Лабораторная работа №9

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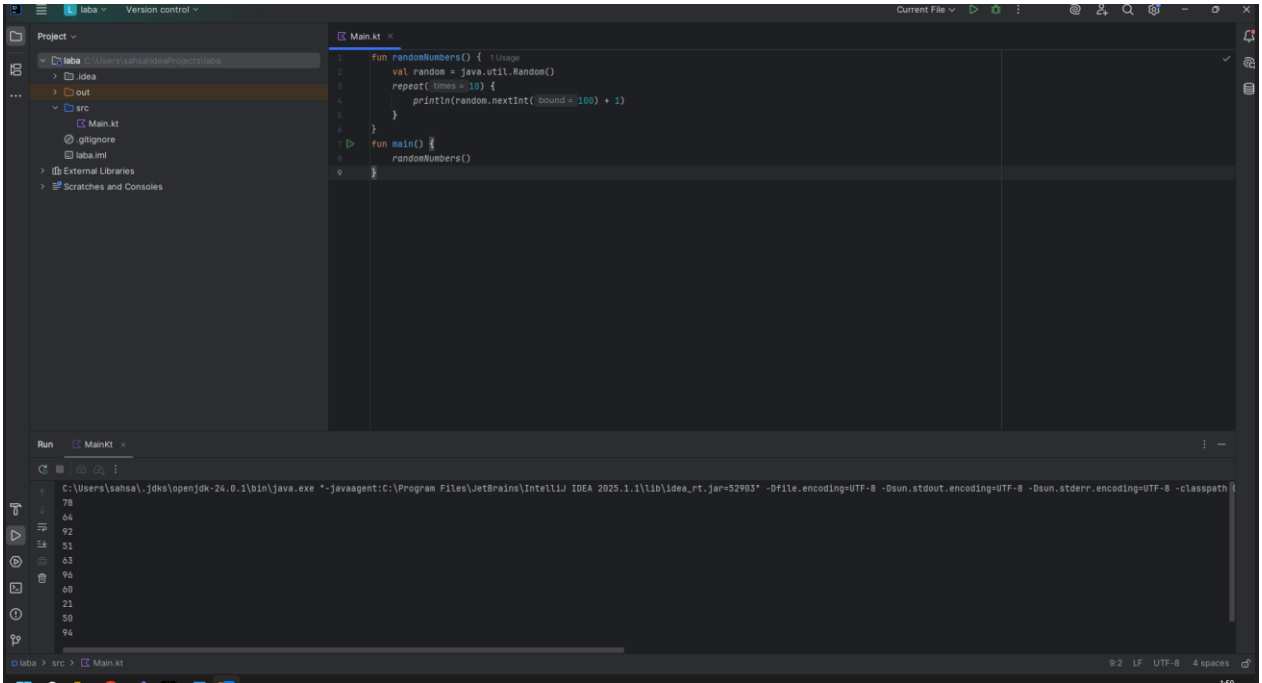
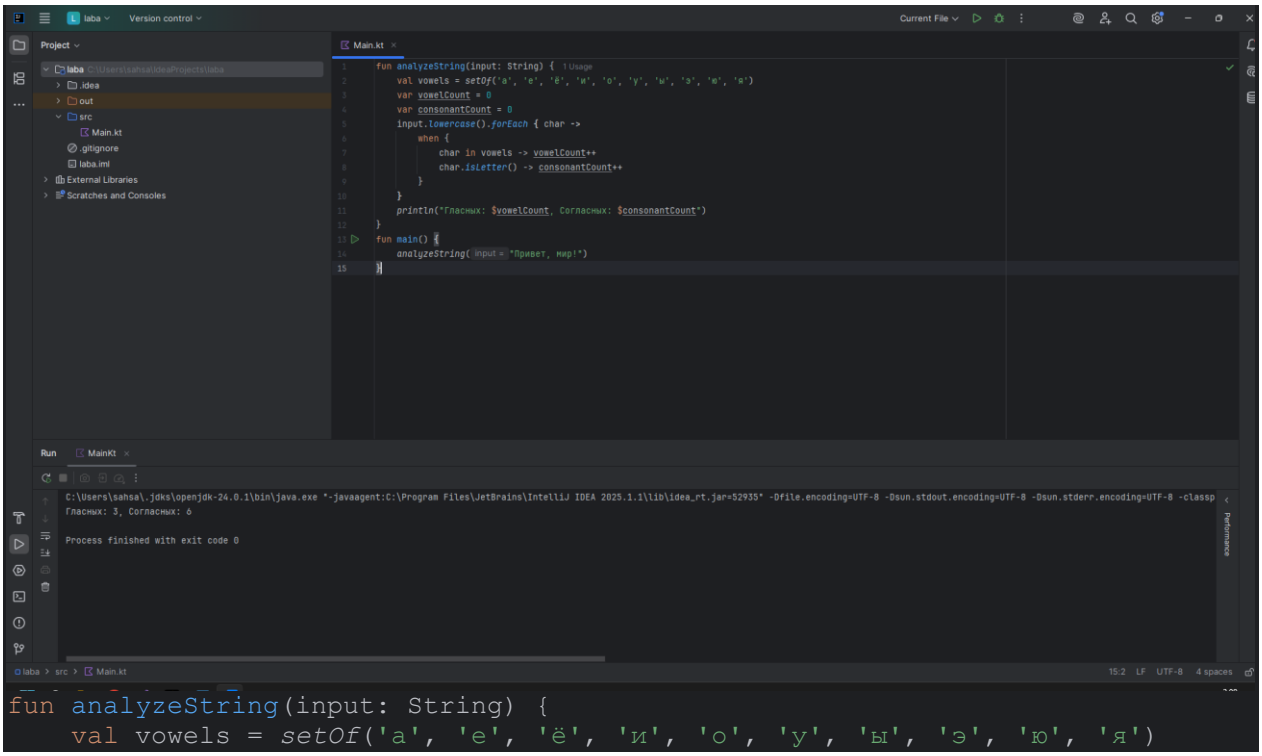
1.



```kotlin
fun randomNumbers() {
    val random = java.util.Random()
    repeat(10) {
        println(random.nextInt(100) + 1)
    }
}
fun main() {
    randomNumbers()
}
```

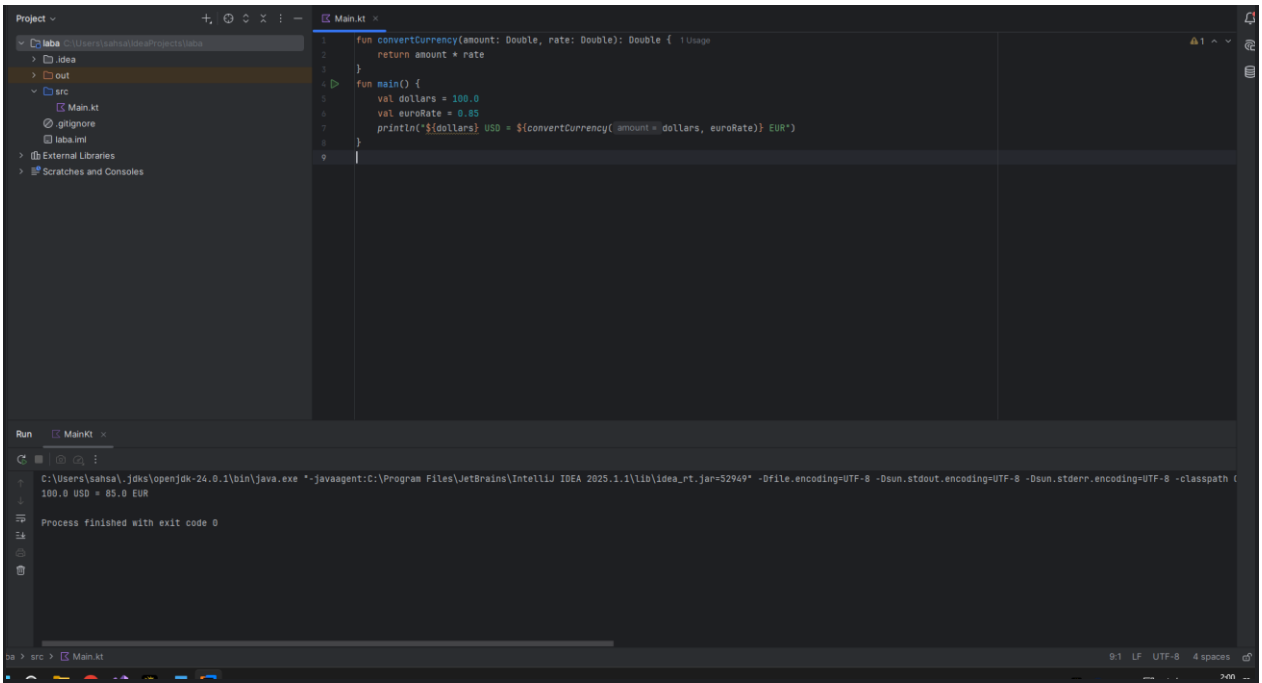
2.



```kotlin
fun analyzeString(input: String) {
    val vowels = setOf('а', 'е', 'ё', 'и', 'о', 'у', 'ы', 'э', 'ю', 'я')
```

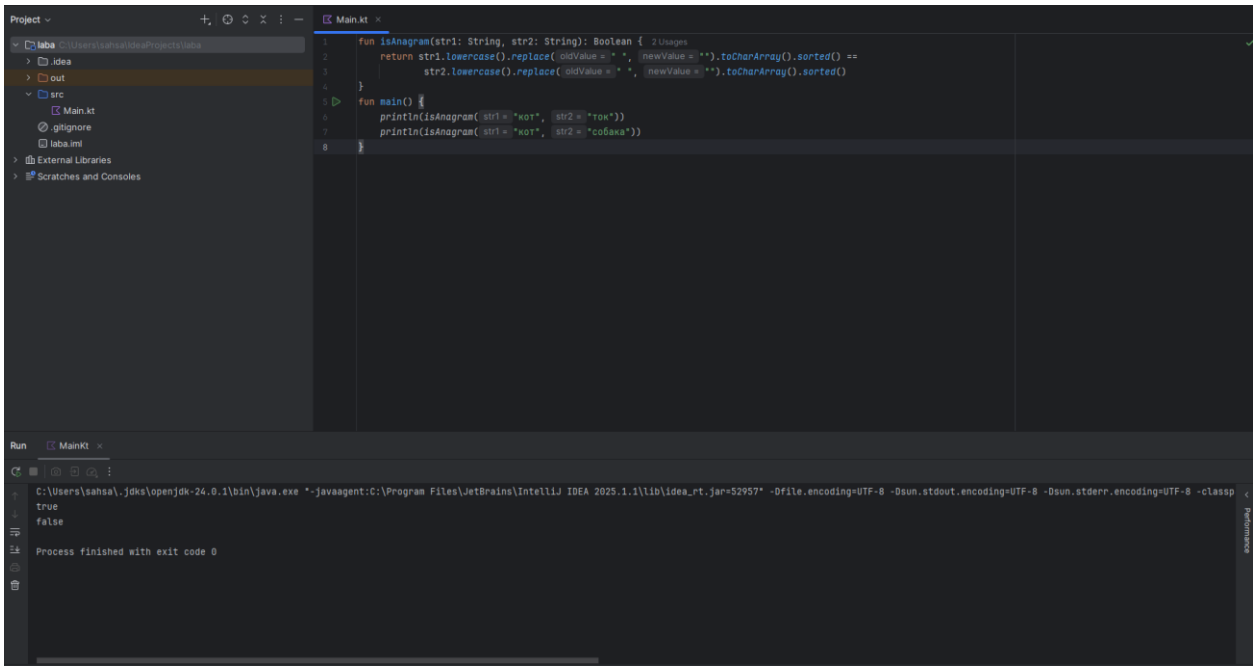
```
    var vowelCount = 0
    var consonantCount = 0
    input.lowercase().forEach { char ->
        when {
            char in vowels -> vowelCount++
            char.isLetter() -> consonantCount++
        }
    }
    println("Гласных: $vowelCount, Согласных: $consonantCount")
}
fun main() {
    analyzeString("Привет, мир!")
}
```

3.



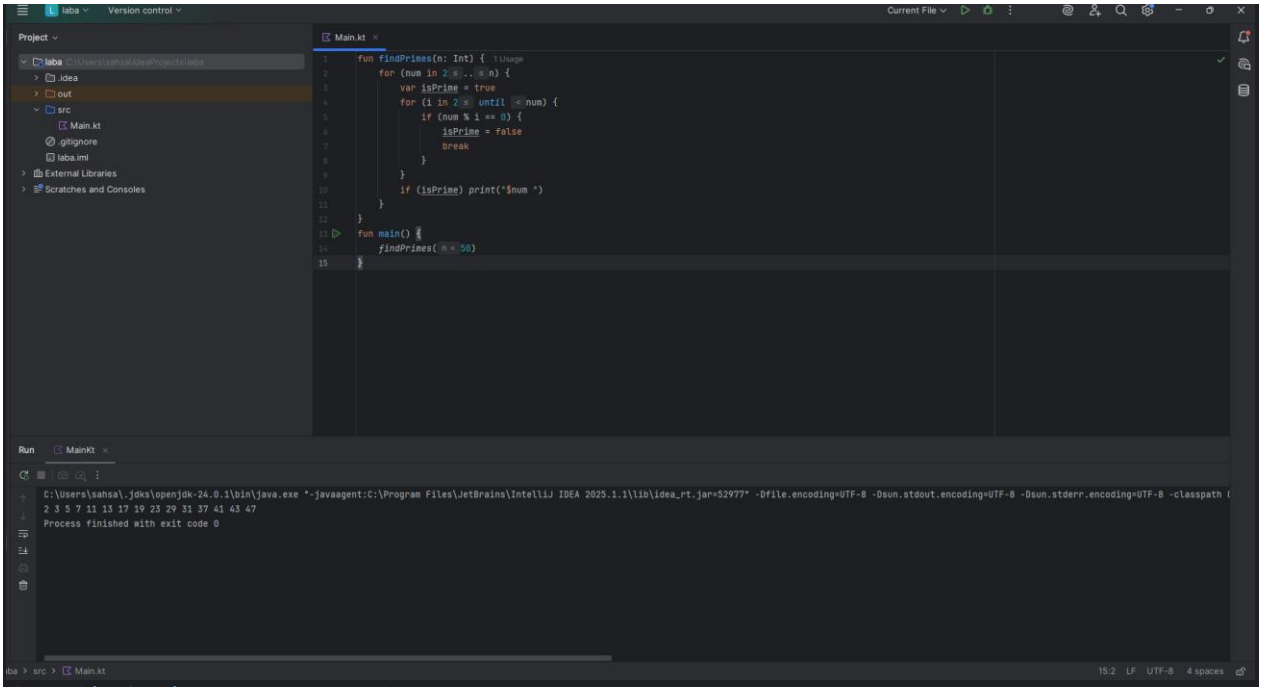

```
fun convertCurrency(amount: Double, rate: Double): Double {
    return amount * rate
}
fun main() {
    val dollars = 100.0
    val euroRate = 0.85
    println("${dollars} USD = ${convertCurrency(dollars, euroRate)} EUR")
}
```

4.




```
fun isAnagram(str1: String, str2: String): Boolean {
    return str1.lowercase().replace(" ", "").toCharArray().sorted() ==
            str2.lowercase().replace(" ", "").toCharArray().sorted()
}
fun main() {
    println(isAnagram("кот", "ток"))
    println(isAnagram("кот", "собака"))
}
```

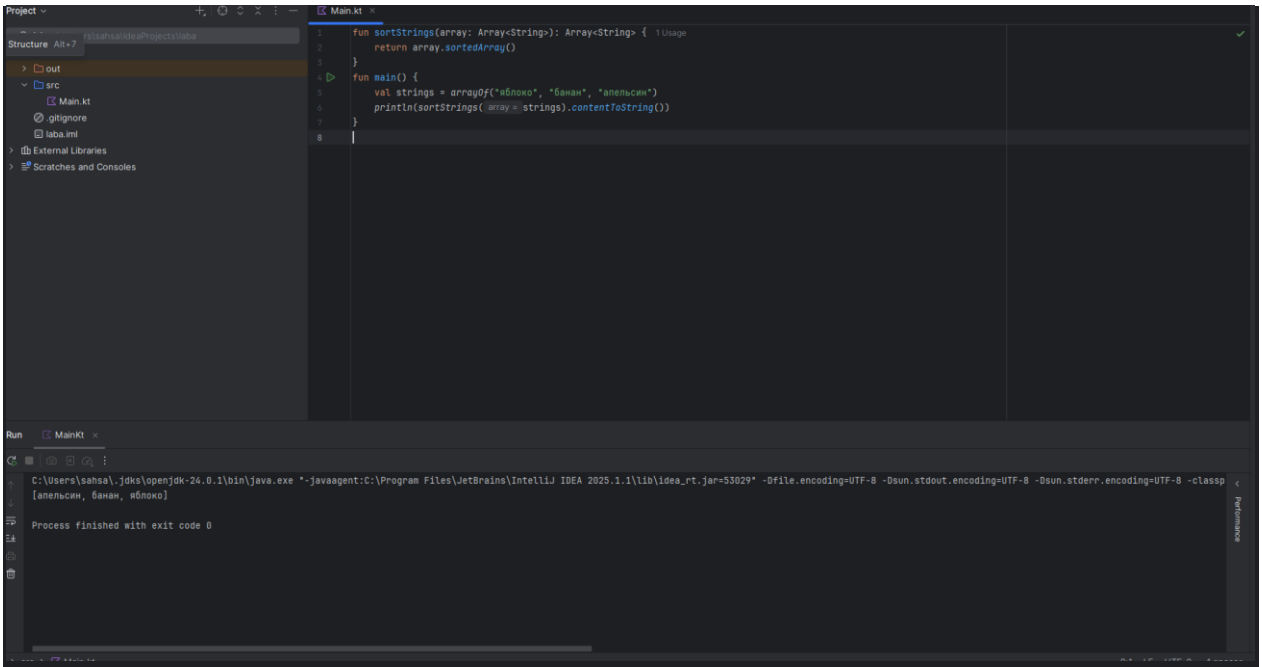
5.




```
fun findPrimes(n: Int) {
    for (num in 2..n) {
        var isPrime = true
        for (i in 2 until num) {
            if (num % i == 0) {
                isPrime = false
                break
            }
```

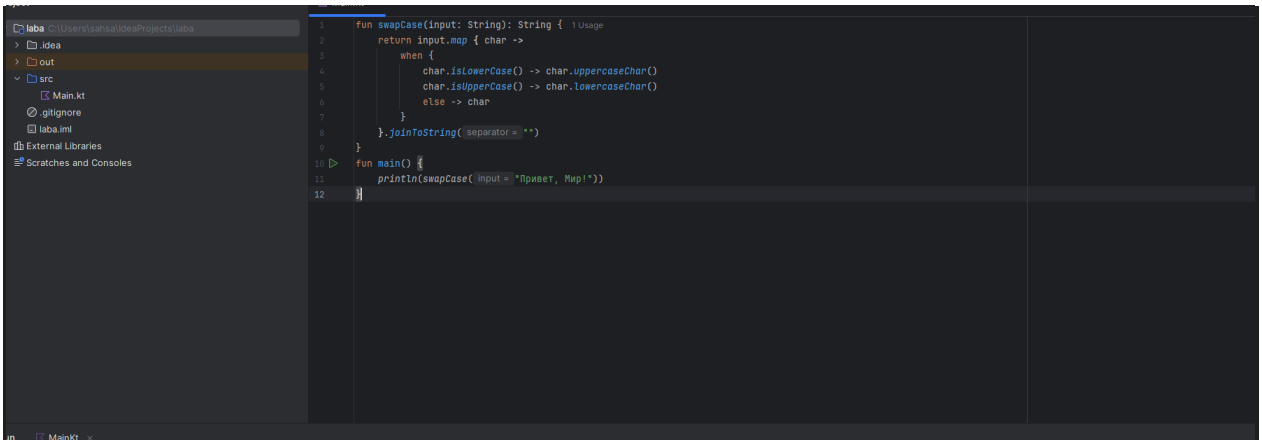
```
            }
            if (isPrime) print("$num ")
        }
    }
    fun main() {
        findPrimes(50)
    }
```

6.



```
fun sortStrings(array: Array<String>): Array<String> {
    return array.sortedArray()
}
fun main() {
    val strings = arrayOf("яблоко", "банан", "апельсин")
    println(sortStrings(strings).contentToString())
}
```

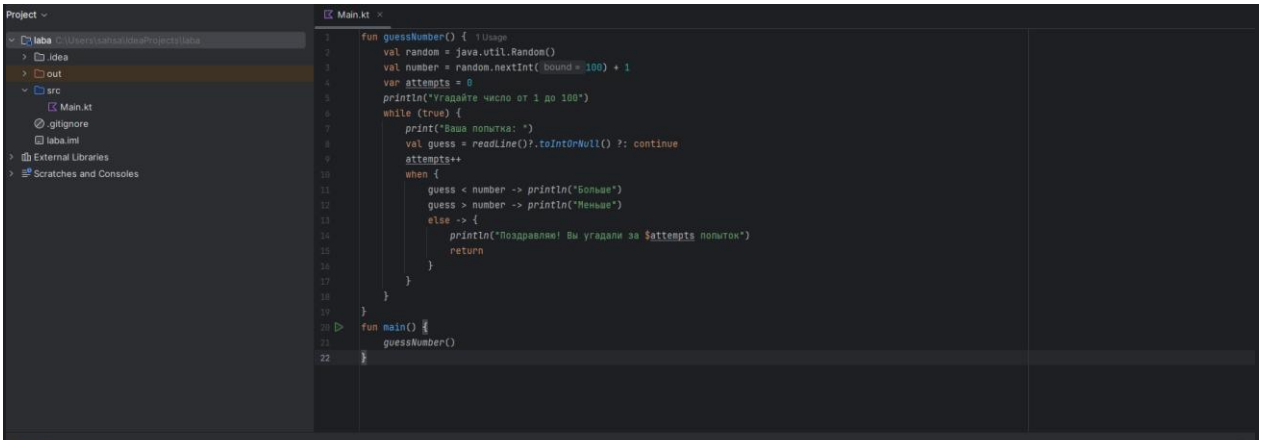
7.



```
fun swapCase(input: String): String {
    return input.map { char ->
        when {
            char.isLowerCase() -> char.uppercaseChar()
```

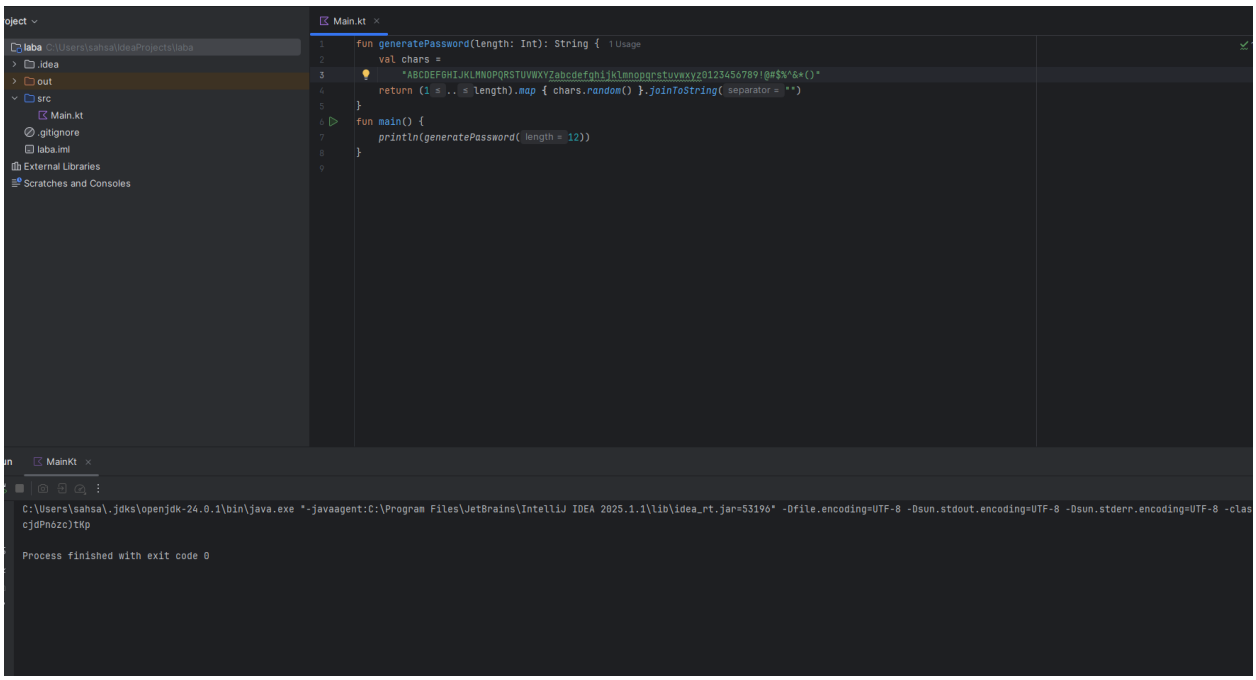
```
            char.isUpperCase() -> char.lowercaseChar()
            else -> char
        }
    }.joinToString("")
}
fun main() {
    println(swapCase("Привет, Мир!"))
}
```

8.




```
fun guessNumber() {
    val random = java.util.Random()
    val number = random.nextInt(100) + 1
    var attempts = 0
    println("Угадайте число от 1 до 100")
    while (true) {
        print("Ваша попытка: ")
        val guess = readLine()?.toIntOrNull() ?: continue
        attempts++
        when {
            guess < number -> println("Больше")
            guess > number -> println("Меньше")
            else -> {
                println("Поздравляю! Вы угадали за $attempts попыток")
                return
            }
        }
    }
}
fun main() {
    guessNumber()
}
```

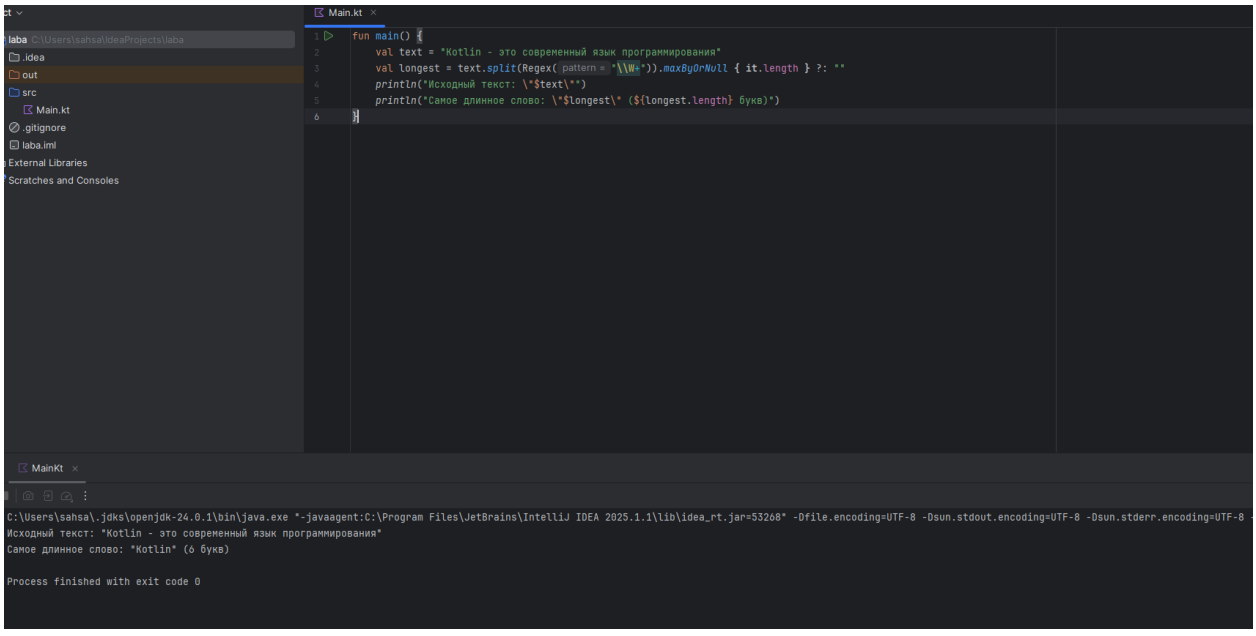
9.




```
fun generatePassword(length: Int): String {
    val chars =

"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!@#$%^&*()"
    return (1..length).map { chars.random() }.joinToString("")
}
fun main() {
    println(generatePassword(12))
}
```

10.




```
fun main() {
    val text = "Kotlin - это современный язык программирования"
    val longest = text.split(Regex("\\W+")).maxByOrNull { it.length } ?: ""
    println("Исходный текст: \"$text\"")
    println("Самое длинное слово: \"$longest\" (${longest.length} букв)")
}
```