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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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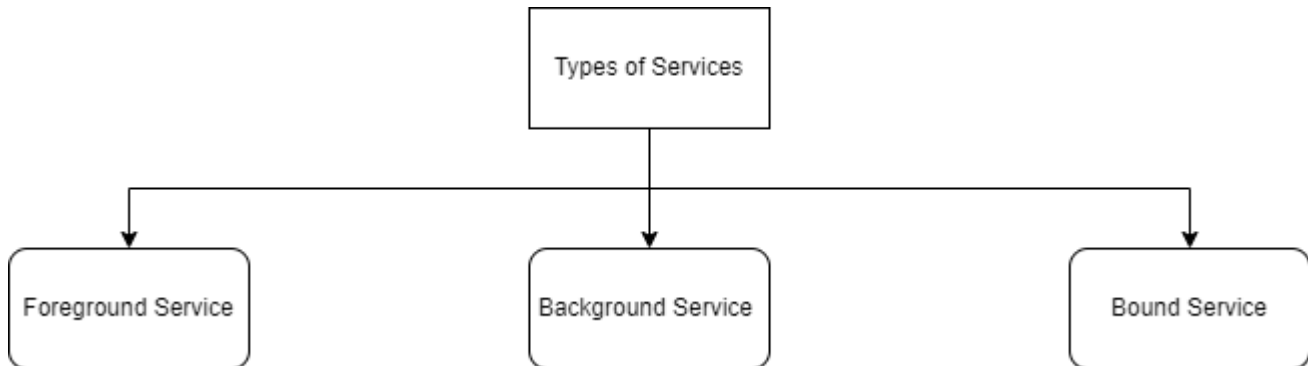
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What is Service?

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"
```

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```
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">
```

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```
<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" />
</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"
```

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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"
            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

```
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?) {
```

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```
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

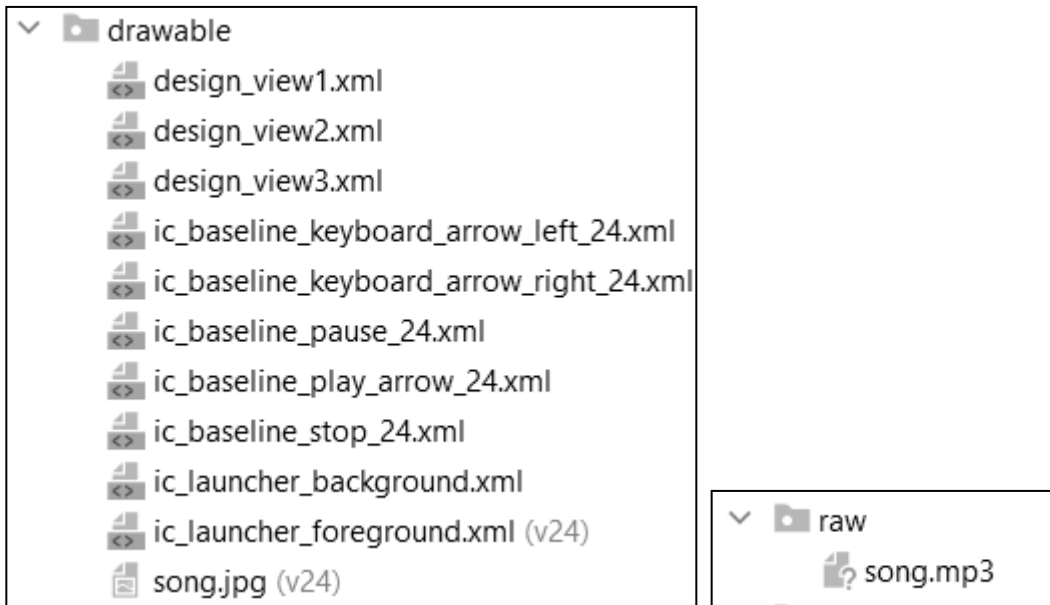
class MediaService : Service() {
    companion object{
        public final val DATA_KEY="service"
        public val DATA_VALUE="play/pause"
    }
    private lateinit var player: MediaPlayer
    override fun onBind(intent: Intent): IBinder {
        TODO("Return the communication channel to the service.")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

    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()
    }
}
```

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Resource:



Output:

