

Practical: 7

■ AIM- What is BroadcastReceiver? Difference between Service and BroadcastReceiver. Create an Alarm application by using service & BroadcastReceiver

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Practical-7

AIM: What is BroadcastReceiver? Difference between Service and BroadcastReceiver.

Create an Alarm application by using service & BroadcastReceiver.

activity main.xml:-

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity">
    <com.google.android.material.appbar.AppBarLayout
        android:id="@+id/appbar"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toTopOf="parent">
        <androidx.appcompat.widget.Toolbar
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />
        </com.google.android.material.appbar.AppBarLayout>
        <androidx.core.widget.NestedScrollView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            app:layout_constraintTop_toBottomOf="@id/appbar"
            app:layout_constraintStart_toStartOf="parent"
            android:layout_marginTop="60dp"
            app:layout_behavior="@string/appbar_scrolling_view_behavior"
        >
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical">
            <com.google.android.material.card.MaterialCardView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_marginStart="20dp"
                android:layout_marginTop="30dp"
```

```

        android:layout_marginEnd="20dp"
        app:cardCornerRadius="15dp"
        app:cardElevation="10dp"
        android:layout_marginBottom="40dp">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical">
            <ImageView
                android:layout_width="match_parent"
                android:layout_height="200dp"
                android:scaleType="fitXY"
                android:src="@drawable/alarm" />
            <LinearLayout
                android:background="@color/black"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:backgroundTint="#EAEFEA"
                android:orientation="vertical"
                android:padding="20dp">
                <TextView
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:text="Create Alarm Time"
                    android:textStyle="bold"
                    android:textSize="15sp"/>
                <TextView
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:layout_marginTop="10dp"
                    android:layout_marginStart="10dp"
                    android:text="By pressing buttons, Alarm can be created
and cancelled."/>
                <TextView
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:layout_marginStart="10dp"
                    android:text="Check Current time by looking below real
digital clock."
                    android:layout_marginTop="10dp"/>
                <TextClock
                    android:id="@+id/show_time_tv"
                    android:layout_width="wrap_content"

```

```

        android:layout height="wrap_content"
        android:layout gravity="center"
        android:text="Show Time Here"
        android:textStyle="bold"
        android:layout marginTop="10dp"
        android:textSize="15sp"/>
    <com.google.android.material.button.MaterialButton
        android:id="@+id/btnCreateAlarm"
        android:layout width="277dp"
        android:layout height="wrap_content"
        android:layout marginTop="10dp"
        android:text="Create Alarm"
        android:textAllCaps="false"
        android:textStyle="bold"
        app:cornerRadius="25dp"
    />
</LinearLayout>
</LinearLayout>
</com.google.android.material.card.MaterialCardView>
<com.google.android.material.card.MaterialCardView
    android:id="@+id/cancel_alarm_card_view"
    android:layout width="match_parent"
    android:layout height="wrap_content"
    android:layout marginStart="20dp"
    android:layout marginEnd="20dp"
    app:cardCornerRadius="15dp"
    app:cardElevation="10dp">
    <LinearLayout
        android:layout width="match_parent"
        android:layout height="match_parent"
        android:orientation="vertical">
        <ImageView
            android:layout width="match_parent"
            android:layout height="200dp"
            android:scaleType="fitXY"
            android:src="@drawable/alarm" />
        <LinearLayout
            android:background="@color/black"
            android:layout width="match_parent"
            android:layout height="wrap_content"
            android:backgroundTint="#EAEFEA"
            android:orientation="vertical"

```

```

        android:padding="20dp">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Set Alarm Time"
            android:textStyle="bold"
            android:textSize="15sp"/>
        <TextView
            android:id="@+id/set_alarm_time"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:text="Time"
            android:textStyle="bold"
            android:textSize="15sp"/>
        <com.google.android.material.button.MaterialButton
            android:id="@+id/btnCancelAlarm"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            app:cornerRadius="25dp"
            android:layout_marginTop="20dp"
            android:text="Cancel Alarm"
            android:textStyle="bold"
            android:textAllCaps="false"/>
    </LinearLayout>
</LinearLayout>
</com.google.android.material.card.MaterialCardView>
</LinearLayout>
</androidx.core.widget.NestedScrollView>
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.kt:-

```

package com.example.mad_practical_7

import android.app.AlarmManager
import android.app.PendingIntent
import android.app.TimePickerDialog
import android.content.Intent
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.view.View
import android.widget.Toast
import com.example.mad_practical_7.databinding.ActivityMainBinding

```

```

import java.text.SimpleDateFormat
import java.util.*

class MainActivity : AppCompatActivity() {
    private lateinit var binding: ActivityMainBinding
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)

        binding = ActivityMainBinding.inflate(layoutInflater)
        setContentView(binding.root)

        setSupportActionBar(binding.toolbar)

        binding.cardListAlarm.visibility = View.GONE
        binding.btnCreateAlarm.setOnClickListener {
            showTimerDialog()
        }
        binding.btnCancelAlarm.setOnClickListener {
            setAlarm(-1, "Stop")
            binding.cardListAlarm.visibility = View.GONE
        }
    }

    private fun showTimerDialog() {
        val picker = TimePickerDialog(
            this, {tp, sHour, sMinute -> sendDialogDataToActivity(sHour, sMinute) },
            Calendar.getInstance().get(Calendar.HOUR_OF_DAY),
            Calendar.getInstance().get(Calendar.MINUTE),
            false
        )
        picker.show()
    }

    private fun sendDialogDataToActivity(hour: Int, minute: Int) {
        val alarmCalendar = Calendar.getInstance()
        val year: Int = alarmCalendar.get(Calendar.YEAR)
        val month: Int = alarmCalendar.get(Calendar.MONTH)
        val day: Int = alarmCalendar.get(Calendar.DATE)
        alarmCalendar.set(year, month, day, hour, minute, 0)
        binding.textAlarmTime.text = SimpleDateFormat("hh:mm:ss
a").format(alarmCalendar.time)
        binding.cardListAlarm.visibility = View.VISIBLE
        setAlarm(alarmCalendar.timeInMillis, "Start")
    }

    private fun setAlarm(millisTime: Long, str: String) {
        val intent = Intent(this, AlarmBroadcastReceiver::class.java)
        intent.putExtra("Service", str)
        val pendingIntent =
PendingIntent.getBroadcast(applicationContext, 234324243, intent, PendingIntent.FLAG UPD
ATE_CURRENT)
        val alarmManager = getSystemService(ALARM_SERVICE) as AlarmManager
        if (str == "Start") {
            alarmManager.setExact(
                AlarmManager.RTC_WAKEUP,
                millisTime,
                pendingIntent
            )
        }
    }
}

```

```

        Toast.makeText(this, "Start Alarm", Toast.LENGTH_SHORT).show()
    } else if (str == "Stop") {
        {
            alarmManager.cancel(pendingIntent)
            sendBroadcast(intent)
            Toast.makeText(this, "Stop Alarm", Toast.LENGTH_SHORT).show()
        }
    }
}
}
}

```

AlarmBroadcastReceiver.kt:-

```
package com.example.mad practical 7
```

```

import android.content.BroadcastReceiver
import android.content.Context
import android.content.Intent

```

```

class AlarmBroadcastReceiver: BroadcastReceiver() {
    override fun onReceive(context: Context, intent: Intent) {
        val str1 = intent.getStringExtra("Service1")
        if (str1 == "Start" || str1 == "Stop") {
            val intentService = Intent(context, AlarmService::class.java)
            intentService.putExtra("Service1", intent.getStringExtra("Service1"))
            if (str1 == "Start")
                context.startService(intentService)
            else if (str1 == "Stop")
                context.stopService(intentService)
        }
    }
}

```

AlarmService.kt:-

```
package com.example.mad practical 7
```

```

import android.app.Service
import android.content.Intent
import android.media.MediaPlayer
import android.os.IBinder

```

```

class AlarmService : Service() {

    var mp: MediaPlayer? = null

    override fun onStartCommand(intent: Intent?, flags: Int, startId: Int): Int {
        if (intent != null) {

```

```

        mp = MediaPlayer.create(this, R.raw.alarm);
        mp?.start()
    }

    return START_STICKY
}

override fun onDestroy() {
    mp?.stop()
    super.onDestroy()
}

override fun onBind(intent: Intent): IBinder {
    TODO("Not yet implemented")
}
}

```

AndroidManifests.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.mad_practical_7">

    <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.MAD_PRACTICAL7"

        tools:targetApi="31">

        <service

            android:name=".AlarmService"

            android:enabled="true"

            android:exported="true"></service>

```



```
<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=".AlarmBroadcastReceiver"
```

```
    android:directBootAware="true"
```

```
    android:enabled="true"
```

```
    android:exported="true">
```

```
    <intent-filter>
```

```
        <action android:name="android.intent.action.BOOT_COMPLETED" />
```

```
        <action android:name="android.intent.action.LOCKED_BOOT_COMPLETED" />
```

```
    </intent-filter>
```

```
</receiver>
```

```
<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>
```

```
</application>
```

</manifest>

OUTPUT :

