Additional Exercises

Ex. No. 01 **Android Application that creates Alarm Clock**
Date:

Aim:

To develop a Android Application that creates Alarm Clock.

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:

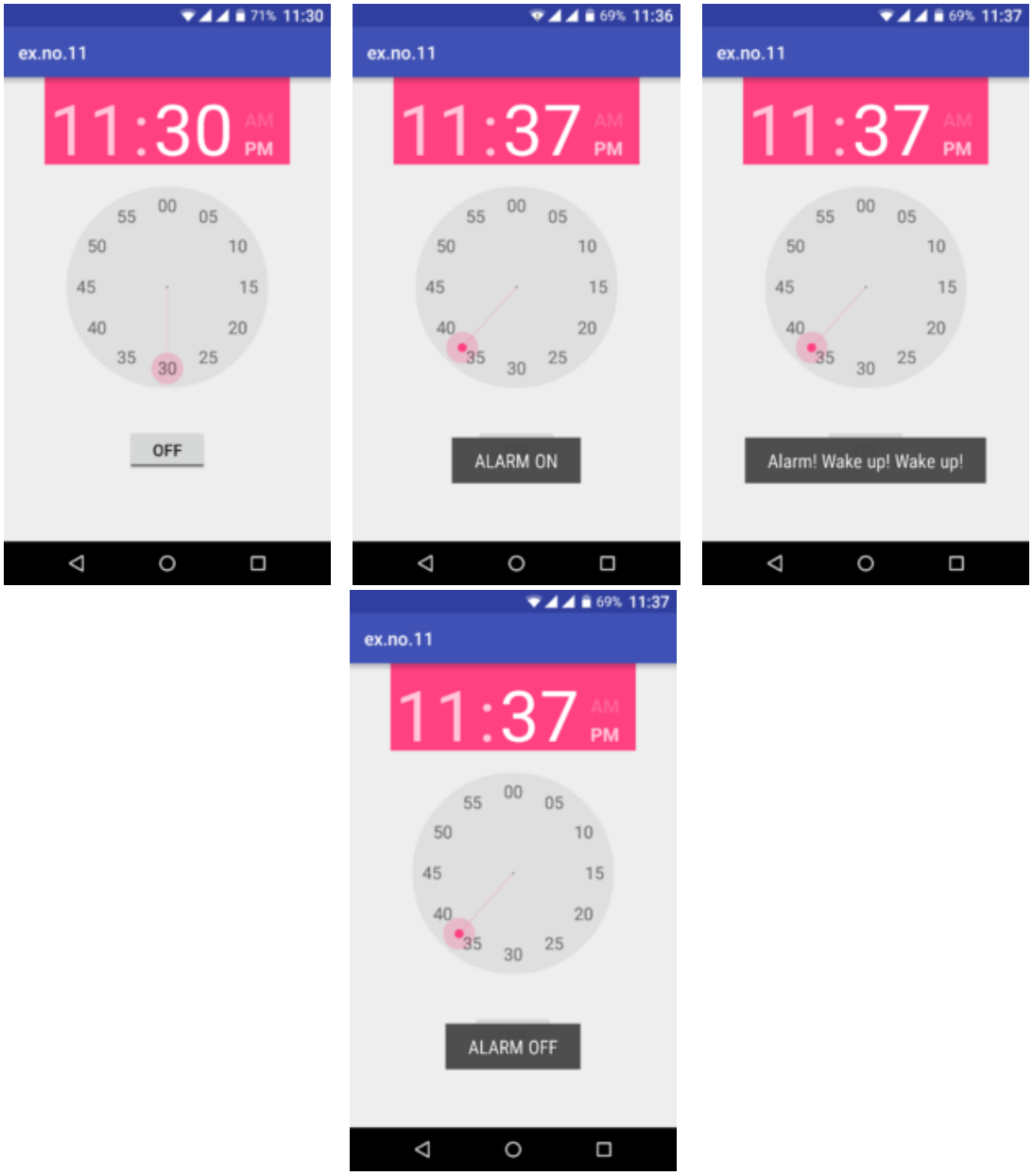
```
packagecom.example.exno13;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.widget.Toast;

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 is developed and executed successfully.