Week12: Create an alarm clock mobile application

*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">  
  
 <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.Alarm"  
 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>

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>

MainActivity.java

package com.example.alarm;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.app.AlarmManager;  
import android.app.PendingIntent;  
import android.content.Intent;  
import android.os.Bundle;  
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, PendingIntent.*FLAG\_IMMUTABLE*);  
  
 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();  
 }  
 }  
}

AlarmReceiver.java

package com.example.alarm;  
  
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();  
  
  
 }  
}

