
                {
                    @Override
                    public void run()
                    {
                        img.post(new Runnable()
                        {
                            @Override
                            public void run()
                            {
                                img.setImageResource(R.drawable.india1);
                            }
                        });
                    }
                }).start();
            }
        });
        bt2.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                new Thread(new Runnable()
                {
                    @Override
                    public void run()
                    {
                        img.post(new Runnable()
                        {
                            @Override
                            public void run()
                            {
                                img.setImageResource(R.drawable.india2);
                            }
                        });
                    }
                }).start();
            }
        });
    }
}
```

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" >
   <ImageView
      android:id="@+id/imageView"
      android:layout_width="250dp"
      android:layout_height="250dp"
      android:layout_margin="50dp"
      android:layout_gravity="center" />
   <Button
      android:id="@+id/button"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_margin="10dp"
      android:layout_gravity="center"
      android:text="Load Image 1" />
   <Button
      android:id="@+id/button2"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_margin="10dp"
      android:layout_gravity="center"
      android:text="Load image 2" />
</LinearLayout>
```

Output:



Result:

Thus, an application that implements multithreading has been implemented successfully.

Ex.No: 08

DEVELOP A NATIVE APPLICATION THAT USES GPS LOCATION INFORMATION

Aim:

To develop a native application that uses GPS location information.

Procedure:

- Open Android Studio and then click on File -> New -> New project
- Then type the Application name as “My Application” 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.
- Click on app -> res -> layout -> activity_main.xml
- Now click on Text as shown below. Delete the code which is there and type the code as given below.
- Click on app -> manifests -> AndroidManifest.xml
- Now include the INTERNET permissions in the AndroidManifest.xml file
- Click on app -> java -> com.example.myapplication -> MainActivity.
- Delete the code which is there and type the code as given below.
- Now run the application to see the output

Code:

Main_Activity.java

```
package com.example.myapplication;

import android.app.Activity;

import android.content.Context;

import android.location.Location;

import android.location.LocationListener;

import android.location.LocationManager;

import android.os.Bundle;

import android.view.View;

import android.view.View.OnClickListener;

import android.widget.Button;

import android.widget.Toast;

public class LbsGeocodingActivity extends Activity {

   private static final long MINIMUM_DISTANCE_CHANGE_FOR_UPDATES = 1; // in Meters
```

```
private static final long MINIMUM_TIME_BETWEEN_UPDATES = 1000; // in Milliseconds
protected LocationManager locationManager;
protected Button retrieveLocationButton;
@Override
public void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout.main);
   retrieveLocationButton = (Button) findViewById(R.id.retrieve_location_button);
   locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);
   locationManager.requestLocationUpdates(
         LocationManager.GPS_PROVIDER,
         MINIMUM_TIME_BETWEEN_UPDATES,
         MINIMUM_DISTANCE_CHANGE_FOR_UPDATES,
         new MyLocationListener()
   );
retrieveLocationButton.setOnClickListener(new OnClickListener() {
      @Override
      public void onClick(View v) {
         showCurrentLocation();
      }
});
}
protected void showCurrentLocation() {
   Location location = locationManager.getLastKnownLocation(LocationManager.GPS_PROVIDER);
   if (location != null) {
      String message = String.format(
            "Current Location \n Longitude: %1$s \n Latitude: %2$s",
            location.getLongitude(), location.getLatitude()
      );
      Toast.makeText(LbsGeocodingActivity.this, message,
            Toast.LENGTH_LONG).show();
```

```
    }
  }
  private class MyLocationListener implements LocationListener {
    public void onLocationChanged(Location location) {
      String message = String.format(
          "New Location \n Longitude: %1$s \n Latitude: %2$s",
          location.getLongitude(), location.getLatitude()
      );
      Toast.makeText(LbsGeocodingActivity.this, message, Toast.LENGTH_LONG).show();
    }
    public void onStatusChanged(String s, int i, Bundle b) {
      Toast.makeText(LbsGeocodingActivity.this, "Provider status changed",
          Toast.LENGTH_LONG).show();
    }
    public void onProviderDisabled(String s) {
      Toast.makeText(LbsGeocodingActivity.this,
          "Provider disabled by the user. GPS turned off",
          Toast.LENGTH_LONG).show();
    }
    public void onProviderEnabled(String s) {
      Toast.makeText(LbsGeocodingActivity.this,
          "Provider enabled by the user. GPS turned on",
          Toast.LENGTH_LONG).show();
    }
  }
}
```

activity_main.xml

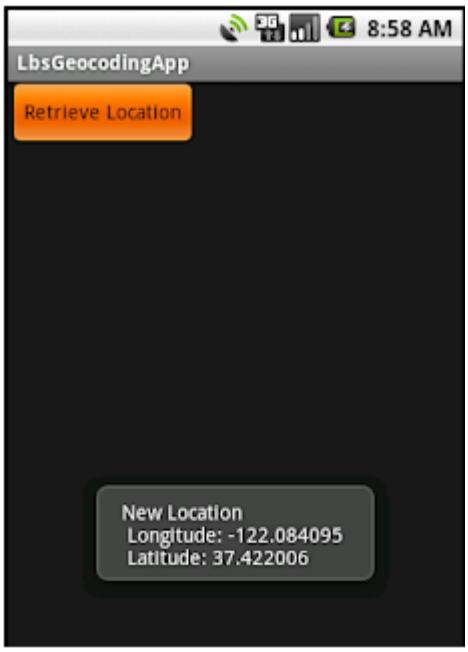
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:orientation="vertical"
  android:layout_width="fill_parent"
```

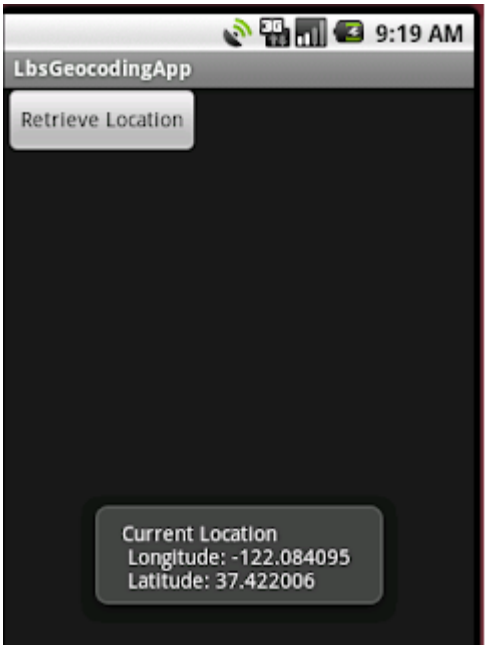
```
   android:layout_height="fill_parent">
<Button
 android:id="@+id/retrieve_location_button"
 android:text="Retrieve Location"
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"/>
</LinearLayout>
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
     package="com.javacodegeeks.android.lbs"
     android:versionCode="1"
     android:versionName="1.0">
   <application android:icon="@drawable/icon" android:label="@string/app_name">
      <activity android:name=".LbsGeocodingActivity"
                android:label="@string/app_name">
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
   <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
 <uses-permission android:name="android.permission.ACCESS_MOCK_LOCATION" />
 <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
   <uses-sdk android:minSdkVersion="3" />
</manifest>
```

Output:





Result:

Thus, a native application that uses GPS location information has been implemented successfully.

Ex.No: 9

IMPLEMENT AN APPLICATION THAT WRITES DATA TO THE SD CARD

Aim:

To implement an application that writes data to the SD card

Procedure:

- Open Android Studio and then click on **File -> New -> New project.**
- Then type the Application name as “My Application” 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.
- 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.
- Click on app -> manifests -> AndroidManifest.xml
- Now include the WRITE_EXTERNAL_STORAGE permissions in the AndroidManifest.xml file as shown below
- Click on app -> java -> com.example.myapplication -> MainActivity.
- Then delete the code which is there and type the code as given below.
- Now run the application to see the output

Code:

MainActivity.java

```
package com.example.myapplication;

import android.os.Bundle;

import androidx.appcomapt.app.AppCompatActivity;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

import java.io.BufferedReader;

import java.io.File;

import java.io.FileInputStream;

import java.io.FileOutputStream;
```

```
import java.io.InputStreamReader;
public class MainActivity extends AppCompatActivity
{
   EditText e1;
   Button write,read,clear;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      e1= (EditText) findViewById(R.id.editText);
      write= (Button) findViewById(R.id.button);
      read= (Button) findViewById(R.id.button2);
      clear= (Button) findViewById(R.id.button3);
      write.setOnClickListener(new View.OnClickListener()
      {
         @Override
         public void onClick(View v)
         {
            String message=e1.getText().toString();
            try
            {
               File f=new File("/sdcard/myfile.txt");
               f.createNewFile();
               FileOutputStream fout=new FileOutputStream(f);
               fout.write(message.getBytes());
               fout.close();
               Toast.makeText(getBaseContext(),"Data Written in
SDCARD",Toast.LENGTH_LONG).show();
            }
            catch (Exception e)
```

```
        {
            Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH_LONG).show();
        }
      }
    });
    read.setOnClickListener(new View.OnClickListener()
    {
      @Override
      public void onClick(View v)
      {
        String message;
        String buf = "";
        try
        {
          File f = new File("/sdcard/myfile.txt");
          FileInputStream fin = new FileInputStream(f);
          BufferedReader br = new BufferedReader(new InputStreamReader(fin));
          while ((message = br.readLine()) != null)
          {
            buf += message;
          }
          e1.setText(buf);
          br.close();
          fin.close();
          Toast.makeText(getBaseContext(),"Data Recived from
SDCARD",Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
          Toast.makeText(getBaseContext(), e.getMessage(), Toast.LENGTH_LONG).show();
        }
```

```
        }
    });
    clear.setOnClickListener(new View.OnClickListener()
    {
        @Override
        public void onClick(View v)
        {
            e1.setText("");
        }
    });
  }
}
```

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="20dp"
  android:orientation="vertical">
  <EditText
    android:id="@+id/editText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:singleLine="true"
    android:textSize="30dp" />
  <Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
```

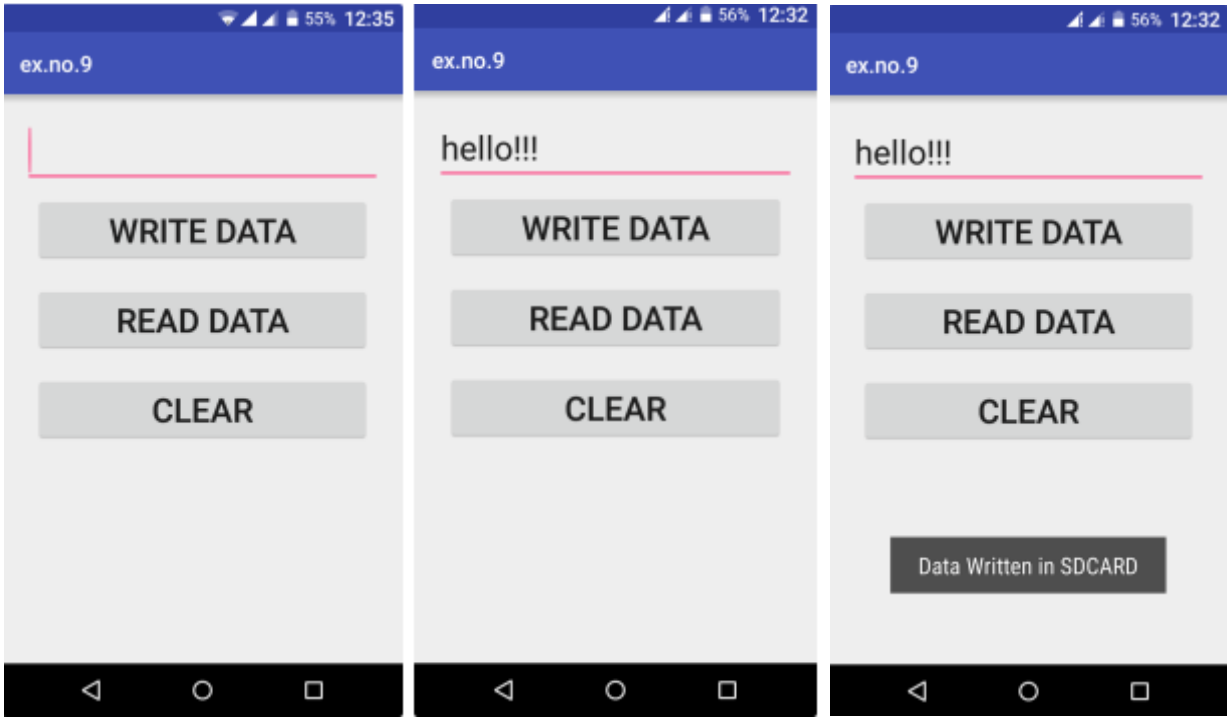
```
    android:text="Write Data"
    android:textSize="30dp" />
  <Button
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Read data"
    android:textSize="30dp" />
  <Button
    android:id="@+id/button3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Clear"
    android:textSize="30dp" />
</LinearLayout>
```

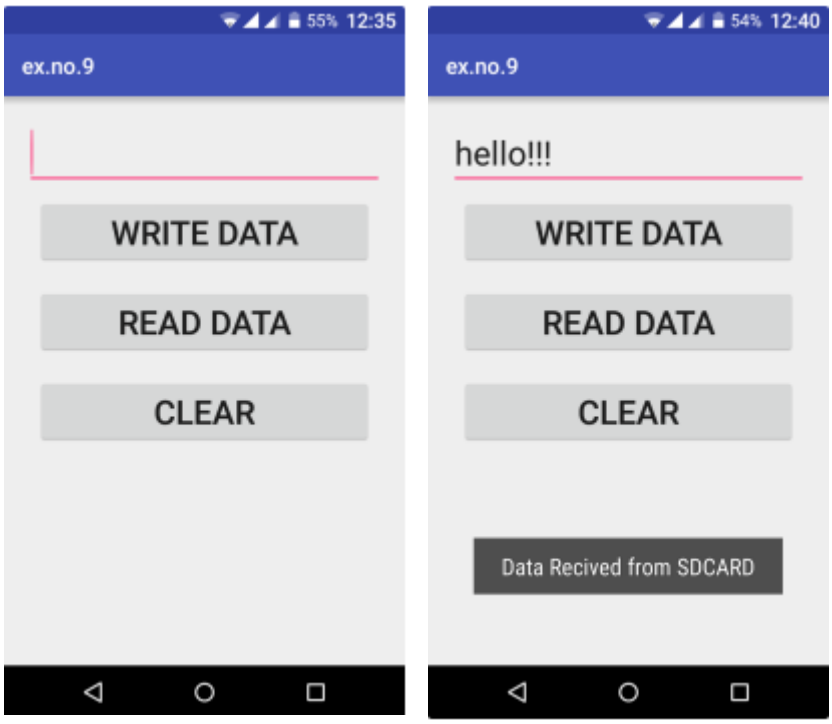
AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.exno9" >
  <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"></uses-permission>
  <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>
```

Output:





Result:

Thus, an android application that writes data to the SD card has been implemented successfully.

Ex.No: 10

IMPLEMENT AN APPLICATION THAT CREATES AN ALERT UPON RECEIVING A MESSAGE

Aim:

To implement an application that creates an alert upon receiving a message.

Procedure:

- Open Android Studio and then click on File -> New -> New project.
- Then type the Application name as “My Application” 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.
- 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.
- 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.
- Click on app -> java -> com.example.myapplication -> MainActivity.
- Now run the application to see the output.

Code:

MainActivity.java

```
package com.example.myapplication;

import android.app.Notification;

import android.app.NotificationManager;

import android.app.PendingIntent;

import android.content.Intent;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends AppCompatActivity

{
```

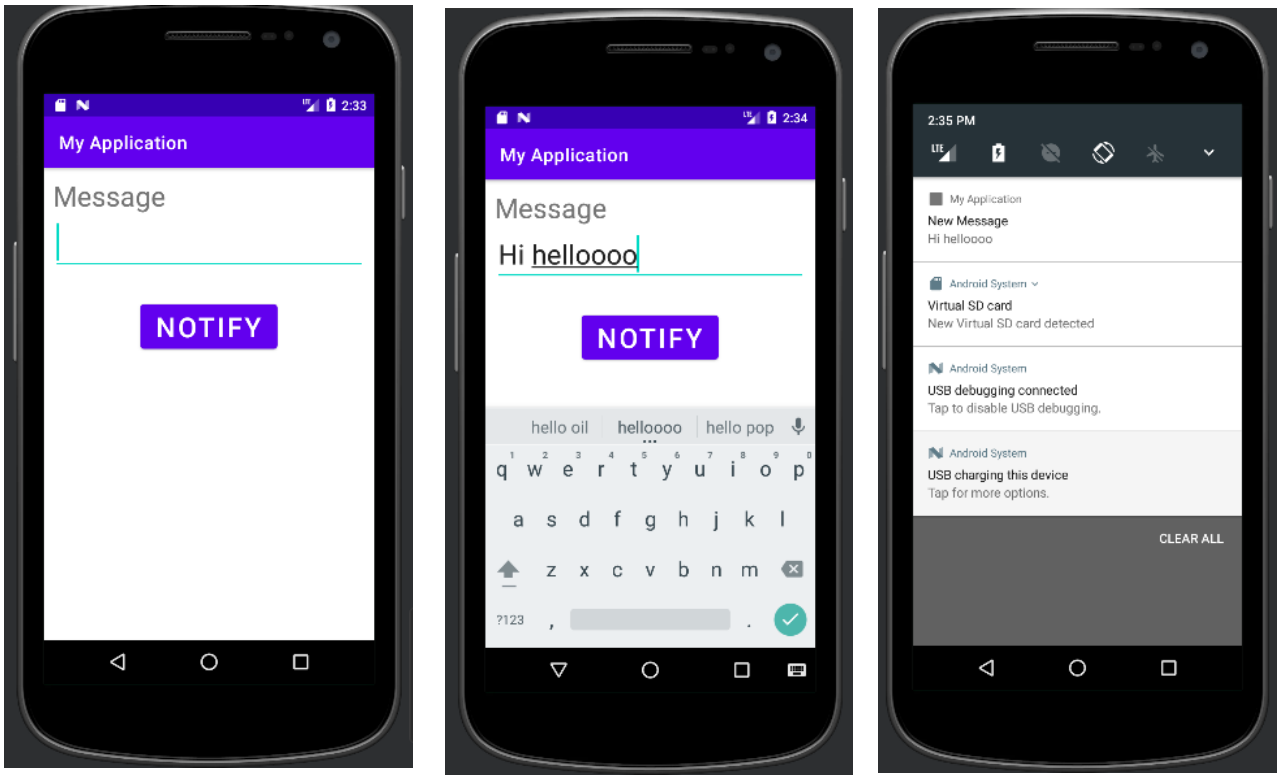
```
    Button notify;
    EditText e;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        notify= (Button) findViewById(R.id.button);
        e= (EditText) findViewById(R.id.editText);
        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).setContentInt
ent(pending).build();
                NotificationManager manager = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
                noti.flags |= Notification.FLAG_AUTO_CANCEL;
                manager.notify(0, noti);
            }
        });
    }
}
```

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>
```

Output:



Result:

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

Ex. No: 11

WRITE A MOBILE APPLICATION THAT CREATES ALARM CLOCK

Aim:

To write a mobile application that creates an alarm clock.

Procedure:

- Open Android Studio and then click on File -> New -> New project.
- Then type the Application name as “My Application” 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.
- 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.
- Click on app -> res -> layout -> activity_main.xml. Then delete the code which is there and type the code as given below.
- Click on app -> manifests -> AndroidManifest.xml
- Now change the activity tag to receiver tag in the AndroidManifest.xml file as shown below
- Click on app -> java -> com.example.myapplication -> MainActivity. Then delete the code which is there and type the code as given below.
- Click on app -> java -> com.example.myapplication -> AlarmReceiver. Then delete the code which is there and type the code as given below.
- Now run the application to see the output.

Code:

MainActivity.java

```
package com.example.myapplication;

import android.app.AlarmManager;

import android.app.PendingIntent;

import android.content.Intent;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

import android.view.View;

import android.widget.TimePicker;

import android.widget.Toast;

import android.widget.ToggleButton;
```

```
import java.util.Calendar;
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();
      }
   }
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   package="com.example.myapplication">
   <application
      android:allowBackup="true"
      android:dataExtractionRules="@xml/data_extraction_rules"
      android:fullBackupContent="@xml/backup_rules"
      android:icon="@mipmap/ic_launcher"
      android:label="@string/app_name"
      android:roundIcon="@mipmap/ic_launcher_round"
      android:supportsRtl="true"
      android:theme="@style/Theme.MyApplication"
      tools:targetApi="31">
      <activity
        android:name=".MainActivity"
        android:exported="true">
        <intent-filter>
```

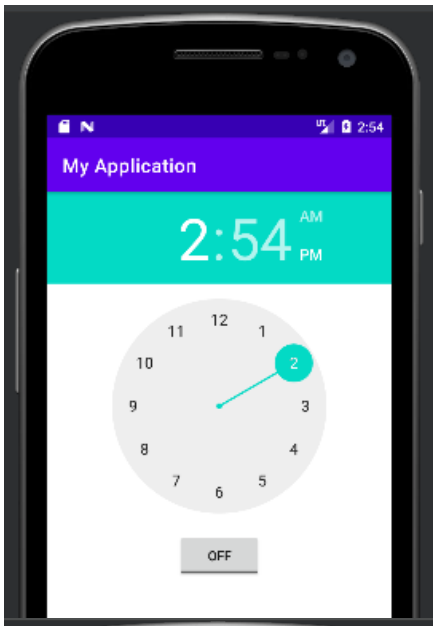
```
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
    <receiver android:name=".AlarmReceiver" >
    </receiver>
  </application>
</manifest>
```

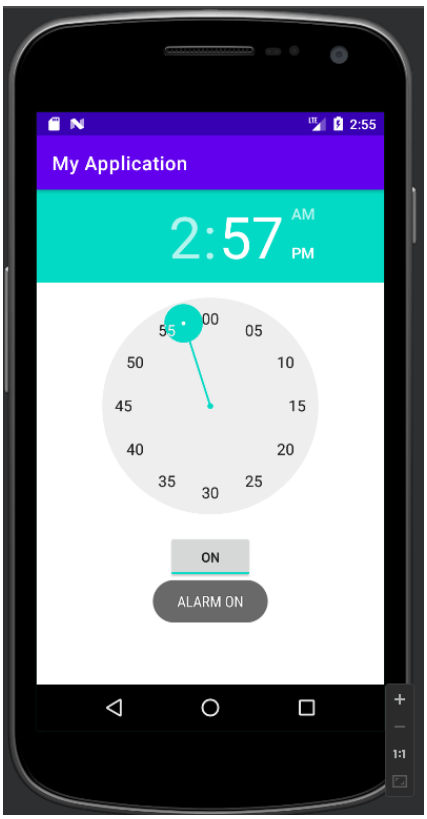
AlarmReceiver.java

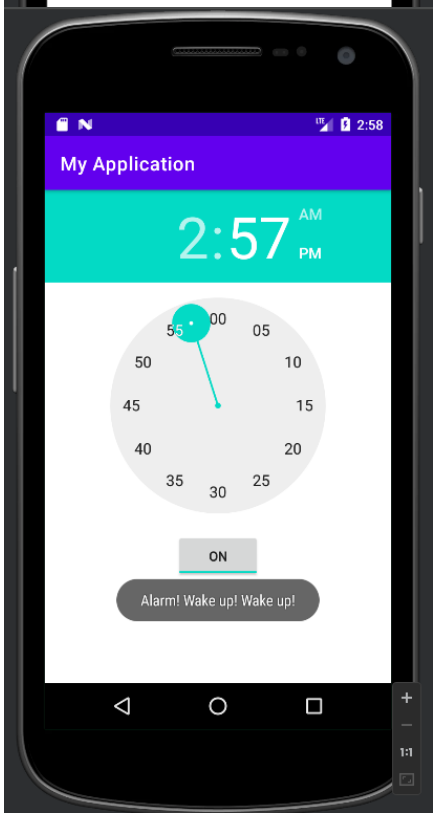
```
package com.example.myapplication;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.widget.Toast;
public class AlarmReceiver extends 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();
```

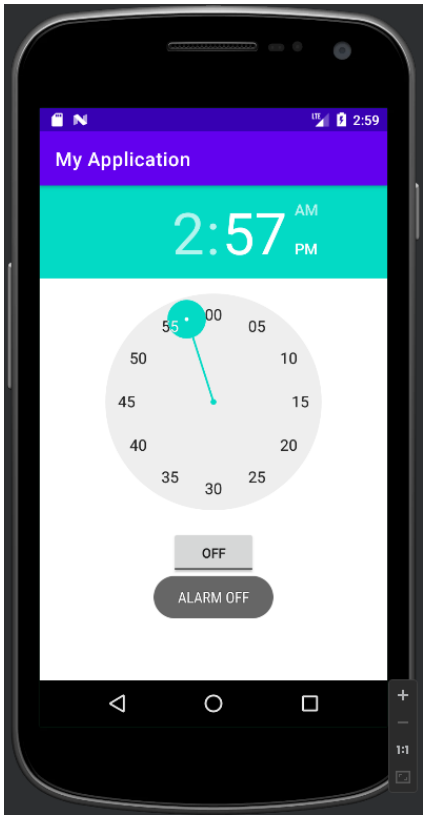
```
    }
}
```

Output:


2:54
My Application
2:54 AM PM
OFF


2:55
My Application
2:57 AM PM
ON
ALARM ON


2:58
My Application
2:57 AM PM
ON
Alarm! Wake up! Wake up!



Result:

Thus, Android Application that creates Alarm Clock is developed and executed successfully.