

Mobile Programming MidTerm

Q1

Kotlin Code

```
package com.example.midtermq1

import android.os.Bundle
import android.view.View
import android.widget.AdapterView
import android.widget.AdapterView.OnItemClickListener
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 ->
```

```

        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 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">

<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" />

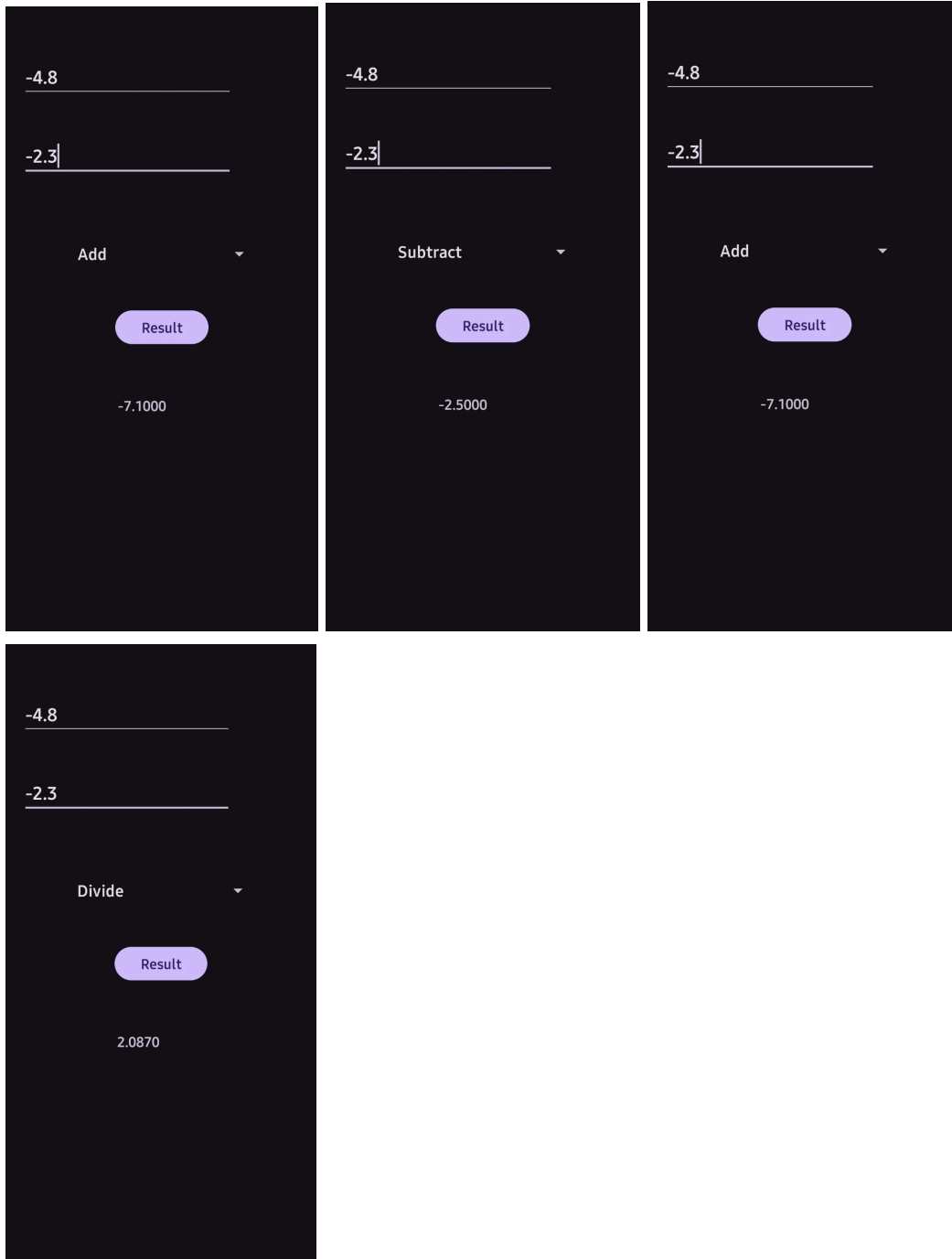
<Button
    android:id="@+id/resBtn"
    android:layout_width="101dp"
    android:layout_height="44dp"
    android:text="Result"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"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

<TextView
```

```
    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



Q2

Kotlin Code

```
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){
```

```

        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 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"
```



```
        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

