Mobile Programming MidTerm

Q1

Kotlin Code

```kotlin
package com.example.midtermq1

import android.os.Bundle
import android.view.View
import android.widget.AdapterView
import android.widget.ArrayAdapter
import android.widget.Button
import android.widget.EditText
import android.widget.Spinner
import android.widget.TextView
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity
import androidx.core.view.ViewCompat
import androidx.core.view.WindowInsetsCompat
import java.util.Locale

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)

        val resBtn: Button = findViewById(R.id.resBtn)

        val resText: TextView = findViewById(R.id.resText)

        var flag: String = "Add";
        val spinnerVal: Spinner = findViewById(R.id.spinnerV)
        var options = arrayOf("Add", "Subtract", "Multiply", "Divide")

        spinnerVal.adapter =
            ArrayAdapter<String>(this,
android.R.layout.simple_list_item_1, options)

        resBtn.setOnClickListener{ view ->
```

```kotlin
        val num1Text: EditText = findViewById(R.id.num1Text)
        val num2Text: EditText = findViewById(R.id.num2Text)

        var num1: Double = num1Text.text.toString().toDouble();
        var num2:Double = num2Text.text.toString().toDouble();


        var temp: Double = num1;

        when(flag){
            "Add" -> temp += num2
            "Subtract" -> temp -= num2
            "Multiply" -> temp *= num2
            "Divide" -> temp /= num2
        }

        resText.text = String.format(Locale.US,"%.4f", temp);
    }

    spinnerVal.onItemSelectedListener = object :
AdapterView.OnItemSelectedListener {
        override fun onItemSelected(p0: AdapterView<*>?, p1:
View?, p2: Int, p3: Long) {
            flag = options.get(p2)
        }

        override fun onNothingSelected(p0: AdapterView<*>?) {
            TODO("Not yet implemented")
        }
    }


    }
}
```

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:id="@+id/main"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/num1Text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        android:hint="Number 1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.164"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.116" />

    <EditText
        android:id="@+id/num2Text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        android:hint="Number 2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.164"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.237" />


    <Button
        android:id="@+id/resBtn"
        android:layout_width="101dp"
        android:layout_height="44dp"
        android:text="Result"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />

    <TextView
```
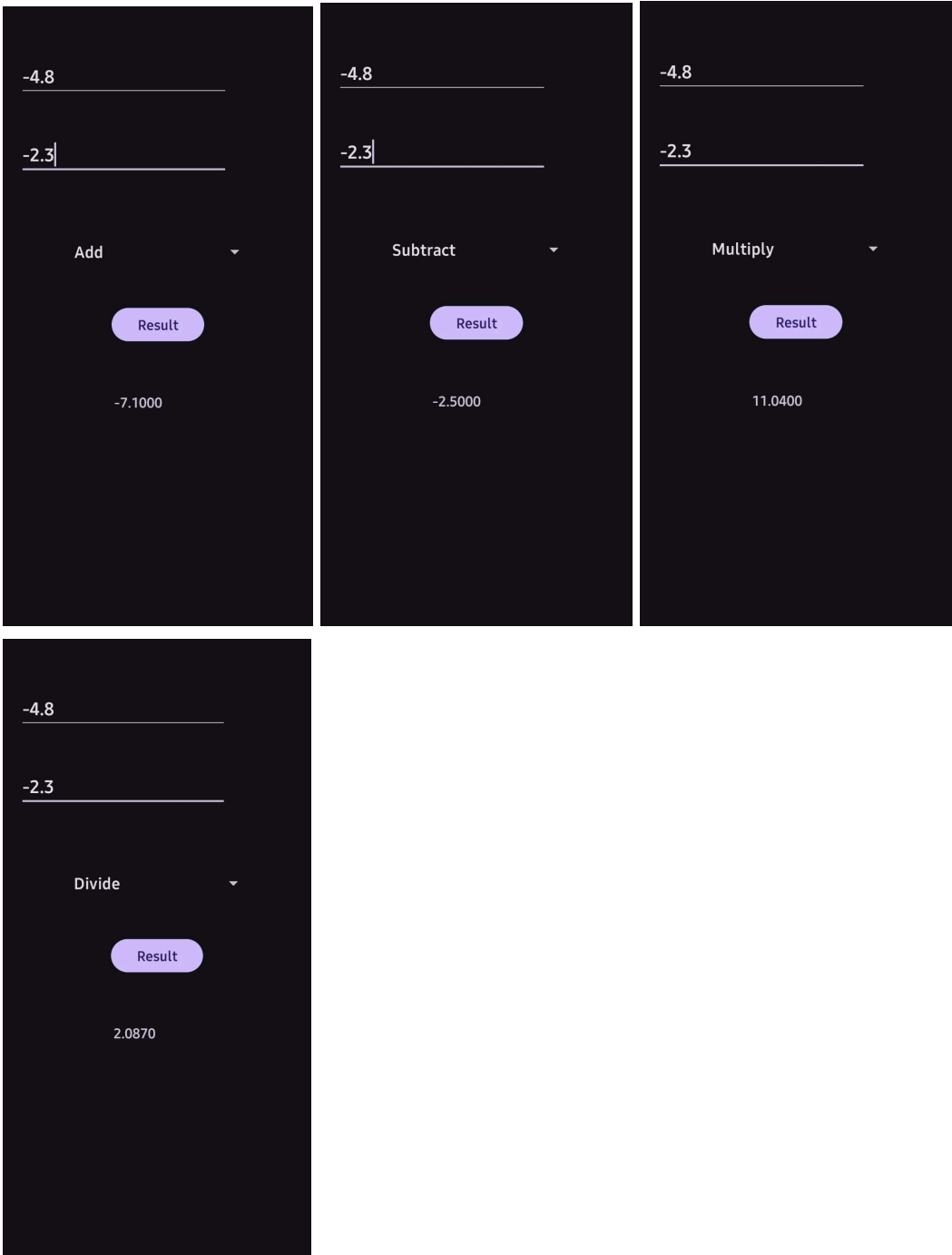
```xml
        android:id="@+id/resText"
        android:layout_width="94dp"
        android:layout_height="36dp"
        android:hint="Result"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.628" />

    <Spinner
        android:id="@+id/spinnerV"
        android:layout_width="215dp"
        android:layout_height="45dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.387" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Screenshots

-4.8

-2.3

Add ▾

Result

-7.1000

-4.8

-2.3

Subtract ▾

Result

-2.5000

-4.8

-2.3

Multiply ▾

Result

11.0400

-4.8

-2.3

Divide ▾

Result

2.0870

Q2

Kotlin Code

```kotlin
package com.example.midtermq2

import android.os.Bundle
import android.view.View
import android.widget.AdapterView
import android.widget.ArrayAdapter
import android.widget.Button
import android.widget.EditText
import android.widget.Spinner
import android.widget.TextView
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity
import androidx.core.view.ViewCompat
import androidx.core.view.WindowInsetsCompat
import java.util.Locale

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)

        val resBtn: Button = findViewById(R.id.resBtn)
        val resText: TextView = findViewById(R.id.resText)

        val compText: TextView = findViewById(R.id.compText)

        var flag: String = "Rock";
        val spinnerVal: Spinner = findViewById(R.id.spinnerV)
        var options = arrayOf("Rock", "Paper", "Scissor")

        spinnerVal.adapter =
            ArrayAdapter<String>(this,
android.R.layout.simple_list_item_1, options)

        resBtn.setOnClickListener{ view ->

            val rnds = (0..2).random();
            var compChoice: String;
            if(rnds == 0){
```

```kotlin
                compChoice = "Rock";
            }
            else if(rnds == 1){
                compChoice = "Paper";
            }
            else{
                compChoice = "Scissor";
            }

            compText.text = compChoice;

            if(flag == "Rock" && compChoice == "Scissor"){
                resText.text = "YOU WON";
            }
            else if(flag == "Paper" && compChoice == "Rock"){
                resText.text = "YOU WON";
            }
            else if(flag == "Scissor" && compChoice == "Paper"){
                resText.text = "YOU WON";
            }
            else if(flag == compChoice){
                resText.text = "DRAW";
            }
            else{
                resText.text = "YOU LOST";
            }
        }

        spinnerVal.onItemSelectedListener = object :
AdapterView.OnItemSelectedListener {
            override fun onItemSelected(p0: AdapterView<*>?, p1:
View?, p2: Int, p3: Long) {
                flag = options.get(p2)
            }

            override fun onNothingSelected(p0: AdapterView<*>?) {
                flag = "Rock";
            }
        }

    }
}
```

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">


    <Button
        android:id="@+id/resBtn"
        android:layout_width="101dp"
        android:layout_height="44dp"
        android:text="Go"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.423" />

    <TextView
        android:id="@+id/resText"
        android:layout_width="94dp"
        android:layout_height="36dp"
        android:hint="Result"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.511"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.682" />

    <Spinner
        android:id="@+id/spinnerV"
        android:layout_width="215dp"
        android:layout_height="45dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.51"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
```

```xml
        app:layout_constraintVertical_bias="0.275" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="243dp"
        android:layout_height="60dp"
        android:ems="10"
        android:inputType="text"
        android:gravity="center"
        android:text="Rock Paper Scissor"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.065" />

    <EditText
        android:id="@+id/compText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="center"
        android:inputType="text"
        android:text=""
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Screenshots

Rock Paper Scissor

Paper ▾

Go

Paper

DRAW

Rock Paper Scissor

Paper ▾

Go

Scissor

YOU LOST

Rock Paper Scissor

Rock ▾

Go

Paper

YOU LOST

Rock Paper Scissor

Rock ▾

Go

Scissor

YOU WON