

## Bài 1 :

Kết quả chạy chương trình :

- Đổi từ tiền việt nam sang tiền Nhật với 1jpy = 171.26 vnd

The screenshot shows the Android Studio interface with the code editor displaying `MainActivity.kt`. The code defines a map of exchange rates from various currencies to VND. In the emulator window, the input field has "JPY" and the output field shows "171.26".

```
class MainActivity : AppCompatActivity() {
    private lateinit var spinnerCurrency1: Spinner
    private lateinit var spinnerCurrency2: Spinner
    // Cờ để ngăn việc cập nhật độ quý vô hạn
    private var isUpdating = false
    // Sử dụng Map<String, Double> để lưu trữ tỷ giá
    // Lấy VND làm đơn vị cơ sở (VND = 1.0)
    private val exchangeRates = mapOf(
        "VND" to 1.0,
        "USD" to 26280.0, // Bồ la Mỹ
        "EUR" to 27200.0, // Euro
        "JPY" to 171.26, // Yên Nhật
        "GBP" to 32250.0, // Bảng Anh
        "AUD" to 16800.0, // Bồ la Úc
        "SGD" to 18700.0, // Bồ la Singapore
        "CAD" to 18600.0, // Bồ la Canada
        "CHF" to 28100.0, // Franc Thụy Sĩ
        "CNY" to 3500.0, // Nhân dân tệ Trung Quốc
        "KRW" to 18.5 // Won Hàn Quốc
    )
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)
    }
}
```

- Đổi từ tiền việt nam sang tiền mỹ với 1usd = 26280 vnd

The screenshot shows the Android Studio interface with the code editor displaying `MainActivity.kt`. The code defines a map of exchange rates from various currencies to VND. In the emulator window, the input field has "USD" and the output field shows "26280".

```
class MainActivity : AppCompatActivity() {
    private lateinit var spinnerCurrency1: Spinner
    private lateinit var spinnerCurrency2: Spinner
    // Cờ để ngăn việc cập nhật độ quý vô hạn
    private var isUpdating = false
    // Sử dụng Map<String, Double> để lưu trữ tỷ giá
    // Lấy VND làm đơn vị cơ sở (VND = 1.0)
    private val exchangeRates = mapOf(
        "VND" to 1.0,
        "USD" to 26280.0, // Bồ la Mỹ
        "EUR" to 27200.0, // Euro
        "JPY" to 171.26, // Yên Nhật
        "GBP" to 32250.0, // Bảng Anh
        "AUD" to 16800.0, // Bồ la Úc
        "SGD" to 18700.0, // Bồ la Singapore
        "CAD" to 18600.0, // Bồ la Canada
        "CHF" to 28100.0, // Franc Thụy Sĩ
        "CNY" to 3500.0, // Nhân dân tệ Trung Quốc
        "KRW" to 18.5 // Won Hàn Quốc
    )
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        enableEdgeToEdge()
        setContentView(R.layout.activity_main)
    }
}
```

## Bài 2 :

Kết quả chạy chương trình :

- Số lẻ nhỏ hơn 10 :

The screenshot shows the Android Studio interface with the code editor open to MainActivity.kt. The code defines a class MainActivity that overrides the onCreate method. It initializes several radio buttons: rbChinhPhuong, rbHoanHao, rbFibo, and allRadios. It also initializes editNumber, listView, and tvMessage. The adapter is set to an ArrayAdapter with android.R.layout.simple\_list\_item\_1. A TextWatcher is attached to editNumber. The code uses findViewById to get references to the UI components.

On the right, the preview pane shows a list of numbers from 1 to 9. The number 10 is at the top, followed by 3, 5, 7, and 9. To the right of each number is a radio button labeled with a condition: Sô lẻ (radio selected), Sô chẵn, Sô nguyên tố, Sô chính phương, Sô hoàn hảo, and Sô Fibonacci. The first five conditions have empty circles, while the last one has a small dot.

```
class MainActivity : AppCompatActivity() {  
    private lateinit var rbChinhPhuong: RadioButton  
    private lateinit var rbHoanHao: RadioButton  
    private lateinit var rbFibo: RadioButton  
    private lateinit var allRadios: List<RadioButton>  
  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
  
        edtNumber = findViewById( id = R.id.edtNumber )  
        listView = findViewById( id = R.id.listView )  
        tvMessage = findViewById( id = R.id.tvMessage )  
  
        rbL = findViewById( id = R.id.rbL )  
        rbC = findViewById( id = R.id.rbC )  
        rbNT = findViewById( id = R.id.rbNT )  
        rbCP = findViewById( id = R.id.rbCP )  
        rbHH = findViewById( id = R.id.rbHH )  
        rbFB = findViewById( id = R.id.rbFB )  
  
        allRadios = listOf(rbL, rbC, rbNT, rbCP, rbHH, rbFB)  
  
        // Khởi tạo adapter rỗng (kiểu Long)  
        adapter = ArrayAdapter( context = this, resource = android.R.layout.simple_list_item_1 )  
        listView.adapter = adapter  
  
        // TextWatcher - cập nhật ngay khi nhập thay đổi  
    }  
}
```

- Số chẵn nhỏ hơn 10 :

This screenshot is identical to the previous one, except the preview pane now shows a list of even numbers: 2, 4, 6, and 8. The number 10 is still at the top. The radio buttons to the right of the numbers are now filled with dots, indicating they are selected. The other radio buttons remain empty.

```
class MainActivity : AppCompatActivity() {  
    private lateinit var rbChinhPhuong: RadioButton  
    private lateinit var rbHoanHao: RadioButton  
    private lateinit var rbFibo: RadioButton  
    private lateinit var allRadios: List<RadioButton>  
  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
  
        edtNumber = findViewById( id = R.id.edtNumber )  
        listView = findViewById( id = R.id.listView )  
        tvMessage = findViewById( id = R.id.tvMessage )  
  
        rbL = findViewById( id = R.id.rbL )  
        rbC = findViewById( id = R.id.rbC )  
        rbNT = findViewById( id = R.id.rbNT )  
        rbCP = findViewById( id = R.id.rbCP )  
        rbHH = findViewById( id = R.id.rbHH )  
        rbFB = findViewById( id = R.id.rbFB )  
  
        allRadios = listOf(rbL, rbC, rbNT, rbCP, rbHH, rbFB)  
  
        // Khởi tạo adapter rỗng (kiểu Long)  
        adapter = ArrayAdapter( context = this, resource = android.R.layout.simple_list_item_1 )  
        listView.adapter = adapter  
  
        // TextWatcher - cập nhật ngay khi nhập thay đổi  
    }  
}
```

- Số nguyên tố nhỏ hơn 10 :

The screenshot shows the Android Studio interface. On the left is the project structure, with the main module selected. The code editor on the right contains the `MainActivity.kt` file. A floating window in the bottom right corner displays the number "10".

```
class MainActivity : AppCompatActivity() {  
    private lateinit var rbChinhPhuong: RadioButton  
    private lateinit var rbHoanHao: RadioButton  
    private lateinit var rbFibo: RadioButton  
    private lateinit var allRadios: List<RadioButton>  
  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
  
        edtNumber = findViewById(id = R.id.edtNumber)  
        listView = findViewById(id = R.id.listView)  
        tvMessage = findViewById(id = R.id.tvMessage)  
  
        rbLe = findViewById(id = R.id.rbLe)  
        rbChan = findViewById(id = R.id.rbChan)  
        rbNguyenTo = findViewById(id = R.id.rbNguyenTo)  
        rbChinhPhuong = findViewById(id = R.id.rbChinhPhuong)  
        rbHoanHao = findViewById(id = R.id.rbHoanHao)  
        rbFibo = findViewById(id = R.id.rbFibo)  
  
        allRadios = listOf(rbLe, rbChan, rbNguyenTo, rbChinhPhuong, rbHoanHao, rbFibo)  
  
        // Khởi tạo adapter rỗng (kiểu Long)  
        adapter = ArrayAdapter(context = this, resource = android.R.layout.simple_list_item_1)  
        listView.adapter = adapter  
  
        // TextWatcher - cập nhật ngay khi nhập thay đổi  
    }  
}
```

- Số chính phương nhỏ hơn 10 :

The screenshot shows the Android Studio interface. The code editor on the right contains the `MainActivity.kt` file. A floating window in the bottom right corner displays the number "1".

```
class MainActivity : AppCompatActivity() {  
    private lateinit var rbChinhPhuong: RadioButton  
    private lateinit var rbHoanHao: RadioButton  
    private lateinit var rbFibo: RadioButton  
    private lateinit var allRadios: List<RadioButton>  
  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
  
        edtNumber = findViewById(id = R.id.edtNumber)  
        listView = findViewById(id = R.id.listView)  
        tvMessage = findViewById(id = R.id.tvMessage)  
  
        rbLe = findViewById(id = R.id.rbLe)  
        rbChan = findViewById(id = R.id.rbChan)  
        rbNguyenTo = findViewById(id = R.id.rbNguyenTo)  
        rbChinhPhuong = findViewById(id = R.id.rbChinhPhuong)  
        rbHoanHao = findViewById(id = R.id.rbHoanHao)  
        rbFibo = findViewById(id = R.id.rbFibo)  
  
        allRadios = listOf(rbLe, rbChan, rbNguyenTo, rbChinhPhuong, rbHoanHao, rbFibo)  
  
        // Khởi tạo adapter rỗng (kiểu Long)  
        adapter = ArrayAdapter(context = this, resource = android.R.layout.simple_list_item_1)  
        listView.adapter = adapter  
  
        // TextWatcher - cập nhật ngay khi nhập thay đổi  
    }  
}
```

- Số hoàn hảo nhỏ hơn 10 :

The screenshot shows the Android Studio interface. On the left is the project structure, with the main file being `MainActivity.kt`. The code in `MainActivity.kt` is as follows:

```
class MainActivity : AppCompatActivity() {
    private lateinit var rbChinhPhuong: RadioButton
    private lateinit var rbHoanHao: RadioButton
    private lateinit var rbFibo: RadioButton
    private lateinit var allRadios: List<RadioButton>

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

        edtNumber = findViewById( R.id.edtNumber )
        listView = findViewById( R.id.listView )
        tvMessage = findViewById( R.id.tvMessage )

        rbLe = findViewById( R.id.rbLe )
        rbChan = findViewById( R.id.rbChan )
        rbNguyenTo = findViewById( R.id.rbNguyenTo )
        rbChinhPhuong = findViewById( R.id.rbChinhPhuong )
        rbHoanHao = findViewById( R.id.rbHoanHao )
        rbFibo = findViewById( R.id.rbFibo )

        allRadios = listOf(rbLe, rbChan, rbNguyenTo, rbChinhPhuong, rbHoanHao, rbFibo)

        // Khởi tạo adapter rỗng (kiểu Long)
        adapter = ArrayAdapter( context = this, resource = android.R.layout.simple_list_item_1 )
        listView.adapter = adapter
    }

    // TextWatcher - cập nhật ngay khi nhập thay đổi
}
```

The right side of the screen shows the emulator interface. It displays a list of numbers from 1 to 10. The radio buttons for each number are as follows:

Số	Số lẻ	Số chẵn
10	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>
8	<input checked="" type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input checked="" type="radio"/>
5	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input checked="" type="radio"/>
3	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input checked="" type="radio"/>
1	<input type="radio"/>	<input checked="" type="radio"/>

- Số fibonacci nhỏ hơn 10 :

The screenshot shows the Android Studio interface, identical to the one above, but with the radio button selection for the number 1 changed. Now, the radio button for "Số Fibonacci" is selected, while the others are unselected.