

ASSIGNMENT NO - 4

Aim : To write an android program for a functioning Alarm clock with on/off toggle option .

➤ **Description:**

I have to create an android application which can setup and discard the alarm using alarmclock:

- Create a new project.
- Name them as alarmclock.
- It will generate activity_main.xml and mainactivity.java file.

➤ **Expected input:**

My expected input is the time at which we have to set the alarm the clock.

➤ **Expected output:**

My expected output is the alarm clock which will set the alarm according to our requirement and give notification at the allotted time .

➤ **Discussion:**

In this program I will create an application which consist of the user interface where a user can choose the time and set the alarm.

➤ **Error checking :**

I have done the error checking there is no any error the program is running well and fine.

➤ **Assumption taken:**

There should be the system compatible with alarm clock.

➤ **Scope for improvement:**

Its user interface should be improved and some more function can be added.

➤ **Additional feature :**

It will notify the user at a particular time.

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">

    <!--Added Time picker just to pick the alarm time-->
    <!--gravity is aligned to center-->
    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center" />

    <!--Added Toggle Button to set the alarm on or off-->
    <!--ByDefault toggleButton is set to false-->
    <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" />

    <!--"OnToggleClicked" method will be implemented in MainActivity.java -
    ->

</LinearLayout>
```

MainActivity.java

```
package com.example.cloc;

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 androidx.appcompat.app.AppCompatActivity;

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);
}

// OnToggleClicked() method is implemented the time functionality
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 is called to get current time in hour and minute
        calendar.set(Calendar.HOUR_OF_DAY,
alarmTimePicker.getCurrentHour());
        calendar.set(Calendar.MINUTE,
alarmTimePicker.getCurrentMinute());

        // using intent i have class AlarmReceiver class which inherits
        // BroadcastReceiver
        Intent intent = new Intent(this, alarmReceiver.class);

        // we call broadcast using pendingIntent
        pendingIntent = PendingIntent.getBroadcast(this, 0, intent, 0);

        time = (calendar.getTimeInMillis() -
(calendar.getTimeInMillis() % 60000));
        if (System.currentTimeMillis() > time) {
            // setting time as AM and PM
            if (calendar.AM_PM == 0)
                time = time + (1000 * 60 * 60 * 12);
            else
                time = time + (1000 * 60 * 60 * 24);
        }
        // Alarm rings continuously until toggle button is turned off
        alarmManager.setRepeating(AlarmManager.RTC_WAKEUP, time, 10000,
pendingIntent);
        // alarmManager.set(AlarmManager.RTC_WAKEUP,
System.currentTimeMillis() + (time * 1000), pendingIntent);
    } else {
        alarmManager.cancel(pendingIntent);
        Toast.makeText(MainActivity.this, "ALARM OFF",
Toast.LENGTH_SHORT).show();
    }
}
}

```

AlarmReceiver.java

```

package com.example.cloc;

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.os.Build;
import android.os.Vibrator;
import android.widget.Toast;

import androidx.annotation.RequiresApi;

public class alarmReceiver extends BroadcastReceiver {

    @RequiresApi(api = Build.VERSION_CODES.Q)
    @Override
    public void onReceive(Context context, Intent intent) {

        Vibrator vibrator = (Vibrator)
context.getSystemService(context.VIBRATOR_SERVICE);
        vibrator.vibrate(4000);

        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);
        }

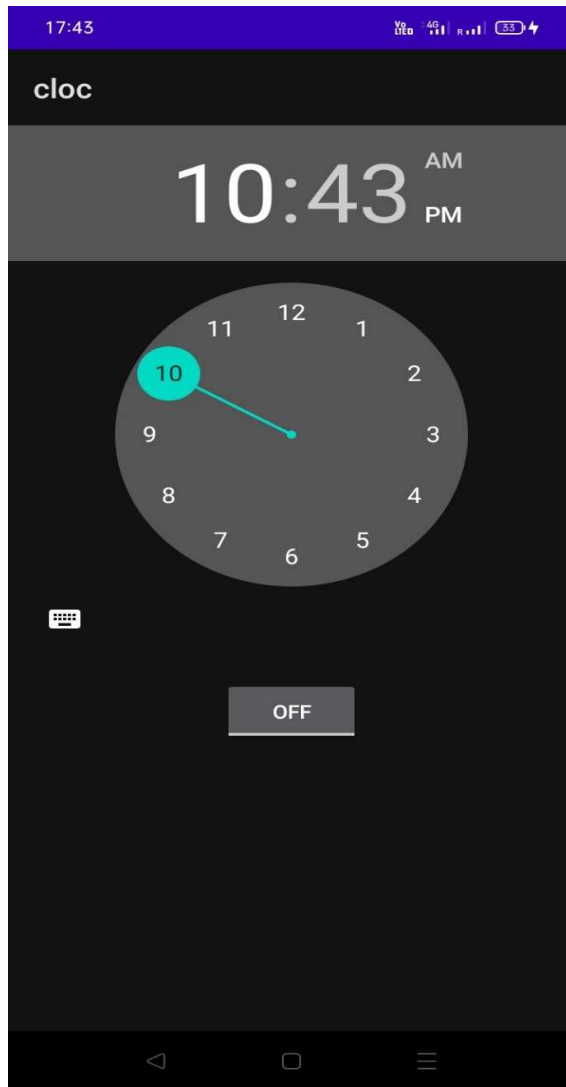
        // setting default ringtone
        Ringtone ringtone = RingtoneManager.getRingtone(context, alarmUri);

        // play ringtone
        ringtone.play();

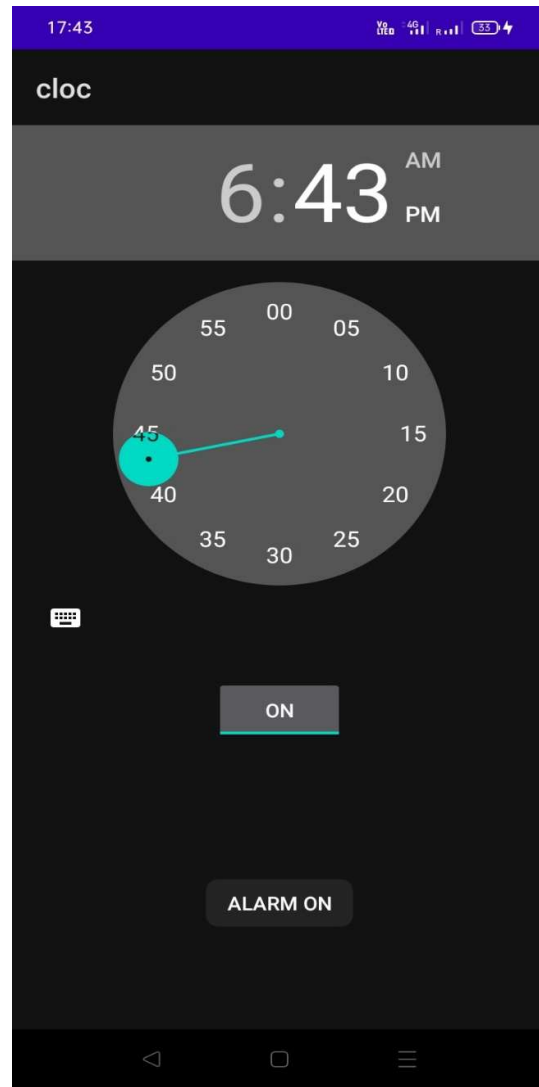
    }
}

```

Output



Alarm clock



Alarm on