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Bài 1

The screenshot shows the Android Studio interface with the project structure and code editor visible. The code in `MainActivity.kt` handles currency conversion logic. A floating window titled "Chuyển Đổi Tiền Tệ" (Currency Converter) is displayed, showing the conversion of 1 USD to 24000.00 VND.

```
class MainActivity : AppCompatActivity() {
    private fun convertCurrency(fromSourceToTarget: Boolean) {
        val amount = binding.editTextToAmount.text.toString()
        val result = convertAmount(amount, fromCurrency =
            binding.editTextFromAmount.getText().toString())
        binding.editTextFromAmount.setText(result)
    }
    catch (e: Exception) {
        e.printStackTrace()
    }
}

private fun convertAmount(amount: Double, fromCurrency: String): Double {
    val amountInUSD = amount / (exchangeRates[fromCurrency] ?: 1.0)
    return amountInUSD * (exchangeRates[toCurrency] ?: 1.0)
}

private fun formatAmount(amount: Double): String {
    return if (amount >= 1000) {
        String.format("%.2f", amount)
    } else {
        String.format("%d", amount)
    }
}
```

Problems tab shows 10 warnings related to locale usage:

- Implicitly using the default locale is a common source of bugs: Use 'String.format(Locale, ...)' instead
- Implicitly using the default locale is a common source of bugs: Use 'String.format(Locale, ...)' instead
- Type: In word 'Danh' 17

Bottom status bar: 75°F Mostly cloudy, 10:04 PM, 11/10/2025

This screenshot is identical to the one above, showing the same code in `MainActivity.kt` and the same currency conversion application window. The conversion result is now 24000.00 VND.

```
class MainActivity : AppCompatActivity() {
    private fun convertCurrency(fromSourceToTarget: Boolean) {
        val amount = binding.editTextToAmount.text.toString()
        val result = convertAmount(amount, fromCurrency =
            binding.editTextFromAmount.getText().toString())
        binding.editTextFromAmount.setText(result)
    }
    catch (e: Exception) {
        e.printStackTrace()
    }
}

private fun convertAmount(amount: Double, fromCurrency: String): Double {
    val amountInUSD = amount / (exchangeRates[fromCurrency] ?: 1.0)
    return amountInUSD * (exchangeRates[toCurrency] ?: 1.0)
}

private fun formatAmount(amount: Double): String {
    return if (amount >= 1000) {
        String.format("%.2f", amount)
    } else {
        String.format("%d", amount)
    }
}
```

Problems tab shows 10 warnings related to locale usage:

- Implicitly using the default locale is a common source of bugs: Use 'String.format(Locale, ...)' instead
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- Type: In word 'Danh' 17

Bottom status bar: 75°F Mostly cloudy, 10:04 PM, 11/10/2025

The screenshot shows the Android Studio interface with the project 'Exchange' open. The code editor displays `MainActivity.kt` which contains logic for converting currency between US Dollars and Vietnamese Dong. A floating window titled 'Chuyển Đổi Tiền Tệ' (Currency Converter) is overlaid on the screen, showing the result of a conversion from USD to VND.

```
class MainActivity : AppCompatActivity() {
    private fun convertCurrency(fromSourceToTarget: Boolean) {
        val amount = binding.editTextToAmount.text.toString()
        val result = convertAmount(amount, fromCurrency =
            binding.editTextFromAmount.getText().toString())
        binding.editTextFromAmount.setText(result)
    }
}

private fun convertAmount(amount: Double, fromCurrency: String): Double {
    val amountInUSD = amount / (exchangeRates[fromCurrency] ?: 1.0)
    return amountInUSD * (exchangeRates[toCurrency] ?: 1.0)
}

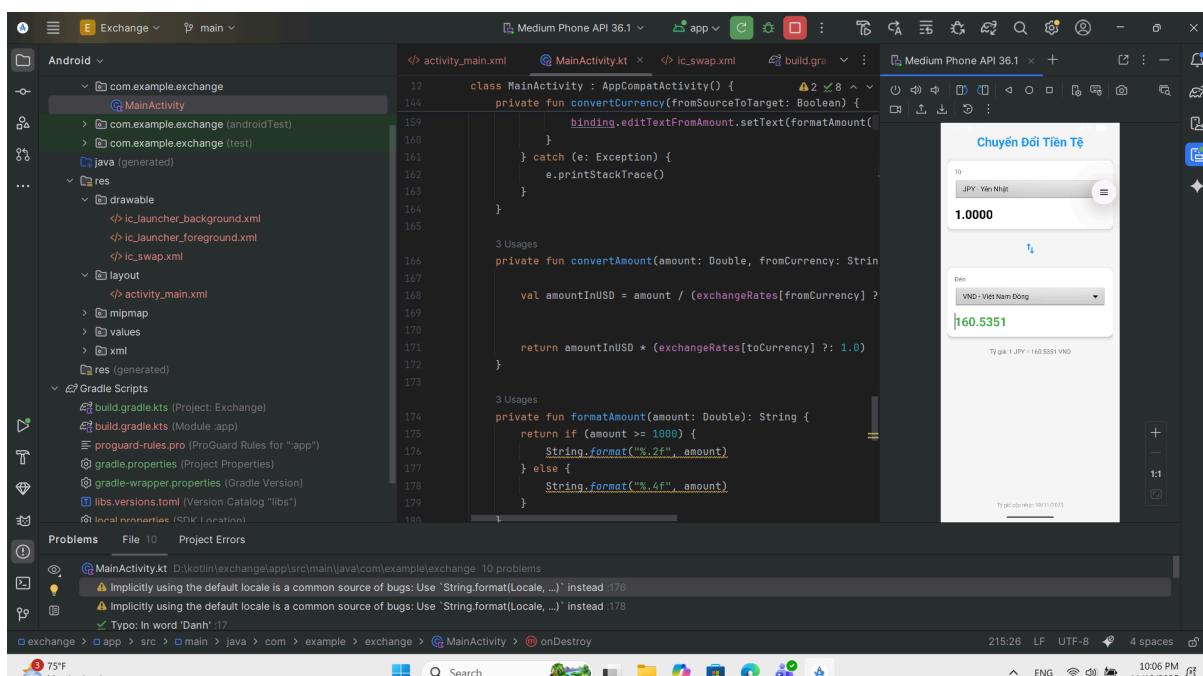
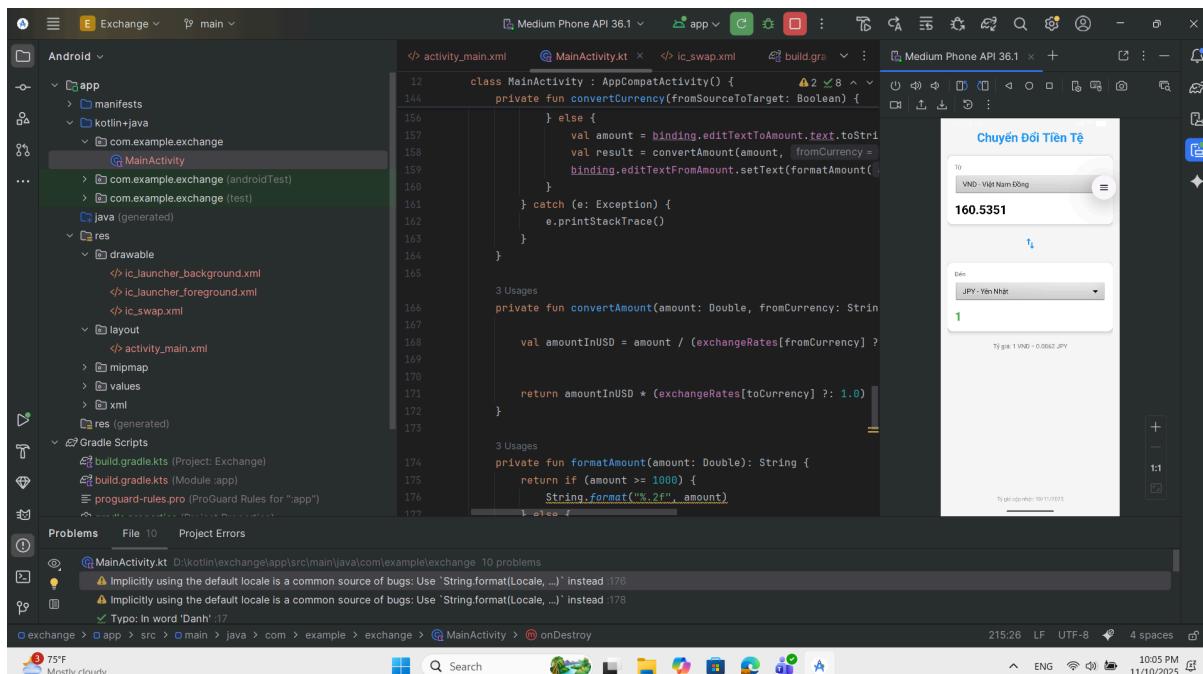
private fun formatAmount(amount: Double): String {
    return if (amount > 1000) {
        String.format("%.2f", amount)
    } else {
        amount
    }
}
```

The floating window has the following content:

Tu	Tu
VND - Việt Nam Đồng	1
USD - Đô la Mỹ	22,500
EUR - Euro	
GBP - Bảng Anh	
JPY - Yên Nhật	
CNY - Nhân dân tệ	
KRW - Won Hàn Quốc	
THB - Baht Thái Lan	
SGD - Đô la Singapore	
AUD - Đô la Úc	

At the bottom of the floating window, it says: 'Tỷ giá: 1 USD = 22,500 VND' (1 USD = 22,500 VND).

The status bar at the bottom of the screen shows the date as 11/10/2025 and the time as 10:04 PM.



sau khi bấm vào nút chuyển đổi ở giữa thì sẽ đổi thông tin của 2 bên chuyển tiền

Bài 2

The screenshot shows the Android Studio interface with the project structure on the left and the code editor on the right. The code editor displays the `MainActivity.kt` file:

```
class MainActivity : AppCompatActivity() {
    ...
    private fun generatePerfectNumbers(limit: Int): List<Int> {
        val list = mutableListOf<Int>()
        val perfects = listOf(6, 28, 496, 8128) // Các số hoàn hảo đầu
        for (p in perfects) {
            if (p < limit) {
                list.add(p)
            } else {
                break
            }
        }
        return list
    }
    ...
}
```

A floating window titled "Nhập số nguyên" (Enter integer) is overlaid on the screen, containing the number 100. Below it is another floating window with four radio button options: "Số lẻ" (Odd number), "Số nguyên tố" (Prime number), "Số hoàn hảo" (Perfect number), and "Số chẵn" (Even number). The "Số nguyên tố" option is selected.

This screenshot is identical to the one above, showing the same code editor content and floating windows. The floating window "Nhập số nguyên" now contains the number 100, and the "Số nguyên tố" radio button is selected.

chọn số nguyên tố

The screenshot shows the Android Studio interface with the code editor displaying a Kotlin file named `MainActivity.kt`. The code implements a function to generate perfect numbers up to a given limit. A floating search bar on the right side of the screen displays the number `100` and a list of number types: `Số lẻ`, `Số nguyên tố`, `Số hoàn hảo`, `Số chẵn`, `Số chính phương`, and `Số Fibonacci`. The user has selected the option for `Số chẵn`.

```

14 class MainActivity : AppCompatActivity() {
15     ...
16     ...
17     ...
18     ...
19     ...
20     ...
21     ...
22     ...
23     ...
24     ...
25     ...
26     ...
27     ...
28     ...
29     ...
30     ...
31     ...
32     ...
33     ...
34     ...
35     ...
36     ...
37     ...
38     ...
39     ...
40     ...
41     ...
42     ...
43     ...
44     ...
45     ...
46     ...
47     ...

```

chọn số chẵn

The screenshot shows the Android Studio interface with the code editor displaying the same `MainActivity.kt` file. The floating search bar now displays the number `100` and a list of number types: `Số lẻ`, `Số nguyên tố`, `Số hoàn hảo`, `Số chẵn`, `Số chính phương`, and `Số Fibonacci`. The user has selected the option for `Số chính phương`.

```

1 import android.os.Bundle
2 import androidx.appcompat.app.AppCompatActivity
3 import android.graphics.Color
4 import android.view.View
5 import android.widget.LinearLayout
6 import android.widget.RadioButton
7 import android.widget.TextView
8 import android.widget.Toast
9 import android.widget.TextChangedListener
10 import androidx.core.widget.addTextChangedListener
11 import kotlin.math.sqrt
12 import com.example.number.databinding.ActivityMainBinding
13
14 class MainActivity : AppCompatActivity() {
15
16     private lateinit var binding: ActivityMainBinding
17
18     override fun onCreate(savedInstanceState: Bundle?) {
19         super.onCreate(savedInstanceState)
20         binding = ActivityMainBinding.inflate(layoutInflater)
21         setContentView(binding.root)
22
23         radioButtons = listOf(
24             binding.rbOdd, binding.rbPrime, binding.rbPerfect,
25             binding.rbEven, binding.rbPerfectSquare, binding.rbFibonacci
26         )
27     }
28
29     ...
30     ...

```

chọn số chính phương

The screenshot shows the Android Studio interface with the project 'number' open. The code editor displays the MainActivity.kt file, which contains the following code:

```
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import android.graphics.Color
import android.view.View
import android.widget.LinearLayout
import android.widget.RadioButton
import android.widget.TextView
import android.widget.addTextChangedListener
import kotlin.math.sqrt
import com.example.number.databinding.ActivityMainBinding
```

The code defines a class MainActivity that extends AppCompatActivity. It includes a private lateinit var binding: ActivityMainBinding. The onCreate method inflates the layout and initializes a list of radio buttons. The code uses various imports from the android and androidx packages.

chọn số hoàn hảo

The screenshot shows the same Android Studio interface as the previous one, but with a different selection in the sidebar. The 'Số hoàn hảo' (Perfect number) option is now selected, while the other options like 'Số lũy thừa' (Power of two), 'Số nguyên tố' (Prime number), and 'Số斐波那契' (Fibonacci) are unselected.

The screenshot shows the Android Studio interface with the project 'number' open. The code editor displays the MainActivity.kt file. A code completion dropdown is open at the bottom right of the editor, listing suggestions for the number 1000. The suggestions include:

- Nhập số nguyên
- Số lẻ
- Số nguyên tố
- Số hoàn hảo
- Số chẵn
- Số chính phương

The suggestion "Số Fib" is selected. Below the dropdown, the code in MainActivity.kt shows the declaration of a RadioButton variable named 'radioButtons'.

```
private lateinit var radioButtons: List<RadioButton>
```

chọn số fibonacci

This screenshot is identical to the one above, showing the same code editor and code completion dropdown for the number 1000. The dropdown list includes the same suggestions: Nhập số nguyên, Số lẻ, Số nguyên tố, Số hoàn hảo, Số chẵn, Số chính phương, and Số Fib. The suggestion "Số Fib" is also selected. The code in MainActivity.kt remains the same, showing the declaration of the 'radioButtons' variable.