**Module -3) Android Fundamental**

• What is R.java file

Android R .java is a class that contain definitions for all the resources a specific application that you are building. Every resource that is used in you application will have its id in the android r .java file.

Suppose you drag a simple plain text view into the main screen of your main-activity.xml now this plain text view will have its resource id in the android R.java file. In the same if you look at the coding given below you will see resource ids for different components, such as icon, texts, themes etc.

R.java file is automatically generated by   **aapt(Android Asset Packaging Tool)**. User is not supposed to change this; you change this it will be erased as it is auto generated every time.

• What is activity and activity lifecycle

**What is Activity**

Whenever we open an Android application, then you see some UI drawn over our screen. That screen is called an Activity.

**Activity Lifecycle**

Example of Activity Lifecycle :-

package com.example.lifecycle  
  
import androidx.appcompat.app.AppCompatActivity  
import android.os.Bundle  
import android.widget.Toast  
  
class MainActivity : AppCompatActivity()

{  
 override fun onCreate(savedInstanceState: Bundle?)

{  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.activity\_main)  
  
 Toast.makeText(applicationContext,"On create",Toast.LENGTH\_LONG).show()  
 }  
  
 override fun onStart() {  
  
 Toast.makeText(applicationContext,"On Start",Toast.LENGTH\_LONG).show()  
 super.onStart()  
 }  
  
 override fun onResume() {  
  
 Toast.makeText(applicationContext,"On Resume",Toast.LENGTH\_LONG).show()  
 super.onResume()  
 }  
  
 override fun onPause() {  
  
 Toast.makeText(applicationContext,"On Pause",Toast.LENGTH\_LONG).show()  
 super.onPause()  
 }  
  
 override fun onStop() {  
  
 Toast.makeText(applicationContext,"On Stop",Toast.LENGTH\_LONG).show()  
 super.onStop()  
 }  
  
 override fun onRestart() {  
  
 Toast.makeText(applicationContext,"On Restart",Toast.LENGTH\_LONG).show()  
 super.onRestart()  
 }  
  
 override fun onDestroy() {  
  
 Toast.makeText(applicationContext,"On Destroy",Toast.LENGTH\_LONG).show()  
 super.onDestroy()  
 }

• What is fragment and fragment lifecycle

What is fragment

**Android Fragment** is the part of activity, it is also known as sub-activity. There can be more than one fragment in an activity. Fragments represent multiple screen inside one activity.

Fragment lifecycle

Android fragment lifecycle is affected by activity lifecycle because fragments are included in activity

Example of Fragment lifecycle:-

package com.example.myapplication3  
  
import android.content.Context  
import android.os.Bundle  
import androidx.fragment.app.Fragment  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.Toast  
  
  
class BlankFragment : Fragment() {  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 *arguments*?.*let* **{  
  
 }** }  
  
 override fun onCreateView(  
 inflater: LayoutInflater, container: ViewGroup?,  
 savedInstanceState: Bundle?  
 ): View? {  
 // Inflate the layout for this fragment  
 var view = inflater.inflate(R.layout.*fragment\_blank*, container, false)  
  
 Toast.makeText(*activity*,"crearte view",Toast.*LENGTH\_LONG*).show()  
  
 return view  
 }  
  
 override fun onAttach(context: Context) {  
 super.onAttach(context)  
  
 Toast.makeText(*activity*,"on Attach",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onViewCreated(view: View, savedInstanceState: Bundle?) {  
 super.onViewCreated(view, savedInstanceState)  
  
 Toast.makeText(*activity*,"onViewCreated",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onActivityCreated(savedInstanceState: Bundle?) {  
 super.onActivityCreated(savedInstanceState)  
  
 Toast.makeText(*activity*,"onActivityCreated",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onStart() {  
 super.onStart()  
  
 Toast.makeText(*activity*,"on Start",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onResume() {  
 super.onResume()  
  
 Toast.makeText(*activity*,"onResume",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onPause() {  
 super.onPause()  
  
 Toast.makeText(*activity*,"on Pause",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onStop() {  
 super.onStop()  
  
 Toast.makeText(*activity*,"on Stop",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onDestroyView() {  
 super.onDestroyView()  
  
 Toast.makeText(*activity*,"on DestoryView",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onDestroy() {  
 super.onDestroy()  
  
 Toast.makeText(*activity*,"on Destory",Toast.*LENGTH\_LONG*).show()  
 }  
  
 override fun onDetach() {  
 super.onDetach()  
  
 Toast.makeText(*activity*,"on Detach",Toast.*LENGTH\_LONG*).show()  
 }  
  
  
}

• Activity to fragment and fragment to activity

1. Activity to fragment

Activity\_main.xml

<LinearLayout  
 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"  
 android:orientation="horizontal"  
 android:layout\_weight="1"  
 tools:context=".MainActivity">  
  
  
 <fragment  
 android:id="@+id/frm1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 class="com.example.example.FirstFragment1"/>  
  
 <fragment  
 android:id="@+id/frm2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 class="com.example.example.SecondFragment"/>  
  
</LinearLayout>

Activity\_main2.xml

<LinearLayout  
 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"  
 android:orientation="vertical"  
 tools:context=".MainActivity2">

<Button  
 android:id="@+id/b2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Activity To Fragment"/>

<FrameLayout  
 android:id="@+id/fl"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"/>  
  
</LinearLayout>

Main\_activity2.kt

package com.example.example  
  
  
import android.content.Intent  
import android.os.Bundle  
import android.widget.Button  
import androidx.appcompat.app.AppCompatActivity  
import androidx.fragment.app.FragmentManager  
import androidx.fragment.app.FragmentTransaction  
import com.example.example.FirstFragment1 as FirstFragment1  
  
class MainActivity2 : AppCompatActivity()  
{

lateinit var b2 :Button  
lateinit var b3 :Button

override fun onCreate(savedInstanceState: Bundle?)  
{  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_main2*)

b2 = findViewById(R.id.*b2*)  
b3 = findViewById(R.id.*b3*)

b2.setOnClickListener **{** //A TO F  
  
 var f1 = FirstFragment1()  
 var fm : FragmentManager = *supportFragmentManager* var ft : FragmentTransaction = fm.beginTransaction()  
 ft.replace(R.id.*fl*,f1).commit()  
**}**

fragment to activity

firstFragment.xml

<?xml version="1.0" encoding="utf-8"?>  
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".FirstFragment1">  
  
 <!-- *TODO: Update blank fragment layout* -->  
 <TextView  
 android:id="@+id/txt1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:text="hello" />  
  
</FrameLayout>

FirstFragment.kt

package com.example.example  
  
import android.content.Intent  
import android.os.Bundle  
  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.TextView  
import androidx.fragment.app.Fragment  
import androidx.fragment.app.FragmentManager  
  
  
class FirstFragment1 : Fragment()  
{  
 lateinit var txt1 : TextView  
 override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?, savedInstanceState: Bundle?): View?  
 {  
 // Inflate the layout for this fragment  
 var view= inflater.inflate(R.layout.*fragment\_first*, container, false)  
  
 txt1 = view.findViewById(R.id.*txt1*)  
  
 txt1.setOnClickListener{  
  
 var i = Intent(*activity*,MainActivity::class.*java*)  
 startActivity(i)

}  
 return view  
  
}