

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

AIM:

To Develop an android application to create Two activity named as Student Basic Details (name, age, address) and Student Mark (Marks, Total, Grade, Status). Write an android code to combine these two activities in single screen using android fragment.

PROCEDURE:

Step 1: Go to File → New Project

Enter the name of your application and press “Next”.

Step 2: Choose the target Android platform

Select the minimum SDK version required for your app to run. Click “Next”.

Step 3: Select the type of activity

Pick the “Empty Activity” option (default choice) and click “Next”.

Step 4: Specify the name of the activity (e.g., MainActivity) and click “Finish” to create the project.

Step 5: Edit the app

- Add TabLayout and ViewPager2 in activity_main.xml.
- Create two fragments:
 - StudentBasicDetailsFragment (for name, age, address)
 - StudentMarkFragment (for marks, total, grade, status)
- Create layouts for both fragments.
- Use a FragmentAdapter to connect fragments to tabs.

Step 6: Execute the app using emulator or physical device.

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

CODE:

AndroidManifest.xml :

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.studenttabs">

    <application
        android:allowBackup="true"
        android:theme="@style/Theme.StudentTabs"
        android:label="@string/app_name">
        <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>
```

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

Activity_main.xml:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <com.google.android.material.tabs.TabLayout
        android:id="@+id/tabLayout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:tabMode="fixed"/>

    <androidx.viewpager2.widget.ViewPager2
        android:id="@+id/viewPager"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"/>

</LinearLayout>
```

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

MainActivity.kt :

```
package com.example.studenttabs
```

```
import android.os.Bundle
```

```
import androidx.appcompat.app.AppCompatActivity
```

```
import com.google.android.material.tabs.TabLayoutMediator
```

```
import androidx.viewpager2.widget.ViewPager2
```

```
class MainActivity : AppCompatActivity() {
```

```
    private lateinit var viewPager: ViewPager2
```

```
    private lateinit var adapter: StudentPagerAdapter
```

```
    override fun onCreate(savedInstanceState: Bundle?) {
```

```
        super.onCreate(savedInstanceState)
```

```
        setContentView(R.layout.activity_main)
```

```
        viewPager = findViewById(R.id.viewPager)
```

```
        adapter = StudentPagerAdapter(this)
```

```
        viewPager.adapter = adapter
```

```
        val tabLayout =
```

```
        findViewById<com.google.android.material.tabs.TabLayout>(R.id.tabLayout)
```

```
        TabLayoutMediator(tabLayout, viewPager) { tab, position ->
```

```
            tab.text = when (position) {
```

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

```
0 -> "Basic Details"
1 -> "Marks"
else -> ""

    }
    }.attach()
}
}
```

StudentPagerAdapter.kt :

```
package com.example.studenttabs
```

```
import androidx.fragment.app.Fragment
import androidx.fragment.app.FragmentActivity
import androidx.viewpager2.adapter.FragmentStateAdapter
```

```
class StudentPagerAdapter(fragmentActivity: FragmentActivity) :
    FragmentStateAdapter(fragmentActivity) {
```

```
    override fun getItemCount(): Int = 2
```

```
    override fun createFragment(position: Int): Fragment {
```

```
        return when (position) {
```

```
            0 -> StudentBasicDetailsFragment()
```

```
            1 -> StudentMarkFragment()
```

```
            else -> throw IllegalStateException("Invalid position")
```

```
        }
```

```
    }
```

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

```
}
```

StudentBasicDetailsFragment.kt :

```
package com.example.studenttabs
```

```
import android.os.Bundle
```

```
import android.view.LayoutInflater
```

```
import android.view.View
```

```
import android.view.ViewGroup
```

```
import androidx.fragment.app.Fragment
```

```
class StudentBasicDetailsFragment : Fragment() {
```

```
    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,  
savedInstanceState: Bundle?): View? {
```

```
        return inflater.inflate(R.layout.fragment_student_basic_details, container,  
false)
```

```
    }
```

```
}
```

StudentMarkFragment.kt :

```
package com.example.studenttabs
```

```
import android.os.Bundle
```

```
import android.view.LayoutInflater
```

```
import android.view.View
```

```
import android.view.ViewGroup
```

```
import androidx.fragment.app.Fragment
```

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

```
class StudentMarkFragment : Fragment() {  
    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,  
        savedInstanceState: Bundle?): View? {  
        return inflater.inflate(R.layout.fragment_student_mark, container, false)  
    }  
}
```

fragment_student_basic_details.xml :

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:orientation="vertical"  
    android:padding="16dp"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content">  
  
    <EditText android:hint="Enter Name" android:layout_width="match_parent"  
        android:layout_height="wrap_content"/>  
  
    <EditText android:hint="Enter Age" android:layout_width="match_parent"  
        android:layout_height="wrap_content"/>  
  
    <EditText android:hint="Enter Address"  
        android:layout_width="match_parent" android:layout_height="wrap_content"/>  
</LinearLayout>
```

fragment_student_mark.xml :

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:orientation="vertical"  
    android:padding="16dp"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content">
```

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-04 ANDROID FRAGMENTS

```
<EditText android:hint="Enter Marks" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
```

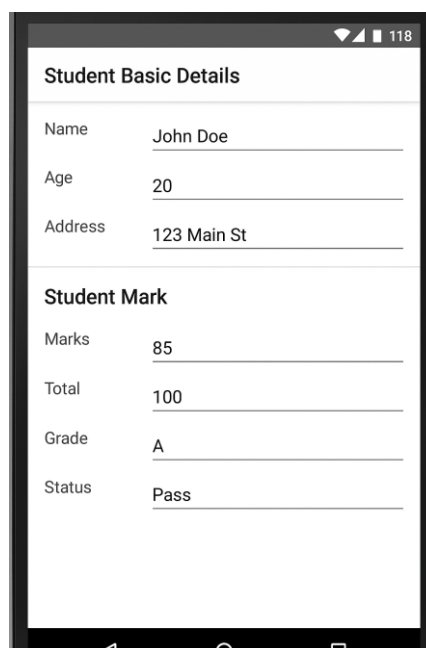
```
<EditText android:hint="Enter Total" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
```

```
<EditText android:hint="Enter Grade" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
```

```
<EditText android:hint="Enter Status" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
```

```
</LinearLayout>
```

OUTPUT IMAGE:



The screenshot displays a mobile application interface with two main sections: "Student Basic Details" and "Student Mark". The "Student Basic Details" section contains three input fields: "Name" with the value "John Doe", "Age" with the value "20", and "Address" with the value "123 Main St". The "Student Mark" section contains four input fields: "Marks" with the value "85", "Total" with the value "100", "Grade" with the value "A", and "Status" with the value "Pass". The interface is clean and uses a simple layout with labels and input fields.

Student Basic Details	
Name	John Doe
Age	20
Address	123 Main St

Student Mark	
Marks	85
Total	100
Grade	A
Status	Pass

RESULT:

The application has been successfully developed using Kotlin and android studio.