

Develop an android mobile application to create an alarm clock

MainActivity.java

```
package com.indran.alarmclock;

import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.ToggleButton;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {
    TimePicker time;
    TextView text;
    private PendingIntent pendingIntent;
    AlarmManager alarmManager;
    ToggleButton button;

    private static MainActivity inst;

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

        time = (TimePicker) findViewById(R.id.time);

        text = (TextView) findViewById(R.id.text);
        ToggleButton alarmToggle = (ToggleButton) findViewById(R.id.button);

        button = (ToggleButton) findViewById(R.id.button);

        alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
```

```
}
```

```
public static MainActivity instance() {  
    return inst;  
}
```

```
@Override  
public void onStart() {  
    super.onStart();  
    inst = this;  
}
```

```
public void onTClicked(View view) {  
    if (button.isChecked()) {  
        Log.d("ALARM", "Alarm On");  
        setAlarmText("Alarm On");  
        Calendar calendar = Calendar.getInstance();  
        calendar.set(Calendar.HOUR_OF_DAY, time.getCurrentHour());  
        calendar.set(Calendar.MINUTE, time.getCurrentMinute());  
        Intent myIntent = new Intent(MainActivity.this, AlarmReceiver.class);  
        pendingIntent = PendingIntent.getBroadcast(MainActivity.this, 0, myIntent, 0);  
        alarmManager.set(AlarmManager.RTC_WAKEUP, calendar.getTimeInMillis(), pendingIntent);  
    } else {
```

```
        int min = 1;  
        int max = 9;
```

```
        setAlarmText("Alarm canceled");  
        //setAlarmText("You clicked a " + " canceled");
```

```
        alarmManager.cancel(pendingIntent);  
        setAlarmText("");  
        Log.d("MyActivity", "Alarm Off");  
    }  
}
```

```
public void setAlarmText(String alarmText) {  
    text.setText(alarmText);  
}
```

```

@Override
public void onDestroy() {
    super.onDestroy();

    Log.e("MyActivity", "on Destroy");
}
}

```

AlarmService.java
package com.indran.alarmclock;

```

/**
 * Created by indran on 3/22/18.
 */

```

```

/**
 * Created by indran on 3/22/18.
 */

```

```

import android.app.IntentService;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.support.v4.app.NotificationCompat;
import android.util.Log;

```

```

public class AlarmService extends IntentService {
    private NotificationManager alarmNotificationManager;

```

```

    public AlarmService() {
        super("AlarmService");
    }

```

```

@Override
public void onHandleIntent(Intent intent) {
    sendNotification("Wake Up! Wake Up!");
}

```

```

private void sendNotification(String msg) {
    Log.d("AlarmService", "Preparing to send notification...: " + msg);
    alarmNotificationManager = (NotificationManager) this
        .getSystemService(Context.NOTIFICATION_SERVICE);

```

```

PendingIntent contentIntent = PendingIntent.getActivity(this, 0,
    new Intent(this, MainActivity.class), 0);

NotificationCompat.Builder alarmNotificationBuilder = new NotificationCompat.Builder(
    this).setContentTitle("Alarm").setSmallIcon(R.drawable.ic_launcher_foreground)
    .setStyle(new NotificationCompat.BigTextStyle().bigText(msg))
    .setContentText(msg);

alarmNotificationBuilder.setContentIntent(contentIntent);
alarmNotificationManager.notify(1, alarmNotificationBuilder.build());
Log.d("AlarmService", "Notification sent.");
}
}

```

AlarmReceiver.java

```

package com.indran.alarmclock;

/**
 * Created by indran on 3/22/18.
 */

import android.app.Activity;
import android.content.ComponentName;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.support.v4.content.WakefulBroadcastReceiver;

public class AlarmReceiver extends WakefulBroadcastReceiver {

    @Override
    public void onReceive(final Context context, Intent intent) {

        MainActivity inst = MainActivity.instance();
        inst.setAlarmText("Alarm! Wake up! Wake up!");

        //this will sound the alarm tone
        //this will sound the alarm once, if you wish to
        //raise alarm in loop continuously then use MediaPlayer and setLooping(true)
        Uri alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);
        if (alarmUri == null) {

```

```

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

    //this will send a notification message
    ComponentName comp = new ComponentName(context.getPackageName(),
        AlarmService.class.getName());
    startWakefulService(context, (intent.setComponent(comp)));
    setResultCode(Activity.RESULT_OK);
}
}

```

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    tools:context="com.indran.alarmclock.MainActivity">

```

```

    <TimePicker
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/time"
        android:layout_centerHorizontal="true" />

```

```

    <ToggleButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Alarm On/Off"
        android:id="@+id/button"
        android:layout_centerHorizontal="true"
        android:layout_below="@+id/time"
        android:onClick="onTClicked" />

```

```

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textAppearance="?android:attr/textAppearanceLarge"

```

```
android:text=""
android:id="@+id/text"
android:layout_alignParentBottom="true"
android:layout_centerHorizontal="true"
android:layout_margin="5dp"
android:gravity="center"
android:layout_below="@+id/button" />
```

</RelativeLayout>

Develop an android mobile application to create an alarm clock

MainActivity.java

```
package com.indran.alarmclock;
```

```
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.util.Log;
import android.view.View;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.ToggleButton;
```

```
import java.util.Calendar;
```

```
public class MainActivity extends AppCompatActivity {
    TimePicker time;
    TextView text;
    private PendingIntent pendingIntent;
    AlarmManager alarmManager;
    ToggleButton button;
```

```
    private static MainActivity inst;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

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

```
time = (TimePicker) findViewById(R.id.time);
```

```
text = (TextView) findViewById(R.id.text);
```

```
ToggleButton alarmToggle = (ToggleButton) findViewById(R.id.button);
```

```
button = (ToggleButton) findViewById(R.id.button);
```

```
alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
```

```
}
```

```
public static MainActivity instance() {
```

```
    return inst;
```

```
}
```

```
@Override
```

```
public void onStart() {
```

```
    super.onStart();
```

```
    inst = this;
```

```
}
```

```
public void onTClicked(View view) {
```

```
    if (button.isChecked()) {
```

```
        Log.d("ALARM", "Alarm On");
```

```
        setAlarmText("Alarm On");
```

```
        Calendar calendar = Calendar.getInstance();
```

```
        calendar.set(Calendar.HOUR_OF_DAY, time.getCurrentHour());
```

```
        calendar.set(Calendar.MINUTE, time.getCurrentMinute());
```

```
        Intent myIntent = new Intent(MainActivity.this, AlarmReceiver.class);
```

```
        pendingIntent = PendingIntent.getBroadcast(MainActivity.this, 0, myIntent, 0);
```

```
        alarmManager.set(AlarmManager.RTC_WAKEUP, calendar.getTimeInMillis(), pendingIntent);
```

```
    } else {
```

```
        int min = 1;
```

```
        int max = 9;
```

```
setAlarmText("Alarm canceled");
```

```
alarmManager.cancel(pendingIntent);  
setAlarmText("");  
Log.d("MyActivity", "Alarm Off");
```

```
}
```

```
public void setAlarmText(String alarmText) {  
    text.setText(alarmText);  
}
```

```
@Override  
public void onDestroy() {  
    super.onDestroy();
```

```
    Log.e("MyActivity", "on Destroy");
```

```
}
```

```
}
```

AlarmService.java

```
package com.indran.alarmclock;
```

```
import android.app.IntentService;  
import android.app.NotificationManager;  
import android.app.PendingIntent;  
import android.content.Context;  
import android.content.Intent;  
import android.util.Log;
```

```
public class AlarmService extends IntentService {  
    private NotificationManager alarmNotificationManager;
```

```
    public AlarmService() {  
        super("AlarmService");  
    }
```

```
@Override  
public void onHandleIntent(Intent intent) {  
    sendNotification("Wake Up! Wake Up!");  
}
```

```
private void sendNotification(String msg) {
```



```
Log.d("AlarmService", "Preparing to send notification...: " + msg);
alarmNotificationManager = (NotificationManager) this
    .getSystemService(Context.NOTIFICATION_SERVICE);
```

```
PendingIntent contentIntent = PendingIntent.getActivity(this, 0,
    new Intent(this, MainActivity.class), 0);
```

```
NotificationCompat.Builder alarmNotificationBuilder = new NotificationCompat.Builder(
    this).setContentTitle("Alarm").setSmallIcon(R.drawable.ic_launcher_foreground)
    .setStyle(new NotificationCompat.BigTextStyle().bigText(msg))
    .setContentText(msg);
```

```
alarmNotificationBuilder.setContentIntent(contentIntent);
alarmNotificationManager.notify(1, alarmNotificationBuilder.build());
Log.d("AlarmService", "Notification sent.");
}
```

```
}
```

AlarmReceiver.java

```
package com.indran.alarmclock;
```

```
/**
 * Created by indran on 3/22/18.
 */
```

```
import android.app.Activity;
import android.content.ComponentName;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
```

```
public class AlarmReceiver extends WakefulBroadcastReceiver {
```

```
    @Override
    public void onReceive(final Context context, Intent intent) {
```

```
        MainActivity inst = MainActivity.instance();
        inst.setAlarmText("Alarm! Wake up! Wake up!");
```

```
        Uri alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);
```

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

```
        ComponentName comp = new ComponentName(context.getPackageName(),  
            AlarmService.class.getName());  
        startWakefulService(context, (intent.setComponent(comp)));  
        setResultCode(Activity.RESULT_OK);  
    }  
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout  
    tools:context="com.indran.alarmclock.MainActivity">
```

```
<TimePicker  
    android:id="@+id/time" />
```

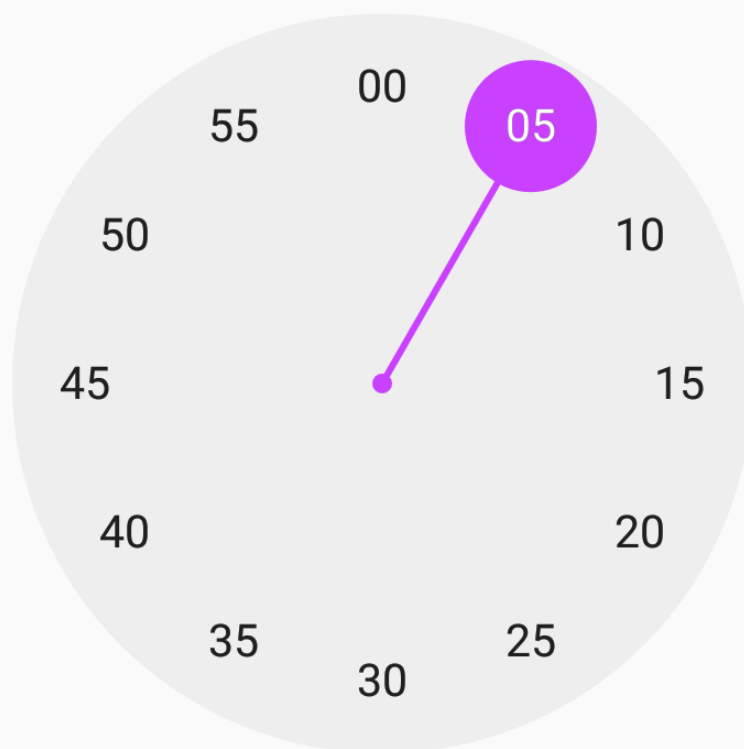
```
<ToggleButton  
    android:text="Alarm On/Off"  
    android:id="@+id/button"  
    android:onClick="onTClicked" />
```

```
<TextView  
    android:id="@+id/text" />
```

```
</RelativeLayout>
```

Alarm Clock

5:05 AM
PM



ON

Alarm On

