Name: Ken Lin

SID: 006198682

Github repository of my code : <https://github.com/DehNutCase/CSE-461/tree/master/lab3>

I believe all parts are completed successfully.

However, I don’t know how many points they are worth (the lab 3 page doesn’t say), so I assumed 20 points.

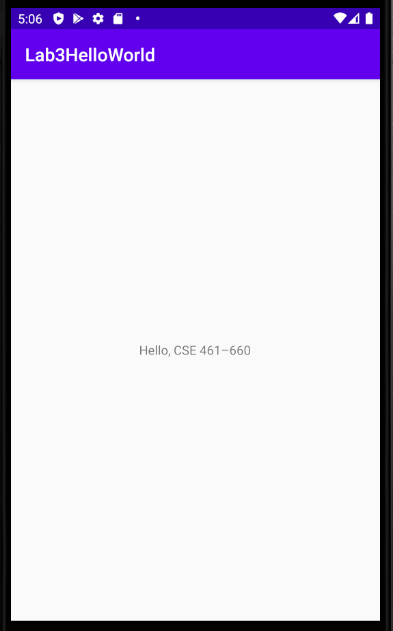
20 Points

**Report:**

Part I, Basics:

Create Hello World in Android emulator.

Screenshot:



Code:

activity\_main.xml

|  |
| --- |
| *<?***xml version="1.0" encoding="utf-8"***?> <!--most of code taken from https://www.tutorialspoint.com/android/android\_hello\_world\_example.htm-->* <**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"** >   <**TextView  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:layout\_centerHorizontal="true"  android:layout\_centerVertical="true"  android:text="@string/hello\_world"  tools:context=".MainActivity"** />  </**RelativeLayout**> |

strings.xml

|  |
| --- |
| <**resources**>  *<!--most of code taken from https://www.tutorialspoint.com/android/android\_hello\_world\_example.htm-->* <**string name="app\_name"**>Lab3HelloWorld</**string**>  <**string name="hello\_world"**>"Hello, CSE 461–660"</**string**>  <**string name="menu\_settings"**>Settings</**string**>  <**string name="title\_activity\_main"**>MainActivity</**string**> </**resources**> |

MainActivity.java

|  |
| --- |
| **package** com.example.lab3helloworld;  **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);  } } |

Part II, Simple Calculator:

Create Simple Calculator and replace buttons of operators with images.

Screenshot:



Code:

Activity\_main.xml

|  |
| --- |
| *<?***xml version="1.0" encoding="utf-8"***?>* <**LinearLayout  xmlns:android="http://schemas.android.com/apk/res/android"  android:orientation="vertical"  android:layout\_width="fill\_parent"  android:layout\_height="fill\_parent"**>  <**LinearLayout  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:id="@+id/linearLayout1"  android:layout\_marginLeft="12pt"  android:layout\_marginRight="12pt"  android:layout\_marginTop="4pt"**>  <**EditText  android:layout\_weight="1"  android:layout\_height="wrap\_content"  android:layout\_marginRight="6pt"  android:id="@+id/t1"  android:layout\_width="match\_parent"  android:inputType="numberDecimal"**>  </**EditText**>  <**EditText  android:layout\_height="wrap\_content"  android:layout\_weight="1"  android:layout\_marginLeft="6pt"  android:id="@+id/t2"  android:layout\_width="match\_parent"  android:inputType="numberDecimal"**>  </**EditText**>  </**LinearLayout**>  <**LinearLayout  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:id="@+id/linearLayout2"  android:layout\_marginTop="4pt"  android:layout\_marginLeft="6pt"  android:layout\_marginRight="6pt"**>  <**ImageButton  android:layout\_height="wrap\_content"  android:layout\_width="match\_parent"  android:layout\_weight="1"  android:src="@drawable/plus\_button"  android:id="@+id/plus"**>  </**ImageButton**>  <**ImageButton  android:layout\_height="wrap\_content"  android:layout\_width="match\_parent"  android:layout\_weight="1"  android:src="@drawable/minux\_button"  android:id="@+id/minus"**>  </**ImageButton**>  </**LinearLayout**>   <**LinearLayout  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:id="@+id/linearLayout3"  android:layout\_marginTop="4pt"  android:layout\_marginLeft="6pt"  android:layout\_marginRight="6pt"**>   <**ImageButton  android:layout\_height="wrap\_content"  android:layout\_width="match\_parent"  android:layout\_weight="1"  android:src="@drawable/multiply\_button"  android:id="@+id/multiply"**>  </**ImageButton**>  <**ImageButton  android:layout\_height="wrap\_content"  android:layout\_width="match\_parent"  android:layout\_weight="1"  android:src="@drawable/divide\_button"  android:id="@+id/divide"**>  </**ImageButton**>  </**LinearLayout**>   <**TextView  android:id="@+id/displayResult"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_centerHorizontal="true"  android:layout\_centerVertical="true"  android:gravity="center\_horizontal"  android:textSize="32dp"**>  </**TextView**> </**LinearLayout**> |

MainActivity.java

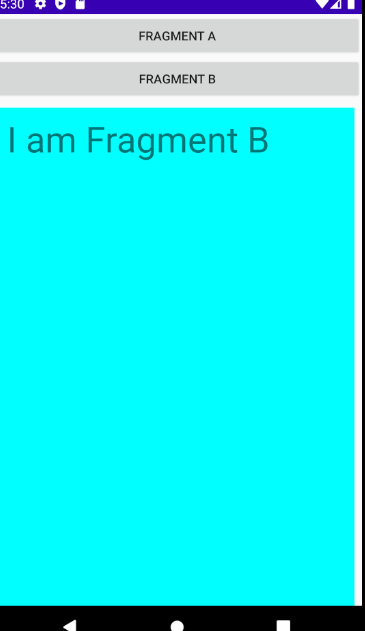
|  |
| --- |
| **package** com.example.lab3simplecalculator;  **import** androidx.appcompat.app.AppCompatActivity; *//import android.support.v7.app.AppCompatActivity;* **import** android.os.Bundle; **import** android.app.Activity; **import** android.content.DialogInterface; **import** android.content.DialogInterface.OnClickListener; **import** android.text.TextUtils; **import** android.view.Menu; **import** android.view.View; **import** android.widget.Button; **import** android.widget.ImageButton; **import** android.widget.EditText; **import** android.widget.TextView;  **public class** MainActivity **extends** Activity **implements** View.OnClickListener{  EditText t1;  EditText t2;   ImageButton plus;  ImageButton minus;  ImageButton multiply;  ImageButton divide;   TextView displayResult;   String oper = **""**;   */\*\* Called when the activity is first created. \*/* @Override  **public void** onCreate(Bundle savedInstanceState) {  **super**.onCreate(savedInstanceState);  setContentView(R.layout.activity\_main);   *// find the EditText elements (defined in res/layout/activity\_main.xml* t1 = (EditText) findViewById(R.id.t1);  t2 = (EditText) findViewById(R.id.t2);   plus = (ImageButton) findViewById(R.id.plus);  minus = (ImageButton) findViewById(R.id.minus);  multiply = (ImageButton) findViewById(R.id.multiply);  divide = (ImageButton) findViewById(R.id.divide);   displayResult = (TextView) findViewById(R.id.displayResult);   *// set listeners* plus.setOnClickListener( **this** );  minus.setOnClickListener( **this**);  multiply.setOnClickListener( **this**);  divide.setOnClickListener( **this**);  }   *// @Override* **public void** onClick( View view ) {  **double** num1 = 0;  **double** num2 = 0;  **double** result = 0;   *// check if the fields are empty* **if** (TextUtils.isEmpty(t1.getText().toString())  || TextUtils.isEmpty(t2.getText().toString())) {  **return**;  }   *// read EditText and fill variables with numbers* num1 = Float.parseFloat(t1.getText().toString());  num2 = Float.parseFloat(t2.getText().toString());   *// perform operations  // save operator in oper for later use* **switch** ( view.getId() ) {  **case** R.id.plus:  oper = **"+"**;  result = num1 + num2;  **break**;  **case** R.id.minus:  oper = **"-"**;  result = num1 - num2;  **break**;  **case** R.id.multiply:  oper = **"\*"**;  result = num1 \* num2;  **break**;  **case** R.id.divide:  oper = **"/"**;  result = num1 / num2;  **break**;  **default**:  **break**;  }   *// form the output line* displayResult.setText(num1 + **" "** + oper + **" "** + num2 + **" = "** + result);  } } |

Part III, Android Fragments:

Simple application with 2 fragments, Fragment A and Fragment B. When the user clicks on a button, it presents Fragment A with a yellow background. When the user clicks on the other button, present Fragment B with a blue background.

(Colors aren’t the same as in the example.)

Screenshot:

Code:

Activity\_main.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:id="@+id/container"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent"  android:orientation="vertical"**>   <**Button  android:id="@+id/button\_a"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:text="@string/fragment\_a"  android:onClick="fragA"  app:layout\_constraintTop\_toTopOf="parent"**/>   <**Button  android:id="@+id/button\_b"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_marginStart="0dp"  android:layout\_marginEnd="0dp"  android:text="@string/fragment\_b"  app:layout\_constraintTop\_toBottomOf="@id/button\_a"**/>   <**FrameLayout  android:layout\_width="match\_parent"  android:layout\_height="fill\_parent"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toBottomOf="@id/button\_b"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:layout\_marginEnd="8dp"  android:textSize="40sp"  android:id="@+id/fragment\_location"**/>  </**LinearLayout**> |

Fragment\_a.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="fill\_parent"  android:background="#FFFF00"  tools:context=".ui.AFragment"**>   <**TextView  android:id="@+id/text\_a"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:layout\_marginEnd="8dp"  android:textSize="40sp"  android:text="@string/i\_am\_fragment\_a"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"** /> </**androidx.constraintlayout.widget.ConstraintLayout**> |

Fragment\_b.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="fill\_parent"  android:background="#00FFFF"  tools:context=".ui.BFragment"** >   <**TextView  android:id="@+id/text\_a"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:layout\_marginEnd="8dp"  android:textSize="40sp"  android:text="@string/i\_am\_fragment\_b"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"** /> </**androidx.constraintlayout.widget.ConstraintLayout**> |

MainActivity.java

|  |
| --- |
| **package** com.example.androidfragments;  **import** android.app.Fragment; **import** android.os.Bundle; **import** com.example.androidfragments.ui.AFragment; **import** com.example.androidfragments.ui.BFragment; **import** androidx.fragment.app.FragmentActivity; **import** androidx.fragment.app.FragmentManager; **import** androidx.fragment.app.FragmentTransaction; **import** android.view.View; **import** android.widget.Button;   **public class** MainActivity **extends** FragmentActivity {  @Override  **public void** onCreate(Bundle savedInstanceState) {  **super**.onCreate(savedInstanceState);  setContentView(R.layout.***activity\_main***);  FragmentTransaction ft = getSupportFragmentManager().beginTransaction();  ft.replace(R.id.***fragment\_location***, **new** AFragment());  ft.commit();   Button button = (Button) findViewById(R.id.***button\_b***);  button.setOnClickListener(**new** View.OnClickListener() {  **public void** onClick(View v) {  FragmentTransaction ft = getSupportFragmentManager().beginTransaction();  ft.replace(R.id.***fragment\_location***, **new** BFragment());  ft.commit();  }  });  }    **public void** fragA (View view) {  FragmentTransaction ft = getSupportFragmentManager().beginTransaction();  ft.replace(R.id.***fragment\_location***, **new** AFragment());  ft.commit();  }   } |

AFragment.java

|  |
| --- |
| **package** com.example.androidfragments.ui;  **import** android.os.Bundle; **import** android.view.LayoutInflater; **import** android.view.View; **import** android.view.ViewGroup; **import** com.example.androidfragments.R; **import** androidx.fragment.app.Fragment;  **public class** AFragment **extends** Fragment {  @Override  **public** View onCreateView(LayoutInflater inflater, ViewGroup container,  Bundle savedInstanceState) {  *// Inflate the layout for this fragment* **return** inflater.inflate(R.layout.***fragment\_a***, container, **false**);  } } |

BFragment.java

|  |
| --- |
| **package** com.example.androidfragments.ui;  **import** android.os.Bundle; **import** android.view.LayoutInflater; **import** android.view.View; **import** android.view.ViewGroup; **import** com.example.androidfragments.R; **import** androidx.fragment.app.Fragment;  **public class** BFragment **extends** Fragment {  @Override  **public** View onCreateView(LayoutInflater inflater, ViewGroup container,  Bundle savedInstanceState) {  *// Inflate the layout for this fragment* **return** inflater.inflate(R.layout.***fragment\_b***, container, **false**);  } } |