Qiong LIU
UI component related codes (FAB, Manu, Fragments)

0.1 Exercise 1

Create a basic activity that contains a float button and a textview list and a menu.

```java
package com.example.cm1;

import android.os.Bundle;
import android.widget.EditText;
import android.widget.TextView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        requestWindowFeature(Window.FEATURE_NO_TITLE);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        // current time
        EditText editTextTimezone = findViewById(R.id.edit_text_4);
        editTextTimezone.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                TimeZone tz = TimeZone.getDefault();
                String currentTimeZone = tz.getDisplayName(false, TimeZone.SHORT) + " " + new SimpleDateFormat("HH
                    :mm:ss", Locale.getDefault()).format(new Date());
                editTextTimezone.setText(currentTimeZone);
            }
        });

        //button to next activity
        Button submitButton = findViewById(R.id.message_button);
        submitButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(MainActivity.this, MainActivity3.class);
                startActivity(intent);
            }
        });

        // back to the top
        FloatingActionButton fab = findViewById(R.id.fab);
        final ScrollView scrollView = findViewById(R.id.scrollview1);
        fab.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                scrollView.scrollTo(0, 0);
            }
        });

        // delete title
        ActionBar actionBar = getSupportActionBar();
        if (actionBar != null) {
            actionBar.setDisplayShowTitleEnabled(false);
        }

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {
            Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);
            return insets;
        });
    }
```

```java
        //manu
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu_main, menu);
        return true;
    }

}
```

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout 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:id="@+id/main"
    android:layout_height="match_parent">




<ScrollView

    android:layout_width="match_parent"
    android:id="@+id/scrollview1"
    android:layout_height="match_parent">

    <androidx.constraintlayout.widget.ConstraintLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="16dp">



        <ImageView
            android:id="@+id/profile_image"
            android:layout_width="match_parent"
            android:layout_height="170dp"
            android:layout_marginTop="40dp"
            android:scaleType="centerCrop"
            android:src="@drawable/fig3"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.0"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent" />


        <TextView
            android:id="@+id/profile_name"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:text="Taylor Brooks"
            android:textSize="24sp"
            android:textStyle="bold"
            android:gravity="start"
            app:layout_constraintTop_toBottomOf="@id/profile_image"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            android:layout_marginTop="50dp" />


        <TextView
            android:id="@+id/text_1"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:text="Dsiaplay name"
            android:textSize="16sp"
            android:textStyle="bold"
            android:gravity="start"
```

```xml
        app:layout_constraintTop_toBottomOf="@id/profile_name"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="32dp" />


<EditText
    android:id="@+id/edit_text_1"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:gravity="start"
    android:textSize="16sp"
    android:inputType="text"
    android:background="@null"
    android:hint="Enter your name"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/text_1"
    android:textColor="@android:color/darker_gray"
    android:textColorHint="@android:color/darker_gray" />

<TextView
    android:id="@+id/text_2"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:text="Status"
    android:textSize="16sp"
    android:textStyle="bold"
    android:gravity="start"
    app:layout_constraintTop_toBottomOf="@id/edit_text_1"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="16dp" />

<EditText
    android:id="@+id/edit_text_2"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:gravity="start"
    android:textSize="16sp"
    android:inputType="text"
    android:background="@null"
    android:hint="Enter your status"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/text_2"
    android:textColor="@android:color/darker_gray"
    android:textColorHint="@android:color/darker_gray" />


<TextView
    android:id="@+id/text_3"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:text="Status"
    android:textSize="16sp"
    android:textStyle="bold"
    android:gravity="start"
    app:layout_constraintTop_toBottomOf="@id/edit_text_2"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="16dp" />

<EditText
    android:id="@+id/edit_text_3"
    android:layout_width="0dp"
```

```
                android:layout_height="wrap_content"
                android:layout_marginTop="10dp"
                android:gravity="start"
                android:textSize="16sp"
                android:inputType="text"
                android:background="@null"
                android:hint="Enter your statusd"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toBottomOf="@id/text_3"
                android:textColor="@android:color/darker_gray"
                android:textColorHint="@android:color/darker_gray" />


        <TextView
                android:id="@+id/text_view_timezone"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_marginTop="16dp"
                android:text="Timezone"
                android:textStyle="bold"
                android:gravity="start"
                android:textSize="16sp"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toBottomOf="@id/edit_text_3" />


        <EditText
                android:id="@+id/edit_text_4"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_marginTop="10dp"
                android:gravity="start"
                android:textSize="16sp"
                android:inputType="text"
                android:background="@null"
                android:hint="Enter your Twitter"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toBottomOf="@id/text_view_timezone"
                android:textColor="@android:color/darker_gray"
                android:textColorHint="@android:color/darker_gray" />

        <Button
                android:id="@+id/message_button"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_marginTop="40dp"
                android:text="Submission"
                android:textColor="#FFFFFF"
                android:backgroundTint="#708090"
                android:textStyle="bold"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toBottomOf="@id/edit_text_4" />


    </androidx.constraintlayout.widget.ConstraintLayout>

</ScrollView>

    <com.google.android.material.floatingactionbutton.FloatingActionButton
    android:id="@+id/fab"
    android:layout_width="46dp"
    android:layout_height="56dp"
    android:clickable="true"
    android:layout_marginEnd="20dp"
```

```
    android:layout_marginBottom="20dp"
    app:backgroundTint="@color/gray_pink"
    app:layout_anchor="@id/scrollview1"
    app:layout_anchorGravity="bottom|end|right"/>


</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

how to set a menu.

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

    <item
        android:id="@+id/menu_revert"
        android:title="Revert" />

    <item
        android:id="@+id/menu_setting"
        android:title="Setting" />


    <item
        android:id="@+id/menu_send_feedback"
        android:title="Send Feedback" />

    <item
        android:id="@+id/menu_help"
        android:title="Help" />
</menu>
```

0.2   Exercise 2

This exercise you will learn how to use fragments.

In total there are several files:

- MainActivity3.java

- activity_main3.xml

- Fragment1.java

- Fragment2.java

- TodoAdapter.java

- fragment_1.xml

- fragment_2.xml

```
    package com.example.cm2;

import android.os.Bundle;
import android.view.View;
import android.widget.ScrollView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import com.google.android.material.floatingactionbutton.FloatingActionButton;

public class MainActivity3 extends AppCompatActivity {
```

```java
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main3);

        Fragment1 fragment1 = new Fragment1();
        getSupportFragmentManager()
                .beginTransaction()
                .replace(R.id.fragment_container3, fragment1 )
                .commit();

        Fragment2 fragment2 = new Fragment2();
        getSupportFragmentManager()
                .beginTransaction()
                .replace(R.id.fragment_container4, fragment2 )
                .commit();


        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main3), (v, insets) -> {
            Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);
            return insets;
        });
    }

}
```

```java
package com.example.cm2;

import android.os.Bundle;
import android.view.View;
import android.widget.ScrollView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import com.google.android.material.floatingactionbutton.FloatingActionButton;

public class MainActivity3 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main3);

        Fragment1 fragment1 = new Fragment1();
        getSupportFragmentManager()
                .beginTransaction()
                .replace(R.id.fragment_container3, fragment1 )
                .commit();

        Fragment2 fragment2 = new Fragment2();
        getSupportFragmentManager()
                .beginTransaction()
                .replace(R.id.fragment_container4, fragment2 )
                .commit();


        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main3), (v, insets) -> {
            Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);
            return insets;
        });
    }

}
```

```java
// TodoAdapter.java
package com.example.cm2;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;

public class TodoAdapter extends RecyclerView.Adapter<TodoAdapter.TodoViewHolder> {

    private final List<String> items;

    public TodoAdapter(List<String> items) {
        this.items = items;
    }

    @NonNull
    @Override
    public TodoViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View view = LayoutInflater.from(parent.getContext())
                .inflate(android.R.layout.simple_list_item_1, parent, false); // Simple system layout
        return new TodoViewHolder(view);
    }

    @Override
    public void onBindViewHolder(@NonNull TodoViewHolder holder, int position) {
        holder.textView.setText(items.get(position));
    }

    @Override
    public int getItemCount() {
        return items.size();
    }

    static class TodoViewHolder extends RecyclerView.ViewHolder {
        TextView textView;

        public TodoViewHolder(View itemView) {
            super(itemView);
            textView = itemView.findViewById(android.R.id.text1);
        }
    }
}
```

```java
package com.example.cm2;

import android.content.Intent;
import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.Toast;

public class Fragment1 extends Fragment {


    public Fragment1() {
        // Required empty public constructor
    }


    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {

        View view = inflater.inflate(R.layout.fragment_1, container, false);

        // button
        Button editButton = view.findViewById(R.id.edit_button);
        editButton.setOnClickListener(v -> {
```

```java
                Toast.makeText(getActivity(), "Edit profile clicked", Toast.LENGTH_SHORT).show();
                // Intent to go back to MainActivity
                Intent intent = new Intent(getActivity(), MainActivity.class);
                startActivity(intent);
        } );

        return view;
    }
}
```

```java
// FragmentTodoList.java
package com.example.cm2;

import android.os.Bundle;
import androidx.fragment.app.Fragment;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import java.util.Arrays;
import java.util.List;

public class Fragment2 extends Fragment {

    public Fragment2() {}

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        View view = inflater.inflate(R.layout.fragment_2, container, false);

        RecyclerView recyclerView = view.findViewById(R.id.todo_recycler_view);
        recyclerView.setLayoutManager(new LinearLayoutManager(getContext()));

        List<String> tasks = Arrays.asList(
                " Learn how to use Fragments",
                " Learn RecyclerView",
                " Submit Mobile Programming assignment",
                " Dance class tonight"
        );

        recyclerView.setAdapter(new com.example.cm2.TodoAdapter(tasks));
        return view;
    }
}
```

```xml
<!-- res/layout/fragment_user_card.xml -->
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:padding="24dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center_horizontal"
    android:background="@color/cream_background">

    <ImageView
        android:id="@+id/user_image"
        android:layout_width="120dp"
        android:layout_height="90dp"
        android:layout_marginBottom="16dp"
        android:scaleType="centerCrop"
        android:src="@drawable/fig3" />

    <TextView
        android:id="@+id/user_name"
        android:text="Taylor Brooks"
        android:textSize="20sp"
        android:textStyle="bold"
        android:textColor="#333333"
        android:layout_marginTop="8dp"
        android:layout_marginBottom="4dp"
        android:gravity="center"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <TextView
        android:id="@+id/user_status"
        android:text="Status: Busy"
        android:textSize="16sp"
        android:textColor="#666666"
        android:layout_marginBottom="4dp"
        android:gravity="center"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <TextView
        android:id="@+id/user_twitter"
        android:text="Twitter: XXX"
        android:textSize="16sp"
        android:textColor="#666666"
        android:layout_marginBottom="4dp"
        android:gravity="center"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <TextView
        android:id="@+id/user_timezone"
        android:text="Timezone: GMT+2"
        android:textSize="16sp"
        android:textColor="#666666"
        android:layout_marginBottom="16dp"
        android:gravity="center"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <Button
        android:id="@+id/edit_button"
        android:text="Edit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:backgroundTint="#d6c8ca"
        android:textColor="#FFFFFF"
        android:layout_marginTop="12dp" />
</LinearLayout>
```

```
<!-- res/layout/fragment_todo_list.xml -->
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:background="@color/lavender_background"
    android:padding="16dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:text="My To-Do List"
        android:textSize="20sp"
        android:textStyle="bold"
        android:layout_marginBottom="16dp"
        android:textColor="#333333"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

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