# PRACTICAL: 8

**AIM:** Create an application with the help of fragment.

## THEORY:

**Fragment:** A Fragment represents a behavior or a portion of user interface in a FragmentActivity. You can combine multiple fragments in a single activity to build a multi-pane UI and reuse a fragment in multiple activities. You can think of a fragment as a modular section of an activity, which has its own lifecycle, receives its own input events, and which you can add or remove while the activity is running.

**Tablayout:** TabLayout provides a horizontal layout to display tabs. Population of the tabs to display is done through TabLayout.Tab instances. You create tabs via newTab(). From there you can change the tab's label or icon via setText(int) and setIcon(int) respectively. To display the tab, you need to add it to the layout via one of the addTab(Tab) methods.

## CODE:

**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">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <com.google.android.material.tabs.TabLayout
        android:id="@+id/tabs"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.0"
        tools:layout_editor_absoluteX="0dp">
        <com.google.android.material.tabs.TabItem
            android:text="Prac1"
```

```
            android:layout_height="wrap_content"
            android:layout_width="wrap_content" />
        <com.google.android.material.tabs.TabItem
            android:text="Prac2"
            android:layout_height="wrap_content"
            android:layout_width="wrap_content" />
        <com.google.android.material.tabs.TabItem
            android:text="Prac3"
            android:layout_height="wrap_content"
            android:layout_width="wrap_content" />
        <com.google.android.material.tabs.TabItem
            android:text="Prac4"
            android:layout_height="wrap_content"
            android:layout_width="wrap_content" />
    </com.google.android.material.tabs.TabLayout>

    <androidx.viewpager.widget.ViewPager
        android:id="@+id/viewpager"
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <com.google.android.material.tabs.TabLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="top" />

    </androidx.viewpager.widget.ViewPager>

</androidx.constraintlayout.widget.ConstraintLayout>
```

**MainActivity.java**

```
package com.example.pr8_17it005;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.viewpager.widget.ViewPager;
import com.google.android.material.tabs.TabLayout;

public class MainActivity extends AppCompatActivity {
    TabLayout tabLayout;
    ViewPager viewPager;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tabLayout = findViewById(R.id.tabs);
        viewPager = findViewById(R.id.viewpager);
        final MyAdapter adapter = new MyAdapter(this,getSupportFragmentManager(),
tabLayout.getTabCount());
        viewPager.setAdapter(adapter);
        viewPager.addOnPageChangeListener(new
TabLayout.TabLayoutOnPageChangeListener(tabLayout));
```

```
        tabLayout.addOnTabSelectedListener(new TabLayout.OnTabSelectedListener() {
            @Override
            public void onTabSelected(TabLayout.Tab tab) {
                viewPager.setCurrentItem(tab.getPosition());
            }

            @Override
            public void onTabUnselected(TabLayout.Tab tab) {

            }

            @Override
            public void onTabReselected(TabLayout.Tab tab) {

            }

        });
    }
}
```

**MyAdapter.java**

```
package com.example.pr8_17it005;
import android.content.Context;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentPagerAdapter;

public class MyAdapter extends FragmentPagerAdapter {
    private Context myContext;
    int totalTabs;
    public MyAdapter(Context context, FragmentManager fm, int totalTabs) {
        super(fm);
        myContext = context;
        this.totalTabs = totalTabs;
    }
    @Override
    public Fragment getItem(int position) {
        switch (position) {
            case 0:
                Prac1 prac1 = new Prac1();
                return prac1;
            case 1:
                prac2 prac2 = new prac2();
                return prac2;
            case 2:
                Prac3 prac3 = new Prac3();
                return prac3;

            case 3:
                prac4 prac4 = new prac4();
                return prac4;
```

```
            default:
                return null;
        }
    }

    @Override
    public int getCount() {
        return totalTabs;
    }
}
```

**fragment_prac1.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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=".Prac1">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/prac1" />
</FrameLayout>
```

**Prac1.java**

```
package com.example.pr8_17it005;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Prac1 extends Fragment {
    public Prac1() {
        // Required empty public constructor
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_prac1, container, false);
    }
}
```

**fragment_prac2.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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=".prac2">

    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/prac2" />

</FrameLayout>
```

**Prac2.java**

```
package com.example.pr8_17it005;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class prac2 extends Fragment {
    public prac2() {
        // Required empty public constructor
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_prac2, container, false);
    }
}
```

**fragment_prac3.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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=".Prac3">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/prac3" />
</FrameLayout>
```

**Prac3.java**

```
package com.example.pr8_17it005;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
```

```
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Prac3 extends Fragment {
    public Prac3() {
        // Required empty public constructor
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_prac3, container, false);
    }
}
```

**fragment_prac4.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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=".prac4">

    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/prac4" />

</FrameLayout>
```

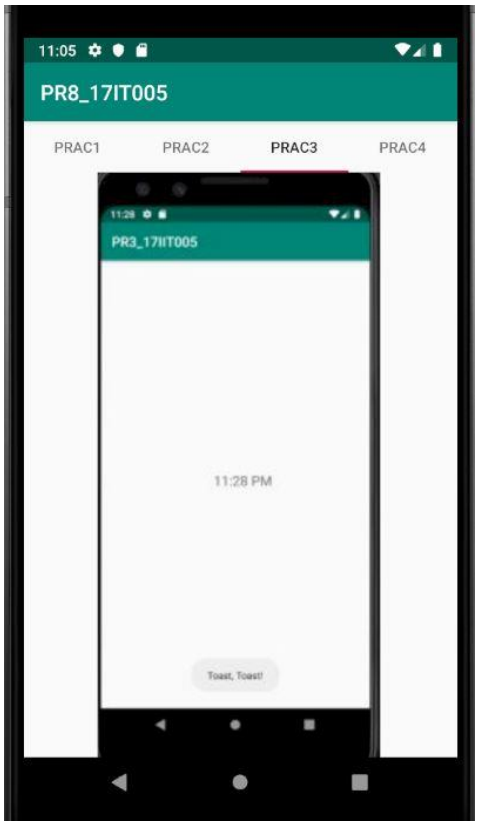
**Prac4.java**

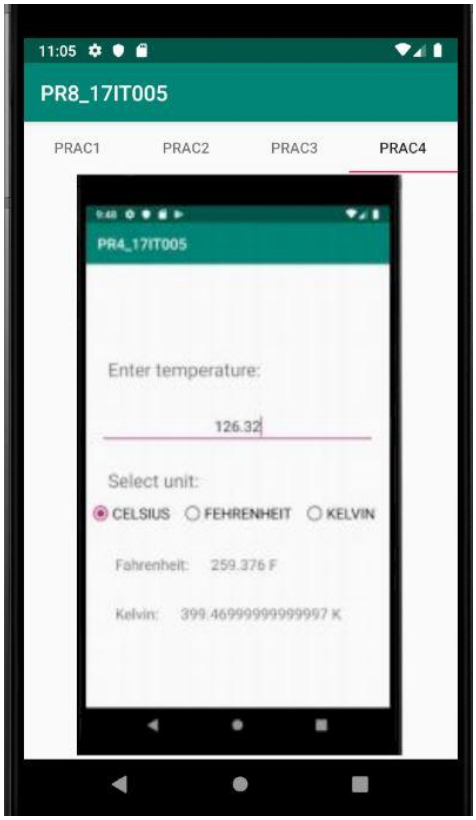
```
package com.example.pr8_17it005;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class prac4 extends Fragment {
    public prac4() {
        // Required empty public constructor
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_prac4, container, false);
    }}
```

# OUTPUT:


11:04
PR8_17IT005
PRAC1
PRAC2
PRAC3
PRAC4
My Application
Hello 17IT005!


11:05
PR8_17IT005
PRAC1
PRAC2
PRAC3
PRAC4
Sum
14
23
ADD


11:05
PR8_17IT005
PRAC1
PRAC2
PRAC3
PRAC4
PR3_17IT005
11:28 PM


11:05
PR8_17IT005
PRAC1
PRAC2
PRAC3
PRAC4
PR4_17IT005
Enter temperature:
126.32
Select unit:
CELSIUS
FEHRENHEIT
KELVIN
Fahrenheit: 259.376 F
Kelvin: 399.46999999999997 K

## LATEST APPLICATIONS:

The best application of tablayout and fragment is used in playstore in android and Appstore in ios. It is a very basic element, used in many games and general applications. Even in phone, message, calendar, clock, YouTube, Xender, etc.

## LEARNING OUTCOME:

We learned to create a tablayout with different fragments in it with a imageview in each fragment. We created the tablayout using ‘com.google.android.material.tabs.TabLayout’ class, as many of the dependencies have been depreciated for compatibility in higher versions.