**[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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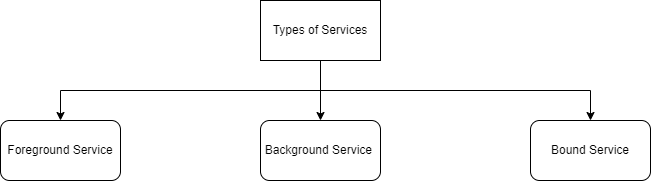


**Department of Computer Engineering/Information Technology**

**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:** Services that notify the user about its ongoing operations are termed as Foreground Services. Users can interact with the service by the notifications provided about the ongoing task. Such as in downloading a file, the user can keep track of the progress in downloading and can also pause and resume the process.
2. **Background:** Background services do not require any user intervention. These services do not notify the user about ongoing background tasks and users also cannot access them. The process like schedule syncing of data or storing of data fall under this service.
3. **Bound:** This type of android service allows the components of the application like activity to bound themselves with it. Bound services perform their task as long as any application component is bound to it. More than one component is allowed to bind themselves with a service at a time. In order to bind an application component with a service **bindService()** method is used.

**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.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"  
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 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">  
  
 <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" />  
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 app:layout\_constraintStart\_toStartOf="parent"  
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 android:layout\_marginBottom="40dp"  
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 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  
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 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"  
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 </androidx.constraintlayout.widget.ConstraintLayout>  
  
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</androidx.constraintlayout.widget.ConstraintLayout>**

M**ainActivity.kt**

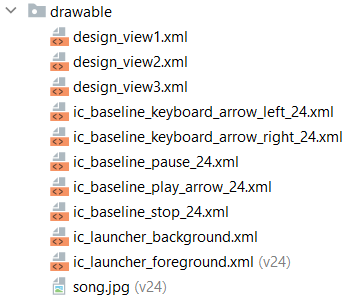
**package com.example.madpractical5\_21012022022  
  
import android.content.Intent  
import android.os.Bundle  
import android.widget.TextView  
import androidx.appcompat.app.AppCompatActivity  
import com.google.android.material.floatingactionbutton.FloatingActionButton  
  
class MainActivity : AppCompatActivity() {  
 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**

**package com.example.madpractical5\_21012022022  
  
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:**

