LAB#07

INTRODUCTION TO FRAGMENT

Fragment

A fragment is a controller object that an activity can deputize to perform tasks. Most commonly, the task is managing a UI. The UI can be an entire screen or just one part of the screen. A fragment managing a UI is known as a UI fragment. A UI fragment has a view of its own that is inflated from a layout file. The fragment's view contains the interesting UI elements that the user wants to see and interact with.

Create First Fragments

```
<?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=".Fragmentone"
android:background="@android:color/holo_green_light"
  >
<TextView
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:text="Fragment one" />
</FrameLayout>
```

Create Second Fragment

```
<?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=".Fragmenttwo"   android:background="@android:color/holo_orange_light"
    >
<TextView android:layout_width="match_parent"
  android:layout_height="match_parent"
android:text="Fragment Two" />
</FrameLayout>
```

Create Activity:

```
<?xml version="1.0" encoding="utf-8"?>
<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"
    tools:context=".MainActivity"
    android:orientation="vertical"
    >
    <Button
   android:layout_width="match_parent"
   android:layout_height="50dp“
 android:layout_margin="10dp“
   android:id="@+id/fr1“
  android:gravity="center“
  android:textSize="20dp“
android:textColor="#fff“
 android:background="#e11010“
android:onClick="changefrag“
   android:textStyle="bold“
android:text="Fragment 1" />
  <Button
        android:layout_width="match_parent"
        android:layout_height="50dp"
        android:id="@+id/fr2"
        android:layout_margin="10dp"
        android:gravity="center"
        android:textSize="20dp"
        android:onClick="changefrag2"
        android:textColor="#fff"
        android:background="#1010e1"
        android:textStyle="bold"
        android:text="Fragment 2"/>
    <FrameLayout
        android:layout_width="match_parent“
      android:layout_height="match_parent"
android:id="@+id/frame_container“
  android:layout_margin="15dp"/>
```

```
</LinearLayout>
```

- Add the methods to call Fragments

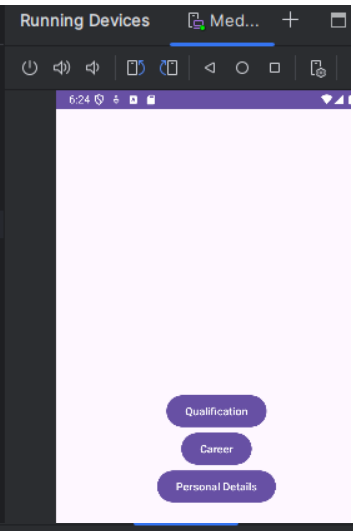
```
public void changefrag(View view)
   {
      Fragment fragment = null;
      fragment = new Fragmentone();
      FragmentManager manager = getSupportFragmentManager();
      FragmentTransaction transaction = manager.beginTransaction();
      transaction.replace(R.id.frame_container, fragment);
      transaction.commit();
   }
   public void changefrag2(View view)
{
   Fragment fragment = null;
   fragment = new Fragmenttwo();
   FragmentManager manager = getSupportFragmentManager();
   FragmentTransaction transaction = manager.beginTransaction();
   transaction.replace(R.id.frame_container, fragment);
   transaction.commit();
}
```

Lab Task:

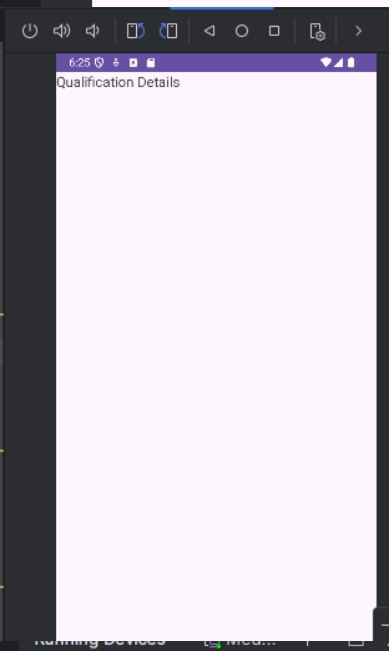
1) Create two fragments, the first fragment show three button group named as qualification, career and personal details while the second fragment show the output according button's clicked respectively.

activity_main.xml | fragment_first.xml | fragment_second.xml

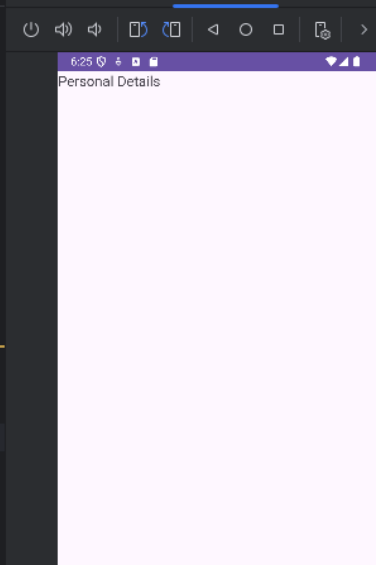
```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.fragment.app.FragmentContainerView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/fragmentContainerView"
    android:layout_width="match_parent"
    android:layout_height="match_parent" />
```




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

    <Button
        android:id="@+id/btnQualification"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Qualification" />

    <Button
        android:id="@+id/btnCareer"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Career" />

    <Button
        android:id="@+id/btnPersonalDetails"
        android:layout_width="wrap_content"
```




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

    <TextView
        android:id="@+id/tvOutput"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Output will be shown here"
        android:textSize="18sp"
        android:gravity="center"/>
</FrameLayout>
```



```java
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGro
        View view = inflater.inflate(R.layout.fragment_first, container, attachT

        Button btnQualification = view.findViewById(R.id.btnQualification);
        Button btnCareer = view.findViewById(R.id.btnCareer);
        Button btnPersonalDetails = view.findViewById(R.id.btnPersonalDetails);

        btnQualification.setOnClickListener(v -> navigateToSecondFragment("Quali
        btnCareer.setOnClickListener(v -> navigateToSecondFragment("Career Detai
        btnPersonalDetails.setOnClickListener(v -> navigateToSecondFragment("Per

        return view;
    }

    3 usages
    private void navigateToSecondFragment(String messa
        Bundle bundle = new Bundle();
        bundle.putString("key", message);

        SecondFragment secondFragment = new SecondFragment();
        secondFragment.setArguments(bundle);
```

```
© com.example.fragmente
private void navigateTo
    String message
)
FragmentExmaple.app.ma
```

```java
public class SecondFragment extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bun
        View view = inflater.inflate(R.layout.fragment_second, container, attachToRoot: false);

        TextView tvOutput = view.findViewById(R.id.tvOutput);
        Bundle bundle = getArguments();

        if (bundle != null) {
            String message = bundle.getString( key: "key", defaultValue: "No data received");
            tvOutput.setText(message);
        }

        return view;
    }
}
```

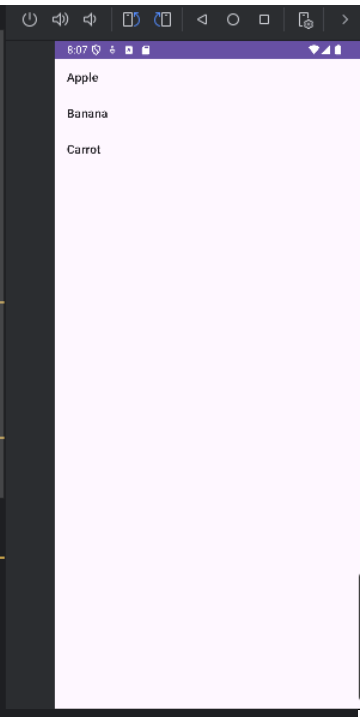
```
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Load the com.example.fragmentexmaple.FirstFragment when the app starts
        if (savedInstanceState == null) {
            getSupportFragmentManager().beginTransaction()
                    .replace(R.id.fragmentContainerView, new FirstFragment())
                    .commit();
        }
    }
}
```

2) Maintain grocery items list with details of individual items fragment page in single activity.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.fragment.app.FragmentContainerView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/fragmentContainerView"
    android:layout_width="match_parent"
    android:layout_height="match_parent" />
```

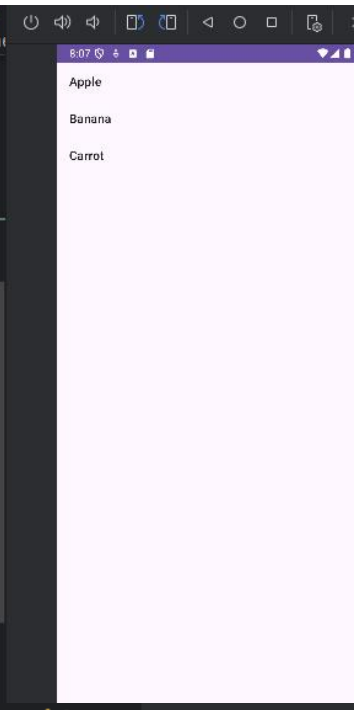
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</LinearLayout>
```

```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:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:padding="16dp">

        <TextView
            android:id="@+id/tvItemName"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Item Name"
            android:textSize="20sp"
            android:textStyle="bold" />

        <TextView
            android:id="@+id/tvItemDescription"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Description"
            android:layout_marginTop="8dp" />
```




```java
package com.example.grocerylistapp;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        if (savedInstanceState == null) {
            getSupportFragmentManager().beginTransaction()
                    .replace(R.id.fragmentContainerView, new GroceryListFragment())
                    .commit();
        }
    }
}
```

```java
public class GroceryListFragment extends Fragment {
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup containe
        RecyclerView recyclerView = view.findViewById(R.id.recyclerView);
        recyclerView.setLayoutManager(new LinearLayoutManager(getContext()));

        List<String> groceryItems = new ArrayList<>();
        groceryItems.add("Apple");
        groceryItems.add("Banana");
        groceryItems.add("Carrot");

        GroceryAdapter adapter = new GroceryAdapter(groceryItems, this::showItemDetails);
        recyclerView.setAdapter(adapter);

        return view;
    }

    1 usage
    private void showItemDetails(String itemName) {
        Bundle bundle = new Bundle();
        bundle.putString("itemName", itemName);

        ItemDetailsFragment detailsFragment = new ItemDetailsFragment();
        detailsFragment.setArguments(bundle);

        requireActivity().getSupportFragmentManager() FragmentManager
                .beginTransaction() FragmentTransaction
```




```java
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class ItemDetailsFragment extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup containe
        View view = inflater.inflate(R.layout.fragment_item_details, container, attachToRoot

        TextView tvItemName = view.findViewById(R.id.tvItemName);
        TextView tvItemDescription = view.findViewById(R.id.tvItemDescription);
        TextView tvItemPrice = view.findViewById(R.id.tvItemPrice);

        Bundle bundle = getArguments();
        if (bundle != null) {
            String itemName = bundle.getString( key: "itemName");
            tvItemName.setText(itemName);
            tvItemDescription.setText("This is a description of " + itemName);
            tvItemPrice.setText("$10.00");
        }
```

```java
public class GroceryAdapter extends RecyclerView.Adapter<GroceryAdapter.ViewHolder> {

    3 usages
    private final List<String> items;
    2 usages
    private final ItemClickListener listener;

    no usages
    public GroceryAdapter(List<String> items, ItemClickListener listener) {
        this.items = items;
        this.listener = listener;
    }

    @NonNull
    @Override
    public ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View view = LayoutInflater.from(parent.getContext()).inflate(android.R.layout.sim
        return new ViewHolder(view);
    }

    @Override
    public void onBindViewHolder(@NonNull ViewHolder holder, int position) {
        String item = items.get(position);
        holder.textView.setText(item);
@Override
public int getItemCount() {
    return items.size();
}


4 usages
static class ViewHolder extends RecyclerView.ViewHolder {
    2 usages
    TextView textView;


    1 usage
    ViewHolder(View itemView) {
        super(itemView);
        textView = itemView.findViewById(android.R.id.text1);
    }
}


2 usages
public interface ItemClickListener {
    1 usage
    void onItemClick(String item);
}
```