Ex. No. : 04 **Date: 04/05/2025**

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Android Fragments

Aim

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: Setting Up Your Environment

1. Install Android Studio: Ensure Android Studio is installed on your machine. If not, download it from the official Android Developer website.

2. Create a New Project: Open Android Studio, start a new project by selecting "New Project" > "Empty Activity". Name your project (e.g., "StudentDetailsApp"), choose Kotlin as the programming language, and select a suitable API level.

Step 2: Defining the Fragments

1. Create Fragment for Basic Details:

o Right-click on your package directory in the java (or kotlin) folder, select New > Fragment > Fragment (Blank), and name it StudentBasicDetailsFragment.

o Define the layout in the corresponding fragment_student_basic_details.xml file under res/layout. Include EditText views for input fields like Register No., Name, and Department.

2. Create Fragment for Mark Details:

o Similarly, create another Fragment named StudentMarkDetailsFragment.

o In fragment_student_mark_details.xml, include EditText views for SSLC, HSC, and UG marks.

Step 3: Designing the Activity Layout

1. Modify activity_main.xml: o Open the activity_main.xml file and replace the default layout with a layout that includes placeholders for your fragments. You can use FrameLayout or LinearLayout as containers.

Step 4: Combining Fragments in the Activity

1. Update MainActivity.kt:

o In MainActivity, within the onCreate method, use the FragmentManager to begin a transaction and add your fragments to the defined containers

Step 5: Running Your Application

1. Choose a Device: Select an Android device or an emulator.

2. Run the App: Click the "Run" button in Android Studio to build and run your application.
3. Test the Functionality: Your app should display a single screen with two sections, one for basic student details and the other for mark details.

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Exp4"
        tools:targetApi="31">
        <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>
```


Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <LinearLayout
        android:orientation="vertical"
        android:padding="20dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <TextView
            android:text="Student Basic Details"
            android:textSize="22sp"
            android:textStyle="bold"
            android:layout_marginBottom="10dp"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />

        <EditText
            android:id="@+id/editTextName"
            android:hint="Name"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>
```

```
<EditText
    android:id="@+id/editTextAge"
    android:hint="Age"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editTextAddress"
    android:hint="Address"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<View
    android:layout_width="match_parent"
    android:layout_height="2dp"
    android:background="#CCCCCC"
    android:layout_marginTop="20dp"
    android:layout_marginBottom="20dp"/>

<TextView
    android:text="Student Marks Details"
    android:textSize="22sp"
    android:textStyle="bold"
    android:layout_marginBottom="10dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" />
```


```
<EditText
    android:id="@+id/editTextMarks"
    android:hint="Marks"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editTextTotal"
    android:hint="Total"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editTextGrade"
    android:hint="Grade"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editTextStatus"
    android:hint="Status"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>
```

```
    <Button
        android:id="@+id/buttonSubmit"
        android:text="Submit"
        android:layout_marginTop="20dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"/>
    </LinearLayout>
</ScrollView>
```


MainActivity.kt

```
package com.example.exp_4

import android.os.Bundle
import android.widget.*
import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {
    private lateinit var editTextName: EditText
    private lateinit var editTextAge: EditText
    private lateinit var editTextAddress: EditText
    private lateinit var editTextMarks: EditText
    private lateinit var editTextTotal: EditText
    private lateinit var editTextGrade: EditText
    private lateinit var editTextStatus: EditText
    private lateinit var buttonSubmit: Button

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        editTextName = findViewById(R.id.editTextName)
        editTextAge = findViewById(R.id.editTextAge)
        editTextAddress = findViewById(R.id.editTextAddress)
        editTextMarks = findViewById(R.id.editTextMarks)
        editTextTotal = findViewById(R.id.editTextTotal)
```

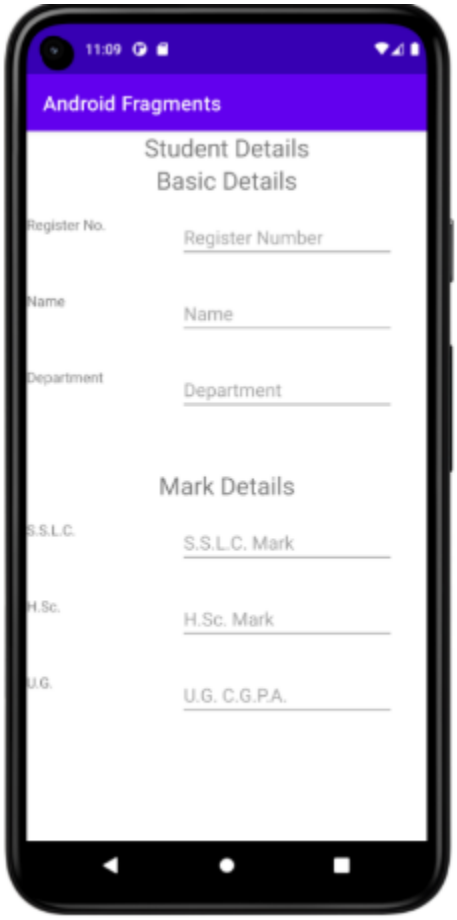
```
        editTextGrade = findViewById(R.id.editTextGrade)
        editTextStatus = findViewById(R.id.editTextStatus)
        buttonSubmit = findViewById(R.id.buttonSubmit)

        buttonSubmit.setOnClickListener {
            val name = editTextName.text.toString()
            val age = editTextAge.text.toString()
            val address = editTextAddress.text.toString()
            val marks = editTextMarks.text.toString()
            val total = editTextTotal.text.toString()
            val grade = editTextGrade.text.toString()
            val status = editTextStatus.text.toString()

            val message = """
                Name: $name
                Age: $age
                Address: $address
                Marks: $marks
                Total: $total
                Grade: $grade
                Status: $status
            """.trimIndent()

            Toast.makeText(this, message, Toast.LENGTH_LONG).show()
        }
    }
}
```


Output



Result:

The app displays Student Basic Details and Student Marks in two fragments on a single screen, allowing users to input and view the information seamlessly and it is verified successfully.