[2CEIT5PE5: MOBILE APPLICATION DEVELOPMENT]

Practical: 5

AIM: What is Service? Write down types of Service. Create an MP3 player application by using service by following below instructions.

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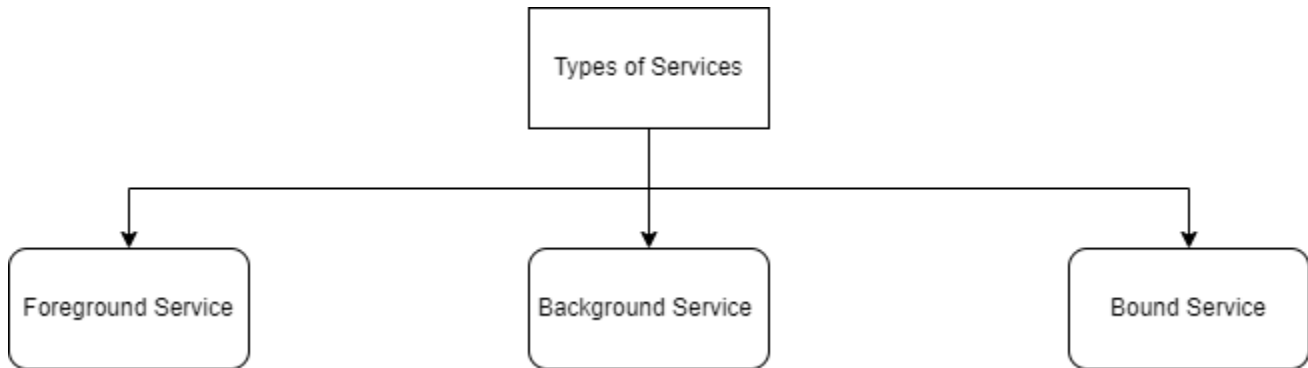|| विद्या समाजोत्कर्षः ||

**Department of Computer
Engineering/Information Technology**

What is Service?

Service are code that runs in the background. They can be started and stopped. Services doesn't have UI.

Types of Service?

1. **Foreground:** Foreground services require user interface.
2. **Background:** Background services do not require any user intervention.
3. **Bound:** This type of android service allows the components of the application like activity to bound themselves with it.

activity_main.xml

```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.card.MaterialCardView
        android:id="@+id/img_cardview"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        android:layout_marginStart="30dp"
        android:layout_marginEnd="30dp"
        android:layout_marginTop="50dp"
        app:cardElevation="20dp"
        app:cardCornerRadius="15dp">
        <androidx.constraintlayout.widget.ConstraintLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent">
            <com.google.android.material.card.MaterialCardView
                android:layout_width="300dp"
                android:layout_height="300dp"
                app:layout_constraintTop_toTopOf="parent"
                app:layout_constraintStart_toStartOf="parent"
```

```
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintBottom_toBottomOf="parent"
            android:layout_marginTop="10dp"
            android:layout_marginBottom="10dp"
            app:cardCornerRadius="25dp">
            <ImageView
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:src="@drawable/song"
                />
        </com.google.android.material.card.MaterialCardView>

        <View
            android:layout_width="30dp"
            android:layout_height="120dp"
            android:background="@drawable/design_view1"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintBottom_toBottomOf="parent"
            android:layout_marginEnd="-10dp"/>
        <View
            android:layout_width="30dp"
            android:layout_height="120dp"
            android:background="@drawable/design_view2"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintBottom_toBottomOf="parent"
            android:layout_marginStart="-10dp"/>
    </androidx.constraintlayout.widget.ConstraintLayout>


</com.google.android.material.card.MaterialCardView>

<com.google.android.material.card.MaterialCardView
    android:id="@+id/control_cardView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:cardElevation="20dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintBottom_toBottomOf="parent"
    android:layout_marginBottom="-5dp">

    <androidx.constraintlayout.widget.ConstraintLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <androidx.constraintlayout.widget.ConstraintLayout
            android:id="@+id/song_layout"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            app:layout_constraintBottom_toTopOf="@id/view1"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent">
```

```xml
            <TextView
                android:id="@+id/song_text"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Song Name"
                android:textSize="24dp"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent" />
    </androidx.constraintlayout.widget.ConstraintLayout>

    <View
        android:id="@+id/view1"
        android:layout_width="0dp"
        android:layout_height="120dp"
        android:background="@drawable/design_view3"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"/>

    <androidx.constraintlayout.widget.ConstraintLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:layout_marginBottom="40dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@id/song_layout">

        <com.google.android.material.floatingactionbutton.FloatingActionButton
            android:id="@+id/btn_play"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:backgroundTint="@color/white"
            android:src="@drawable/ic_baseline_play_arrow_24"
            app:elevation="0dp"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintStart_toEndOf="@+id/btn_previous"
            app:layout_constraintEnd_toStartOf="@+id/btn_stop"
            android:layout_marginStart="5dp"
            />

        <com.google.android.material.floatingactionbutton.FloatingActionButton
            android:id="@+id/btn_stop"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:backgroundTint="@color/white"
            android:src="@drawable/ic_baseline_stop_24"
            app:elevation="0dp"
            app:layout_constraintStart_toEndOf="@id/btn_play"
            app:layout_constraintEnd_toStartOf="@+id/btn_next"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintBottom_toBottomOf="parent"
```

```
                        android:layout_marginStart="5dp"/>

                <com.google.android.material.floatingactionbutton.FloatingActionButton
                    android:id="@+id/btn_next"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:backgroundTint="@color/white"
                    android:src="@drawable/ic_baseline_keyboard_arrow_right_24"
                    app:elevation="0dp"
                    app:layout_constraintStart_toEndOf="@id/btn_stop"
                    app:layout_constraintEnd_toEndOf="parent"
                    app:layout_constraintTop_toTopOf="parent"
                    app:layout_constraintBottom_toBottomOf="parent"
                    android:layout_marginStart="5dp"/>

                <com.google.android.material.floatingactionbutton.FloatingActionButton
                    android:id="@+id/btn_previous"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:backgroundTint="@color/white"
                    android:src="@drawable/ic_baseline_keyboard_arrow_left_24"
                    app:elevation="0dp"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toStartOf="@id/btn_play"
                    app:layout_constraintStart_toStartOf="parent"
                    app:layout_constraintTop_toTopOf="parent" />
            </androidx.constraintlayout.widget.ConstraintLayout>

        </androidx.constraintlayout.widget.ConstraintLayout>
    </com.google.android.material.card.MaterialCardView>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.kt

```kotlin
package com.example.madpractical5_21012022030

import android.content.Intent
import android.os.Bundle
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity
import com.google.android.material.floatingactionbutton.FloatingActionButton

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        val btnPlay:FloatingActionButton=findViewById(R.id.btn_play)
        val btnStop:FloatingActionButton=findViewById(R.id.btn_stop)
        val btnNext:FloatingActionButton=findViewById(R.id.btn_next)
        val btnPrevious:FloatingActionButton=findViewById(R.id.btn_previous)
        val txtSong:TextView=findViewById(R.id.song_text)
        txtSong.text="No Song Playing"
        var i=0;
```

```
btnPlay.setOnClickListener {
    txtSong.text="Song"
    play()
    if(i==0)
    {
        btnPlay.setImageResource(android.R.drawable.ic_media_pause)
        i=1
    }
    else{
        btnPlay.setImageResource(android.R.drawable.ic_media_play)
        i=0
    }

}
btnStop.setOnClickListener {
    txtSong.text="No Song Playing"
    stop()
    if(i==1)
    {
        btnPlay.setImageResource(android.R.drawable.ic_media_play)
        i=0
    }
}

btnNext.setOnClickListener {

}
btnPrevious.setOnClickListener {

}
}
fun play()
{
    Intent(applicationContext,MediaService::class.java)
    .putExtra(MediaService.DATA_KEY,MediaService.DATA_VALUE).apply {
        startService(this)
    }
}
fun stop()
{
    Intent(applicationContext,MediaService::class.java).apply {
        stopService(this)
    }
}
}
```

MediaService.kt

```kotlin
package com.example.madpractical5_21012022030

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

class MediaService : Service() {
    companion object{
        public final val DATA_KEY="service"
        public val DATA_VALUE="play/pause"
    }
    private lateinit var player: MediaPlayer
    override fun onBind(intent: Intent): IBinder {
        TODO("Return the communication channel to the service.")
    }

    override fun onStartCommand(intent: Intent?, flags: Int, startId: Int): Int {
        if(!this::player.isInitialized){
            player=MediaPlayer.create(this,R.raw.song)
        }
        if(intent!=null){
            val str=intent.getStringExtra(DATA_KEY)
            if(str == DATA_VALUE)
            {
                if(player.isPlaying)
                {
                    player.pause()
                }
                else{
                    player.start()
                    var dur = player.duration
                }
            }
        }
        else{
            player.start()
        }
        return START_STICKY
    }

    override fun onDestroy() {
        player.stop()
        super.onDestroy()
    }
}
```
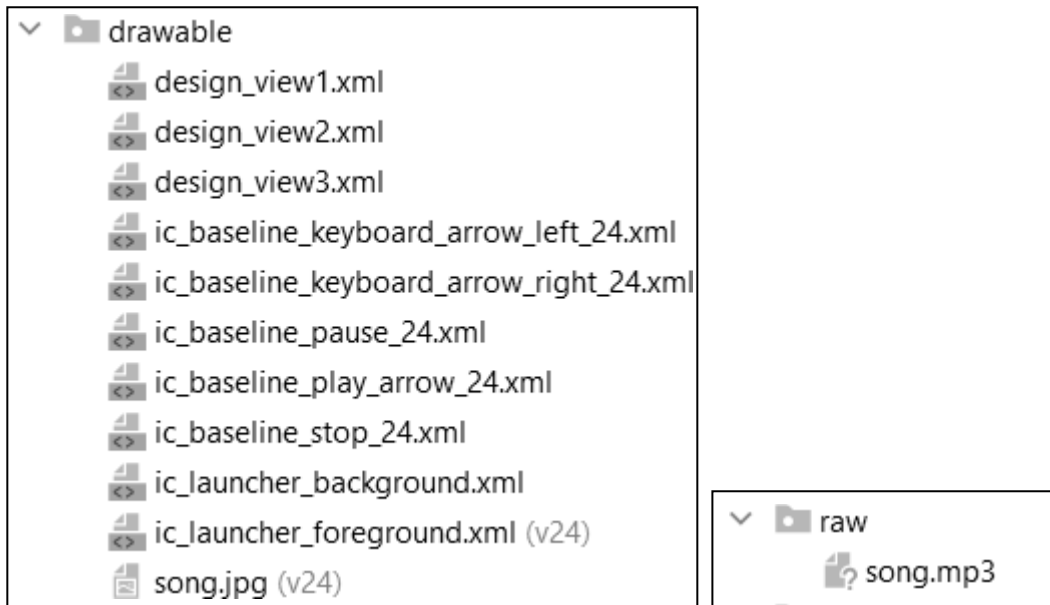
Resource:

Output: