ROYAL UNIVERSITY OF BHUTAN
COLLEGE OF SCIENCE AND TECHNOLOGY
PHUENTSHOLING: BHUTAN

PLAGIARISM DECLARATION FORM

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Student No: 02200174 ....

Module No and Title of the module: CTE306 - Mobile Application Development
Assignment no and Title of the Assignment: Lab Wok 05

Section H2 of the Royal University of Bhutan's *Wheel of Academic Law* provides the following definition of academic dishonesty:

"Academic dishonesty may be defined as any attempt by a student to gain an unfair advantage in any assessment. It may be demonstrated by one of the following:

Collusion: the representation of a piece of unauthorized group work as the work of a single candidate.

Commissioning: submitting an assignment done by another person as the student's own work.

Duplication: the inclusion in coursework of material identical or substantially similar to material which has already been submitted for any other assessment within the University.

False declaration: making a false declaration in order to receive special consideration by an Examination Board or to obtain extensions to deadlines or exemption from work.

Falsification of data: presentation of data in laboratory reports, projects, etc., based on work purported to have been carried out by the student, which have been invented, altered or copied by the student.

Plagiarism: the unacknowledged use of another's work as if it were one's own.

Examples are:
- verbatim copying of another's work without acknowledgement
- paraphrasing of another's work by simply changing a few words or altering the order of presentation, without acknowledgement
- ideas or intellectual data in any form presented as one's own without acknowledging the source(s)
- making significant use of unattributed digital images such as graphs, tables, photographs, etc. taken from test books, articles, films, plays, handouts, internet, or any other source, whether published or unpublished
- submission of a piece of work which has previously been assessed for a different award or module or at a different institution as if it were new work
- use of any material without prior permission of copyright from appropriate authority or owner of the materials used"

Student Declaration

I confirm that I have read and understood the above definitions of academic dishonesty. I declare that I have not committed any academic dishonesty when completing the attached piece of work.

Signature of Student: *ivyash Chhetri*   Date: 6 Sept 2022

Lab 05

CTE306 – Mobile Application Development

Date – 1st September 2022

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College of Science and Technology

Aim

To Design UI/UX Using Adaptive Layout and implement Fragments and RecyclerView

Theory

The card view is one of the views that we must incorporate in our design. A new Android widget called CardView can be utilized to show any kind of data by giving it rounded sides and a specified elevation. A view called CardView enables many views to be stacked on top of one another. The main goal of CardView is to help the UI design feel and appear better. There are several Android applications that have this widget. You may use a CardView to add items to a listview or a recycler view. The fact that CardView extends Framelayout and can be viewed on all Android platforms is its greatest feature.

The Floating Action Button (FAB) is a frequently used user interface element in Android apps. It is a feature that resembles a circling symbol hovering above the user interface and helps users to draw attention to key components of your software. FAB draws attention to the most significant or typical tasks.

When an item scrolls off the screen, RecyclerView does not remove the item's view. On the other hand, RecyclerView makes use of the view for new objects that have scrolled across the screen. The software's performance, responsiveness, and energy use all significantly rise as a result of this recycle view.

Similar to the ListView, the RecyclerView is intended to offer listing features. But as this is done in a way that is performance-friendly. This perspective's name contains the word "Recycler" on purpose. The items that the RecyclerView is currently working with can be recycled.

A fragment in a FragmentActivity is an element of the User Interface. A fragment may be utilized in several activities, and various fragments may be combined into one action. Because we want this recycler view page to be able to slide to another page at the conclusion, we utilize this fragment.

Adaptive Layout

Program Code

activity_main.xml

```xml
<?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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="51dp"
        android:fontFamily="sans-serif-medium"
        android:text="@string/digital_menu"
        android:textAlignment="center"
        android:textColor="#3949AB"
        android:textSize="30sp" />

    <androidx.cardview.widget.CardView
        android:id="@+id/card_view1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="15dp"
        app:cardBackgroundColor="#FBF2F2"
        app:cardCornerRadius="8dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="horizontal">

            <ImageView
                android:id="@+id/imageView1"
                android:layout_width="5dp"
                android:layout_height="52dp"
                android:layout_margin="10dp"
                android:layout_weight="1"
                android:contentDescription="@string/todo"
                android:src="@drawable/image1" />
```

```xml
        <androidx.appcompat.widget.AppCompatButton
            android:id="@+id/button1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:background="@drawable/gradient"
            android:text="@string/title"
            android:textColor="#000000"
            android:textSize="14sp"
            android:textStyle="bold"

tools:ignore="DuplicateSpeakableTextCheck,TextContrastCheck" />
        </LinearLayout>
    </androidx.cardview.widget.CardView>

    <androidx.cardview.widget.CardView
        android:id="@+id/card_view2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="15dp"
        app:cardBackgroundColor="#FFFBF2F2"
        app:cardCornerRadius="8dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="horizontal">

            <ImageView
                android:id="@+id/imageView2"
                android:layout_width="5dp"
                android:layout_height="52dp"
                android:layout_margin="10dp"
                android:layout_weight="1"
                android:contentDescription="@string/todo"
                android:src="@drawable/image2" />

            <androidx.appcompat.widget.AppCompatButton
                android:id="@+id/button2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_margin="10dp"
                android:layout_weight="1"
```

```xml
                android:background="@drawable/gradient"
                android:text="@string/title"
                android:textColor="#000000"
                android:textSize="14sp"
                android:textStyle="bold"
                tools:ignore="TextContrastCheck" />
        </LinearLayout>
    </androidx.cardview.widget.CardView>

    <androidx.cardview.widget.CardView
        android:id="@+id/card_view3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="15dp"
        app:cardBackgroundColor="#FFFBF2F2"
        app:cardCornerRadius="8dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="horizontal">

            <ImageView
                android:id="@+id/imageView3"
                android:layout_width="5dp"
                android:layout_height="52dp"
                android:layout_margin="10dp"
                android:layout_weight="1"
                android:contentDescription="@string/todo"
                android:src="@drawable/image3"
                tools:ignore="ContentDescription,ImageContrastCheck" />

            <androidx.appcompat.widget.AppCompatButton
                android:id="@+id/button3"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_margin="10dp"
                android:layout_weight="1"
                android:background="@drawable/gradient"
                android:text="@string/title"
                android:textColor="#000000"
                android:textSize="14sp"
                android:textStyle="bold"
                tools:ignore="TextContrastCheck" />
        </LinearLayout>
```

```xml
        </androidx.cardview.widget.CardView>

        <androidx.cardview.widget.CardView
            android:id="@+id/card_view4"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:layout_margin="15dp"

            app:cardBackgroundColor="#FFFBF2F2"
            app:cardCornerRadius="8dp">

            <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal">

                <ImageView
                    android:id="@+id/imageView4"
                    android:layout_width="5dp"
                    android:layout_height="52dp"
                    android:layout_margin="10dp"
                    android:layout_weight="1"
                    android:contentDescription="@string/todo"
                    android:src="@drawable/image4"
                    tools:ignore="ContentDescription,ImageContrastCheck" />

                <androidx.appcompat.widget.AppCompatButton
                    android:id="@+id/button4"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:layout_margin="10dp"
                    android:layout_weight="1"
                    android:background="@drawable/gradient"
                    android:text="@string/title"
                    android:textColor="#000000"
                    android:textSize="14sp"
                    android:textStyle="bold"
                    tools:ignore="TextContrastCheck" />
            </LinearLayout>
        </androidx.cardview.widget.CardView>
    </LinearLayout>
```

MainActivity.java

```java
package com.example.cardlayout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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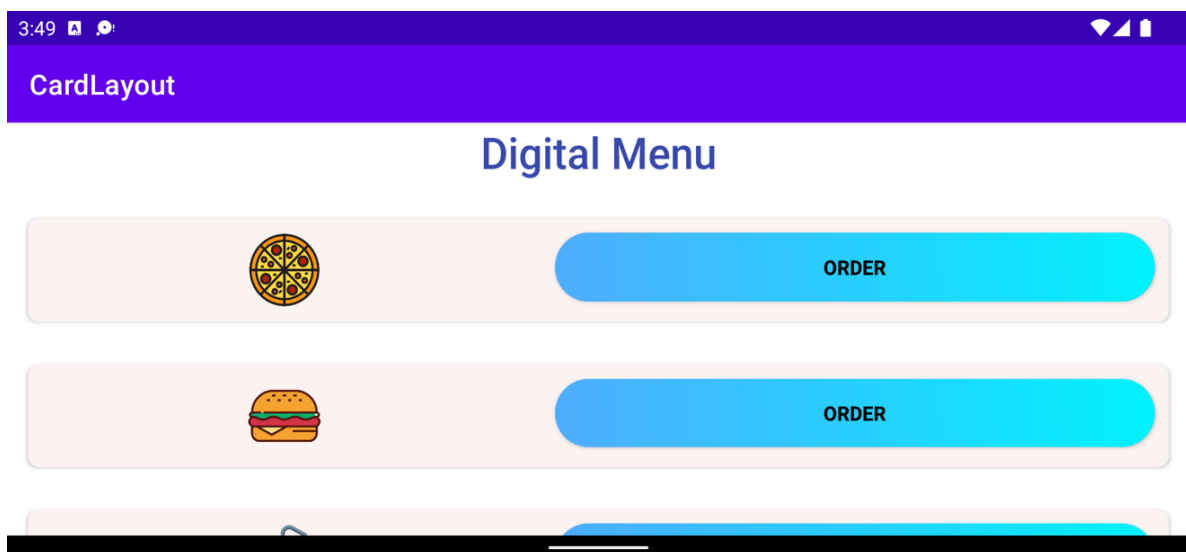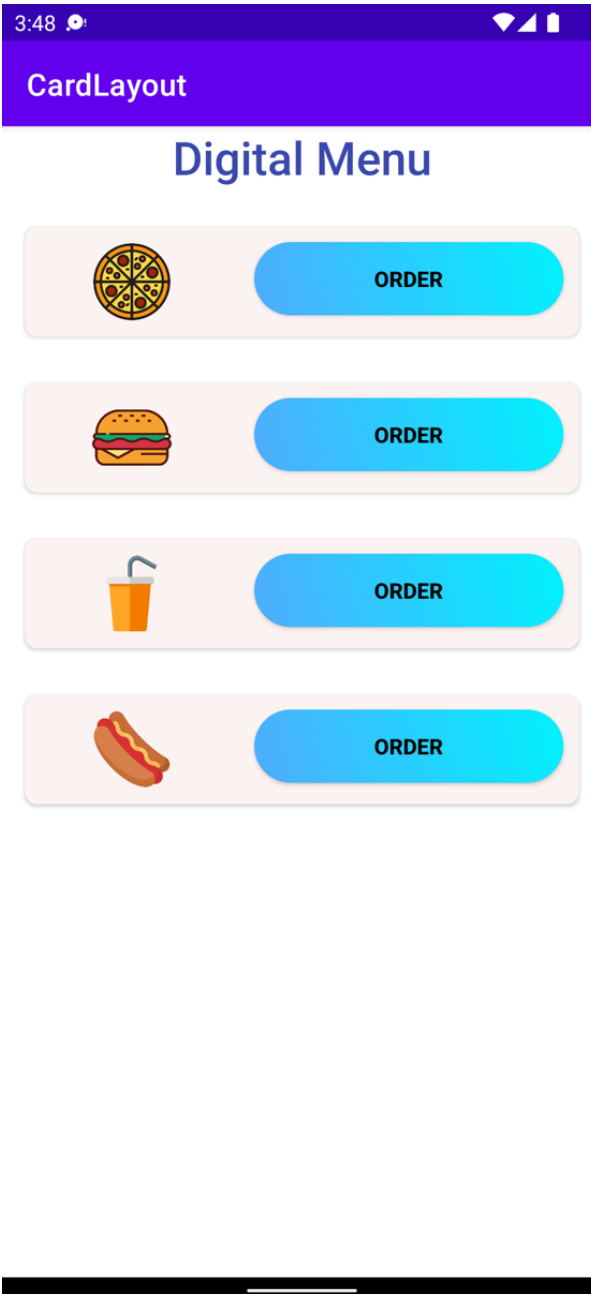
Output

CardLayout

Digital Menu

🍕	**ORDER**

🍔	**ORDER**

🥤	**ORDER**

🌭	**ORDER**

Registration Form

Program Codes

MainActivity.java

```java
package com.example.registrationform;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener{

    Spinner dzongkhagSpinner, countrySpinner;

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

        dzongkhagSpinner = findViewById(R.id.dzo_spinner);
        dzongkhagSpinner.setOnItemSelectedListener(this);

        countrySpinner = findViewById(R.id.country_spinner);
        countrySpinner.setOnItemSelectedListener(this);
    }

    public void showAlert(View view){
        AlertDialog.Builder alert = new AlertDialog.Builder(this);
        alert.setTitle("Help Service");
        alert.setMessage("Do you need any help?");
        alert.setPositiveButton("yes", new
DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Toast.makeText(MainActivity.this, "Please, Contact:
17358766", Toast.LENGTH_SHORT).show();
            }
        });
```

```java
        alert.setNegativeButton("No", new DialogInterface.OnClickListener()
{
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Toast.makeText(MainActivity.this, "Okay, proceed with the
form", Toast.LENGTH_SHORT).show();
            }
        });
        alert.create().show();

    }

    @Override
    public void onItemSelected(AdapterView<?> adapterView, View view, int
i, long l) {

    }

    @Override
    public void onNothingSelected(AdapterView<?> adapterView) {

    }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<ScrollView 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">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20sp"
        android:orientation="vertical">

        <TextView
            android:id="@+id/header_text"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
```

```xml
        android:layout_marginTop="10dp"
        android:text="@string/app_name"
        android:textAlignment="center"
        android:textColor="#000000"
        android:textSize="30sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/name_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="50sp"
        android:hint="@string/enter_name"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="40sp"
        android:layout_marginTop="30sp"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/gender_label"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="5sp"
            android:layout_marginEnd="30sp"
            android:layout_weight="1"
            android:text="@string/gender"
            android:textAlignment="center"
            android:textColor="#000000"
            android:textSize="20sp" />

        <RadioGroup
            android:id="@+id/radio_group"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="2"
            android:orientation="horizontal">

            <RadioButton
                android:id="@+id/male_btn"
                android:layout_width="99dp"
                android:layout_height="match_parent"
                android:text="@string/male"
                android:textColor="#000000"
                android:textSize="18sp"
```

```xml
                    tools:ignore="TouchTargetSizeCheck" />

            <RadioButton
                android:id="@+id/female_btn"
                android:layout_width="114dp"
                android:layout_height="match_parent"
                android:text="@string/female"
                android:textColor="#000000"
                android:textSize="18sp"
                tools:ignore="TouchTargetSizeCheck" />
        </RadioGroup>
</LinearLayout>

<EditText
        android:id="@+id/phone_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30sp"
        android:hint="@string/enter_phone_number"/>

<EditText
        android:id="@+id/email_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30sp"
        android:hint="@string/enter_email_address"/>

<LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="40sp"
        android:layout_marginTop="30sp"
        android:orientation="horizontal">

    <TextView
        android:id="@+id/married_label"
        android:layout_width="95dp"
        android:layout_height="wrap_content"
        android:layout_marginEnd="40sp"
        android:layout_weight="1"
        android:text="@string/married"
        android:textAlignment="center"
        android:textColor="#000000"
        android:textSize="20sp" />

    <ToggleButton
        android:id="@+id/toggleButton"
```

```xml
        android:layout_width="105dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="#7986CB"
        android:textColor="#000000"
        android:textOff="@string/yes"
        android:textOn="@string/no"
        android:textSize="18sp"
        android:textStyle="bold"
        tools:ignore="TouchTargetSizeCheck" />
</LinearLayout>

<TextView
    android:id="@+id/qualification_label"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="30sp"
    android:layout_weight="1"
    android:text="@string/qualification"
    android:textAlignment="center"
    android:textColor="#000000"
    android:textSize="20sp" />

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="40sp"
    android:layout_marginTop="15sp"
    android:orientation="horizontal">


    <CheckBox
        android:id="@+id/std"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="@string/student"
        tools:ignore="TouchTargetSizeCheck" />

    <CheckBox
        android:id="@+id/grad"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="@string/graduate"
        tools:ignore="TouchTargetSizeCheck" />
```

```xml
        <CheckBox
            android:id="@+id/undergrad"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="@string/under_graduate"
            tools:ignore="TouchTargetSizeCheck" />

    </LinearLayout>

    <TextView
        android:id="@+id/address_label"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="30sp"
        android:layout_weight="1"
        android:text="@string/address"
        android:textAlignment="center"
        android:textColor="#000000"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/gewog_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10sp"
        android:hint="@string/enter_gewog"/>

    <Spinner
        android:id="@+id/dzo_spinner"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:layout_marginTop="10dp"
        android:layout_weight="1"
        android:ems="10"
        android:entries="@array/dzongkhag"
        android:minHeight="48dp"
        android:text="@string/dzongkhag" />

    <Spinner
        android:id="@+id/country_spinner"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:layout_marginTop="10dp"
        android:layout_weight="1"
        android:ems="10"
```

```xml
            android:entries="@array/Country"
            android:minHeight="48dp"
            android:text="@string/country" />

        <Button
            android:layout_marginTop="50dp"
            android:layout_marginStart="125dp"
            android:layout_marginBottom="40dp"
            android:id="@+id/submit_button"
            android:layout_width="125dp"
            android:layout_height="wrap_content"
            android:backgroundTint="#1565C0"
            android:text="@string/submit" />


<com.google.android.material.floatingactionbutton.FloatingActionButton
            android:id="@+id/floatingActionButton"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="300dp"
            android:layout_marginBottom="40dp"
            android:clickable="true"
            android:onClick="showAlert"
            app:backgroundTint="#90CAF9"
            app:srcCompat="@drawable/help" />

    </LinearLayout>

</ScrollView>
```
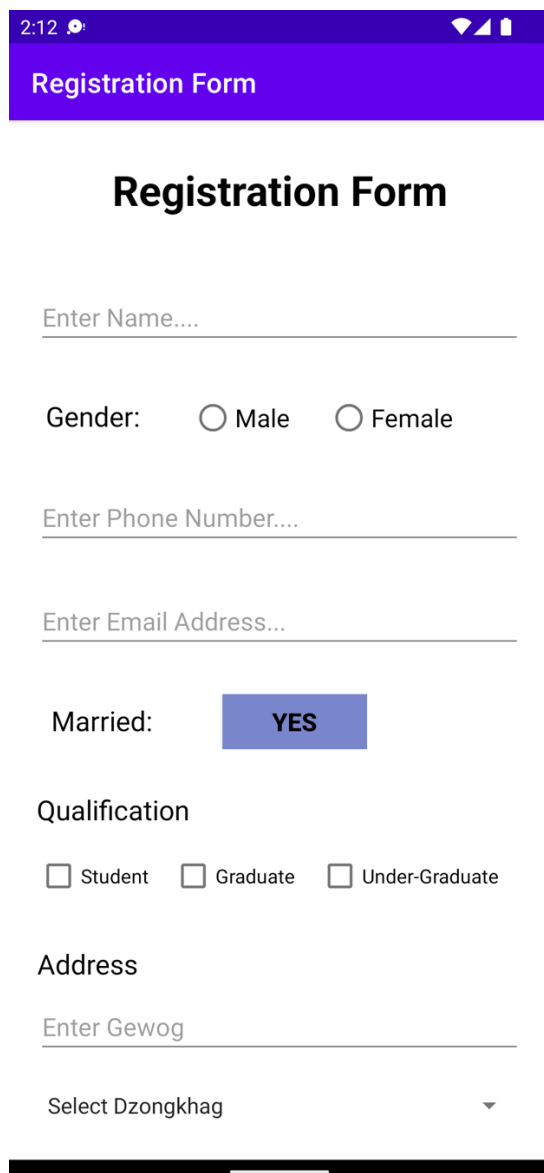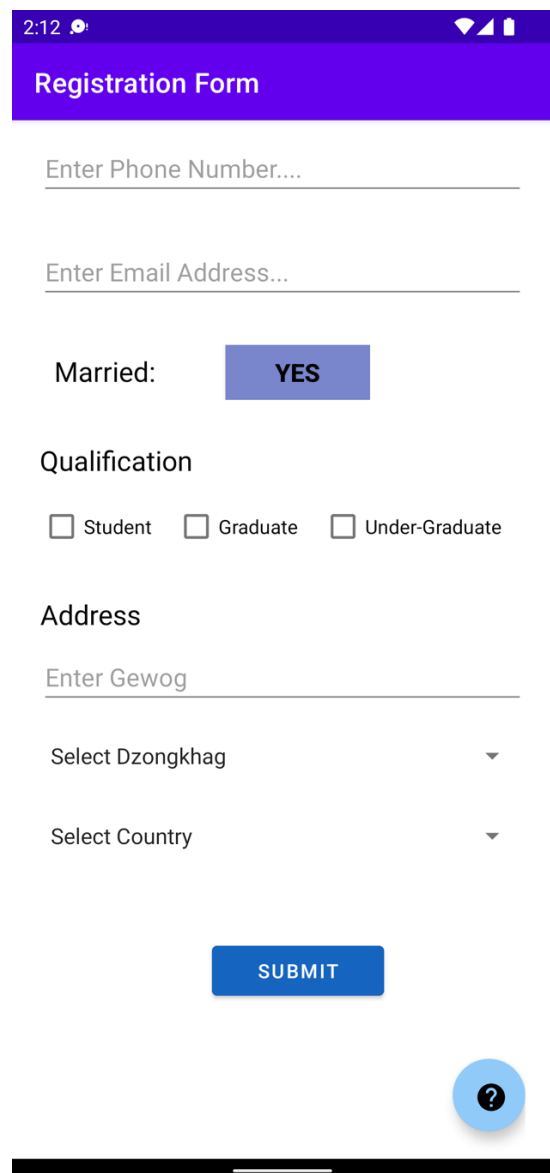
Output

Recycle View

Program Code

MainActivity.java

```java
package com.example.recycleview;

import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    RecyclerView recyclerView;
    RecyclerAdapter recyclerAdapter;

    String dayNames[] = {"Monday", "Tuesday", "Wednesday", "Thursday",
"Friday", "Saturday"};

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

        recyclerView = findViewById(R.id.recycler_view);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));
        recyclerAdapter = new RecyclerAdapter(this,dayNames);
        recyclerView.setAdapter(recyclerAdapter);
    }
}
```

RecyclerAdapter.java

```java
package com.example.recycleview;

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
```

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

    String[] data;
    Context context;

    public RecyclerAdapter(Context context, String[] data) {
        this.data = data;
        this.context = context;
    }

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

    @Override
    public void onBindViewHolder(@NonNull RecyclerAdapter.ViewHolder
holder, int position) {
        holder.textView.setText(data[position]);
        holder.textView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(context, "Clicked on " +
data[holder.getAdapterPosition()], Toast.LENGTH_SHORT).show();
            }
        });
    }

    @Override
    public int getItemCount() {
        return data.length;
    }

    public class ViewHolder extends RecyclerView.ViewHolder{
        TextView textView;
        public ViewHolder(@NonNull View itemView) {
            super(itemView);
```

```java
            textView = itemView.findViewById(R.id.textName);
        }
    }
}
```

activity_main.xml

```xml
<?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"
    android:padding="15dp"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="5dp"
        android:text="@string/days_of_week"
        android:textColor="#00137C"
        android:textSize="25sp"
        android:textStyle="bold" />

    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recycler_view"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginTop="15dp" />

</LinearLayout>
```

card_design.xml

```xml
<?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"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="15dp">
```

```xml
<androidx.cardview.widget.CardView
    android:layout_width="match_parent"
    android:layout_height="45dp"
    app:cardCornerRadius="15dp"
    app:cardBackgroundColor="#97D2EC">

    <TextView
        android:id="@+id/textName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="@string/monday"
        android:textColor="#000000"
        android:textSize="20sp"
        android:textStyle="bold" />
    </androidx.cardview.widget.CardView>
</LinearLayout>
```

Output

Fragment

Program Code

MainActivity.java

```java
package com.example.fragment;

import androidx.appcompat.app.AppCompatActivity;
import androidx.viewpager2.widget.ViewPager2;

import android.os.Bundle;

import com.google.android.material.tabs.TabLayout;

public class MainActivity extends AppCompatActivity {

    TabLayout tabLayout;
    ViewPager2 viewPager2;
    ViewPagerAdapter viewPagerAdapter;

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

        tabLayout = findViewById(R.id.tabLayout);
        viewPager2 = findViewById(R.id.view_pager);
        viewPagerAdapter = new ViewPagerAdapter(this);
        viewPager2.setAdapter(viewPagerAdapter);

        tabLayout.addOnTabSelectedListener(new
TabLayout.OnTabSelectedListener() {
            @Override
            public void onTabSelected(TabLayout.Tab tab) {
                viewPager2.setCurrentItem(tab.getPosition());
            }

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

            }

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

            }
```

```java
            });

        viewPager2.registerOnPageChangeCallback(new
ViewPager2.OnPageChangeCallback() {
            @Override
            public void onPageSelected(int position) {
                super.onPageSelected(position);
                tabLayout.getTabAt(position).select();
            }
        });
    }
}
```

ViewPagerAdapter.java

```java
package com.example.fragment;

import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentActivity;
import androidx.viewpager2.adapter.FragmentStateAdapter;

public class ViewPagerAdapter extends FragmentStateAdapter {

    public ViewPagerAdapter(@NonNull FragmentActivity fragmentActivity) {
        super(fragmentActivity);
    }

    @NonNull
    @Override
    public Fragment createFragment(int position) {
        switch (position) {
            case 0:
                return new HomeFragment();

            case 1:
                return new NotificationFragment();

            case 2:
                return new ProfileFragment();

            default:
                return new HomeFragment();
        }
    }
```

```
    @Override
    public int getItemCount() {
        return 3;
    }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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">

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

        <com.google.android.material.tabs.TabItem
            android:id="@+id/home"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@string/home" />

        <com.google.android.material.tabs.TabItem
            android:id="@+id/notification"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@string/notification" />

        <com.google.android.material.tabs.TabItem
            android:id="@+id/profile"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="@string/profile" />

    </com.google.android.material.tabs.TabLayout>

    <androidx.viewpager2.widget.ViewPager2
        android:id="@+id/view_pager"
```

```xml
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_below="@+id/tabLayout">

    </androidx.viewpager2.widget.ViewPager2>

</RelativeLayout>
```

fragment_home.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".HomeFragment">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="@string/fragment_1_home"
        android:textColor="#1145D5"
        android:textSize="30sp"
        android:textStyle="bold" />

</RelativeLayout>
```

fragment_notification.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".NotificationFragment">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="@string/fragment_2_notification"
        android:textColor="#1145D5"
        android:textSize="30sp"
        android:textStyle="bold" />
```

```
</RelativeLayout>
```

fragment_profile.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".ProfileFragment">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="@string/fragment_3_profile"
        android:textColor="#1145D5"
        android:textSize="30sp"
        android:textStyle="bold" />

</RelativeLayout>
```

Output
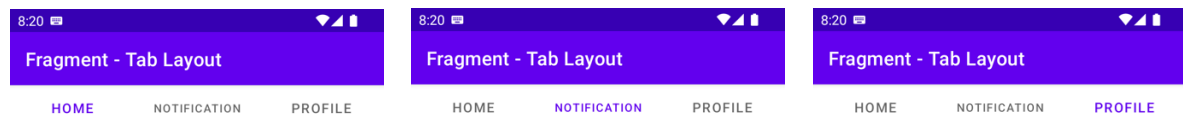
Fragment 1 - Home   Fragment 2 - Notification   Fragment 3 - Profile

Conclusion

First, I learnt about cardview and adding a color gradient to buttons from the above-mentioned practical. CardView allows views to be stacked on top of one another. A floating action button on a screen carries out the primary, or most commonly, action. The user input controls were the most crucial item we learned during the practical. Interactive elements are included in interface input controls. It allows users to enter more data into the system's interface. Toggle buttons, EditText, radio buttons, and other interface input controls are some examples. These make it possible for users to readily engage with the program. I also learnt how to implement FAB and got a good understanding of how RecyclerView functions.

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