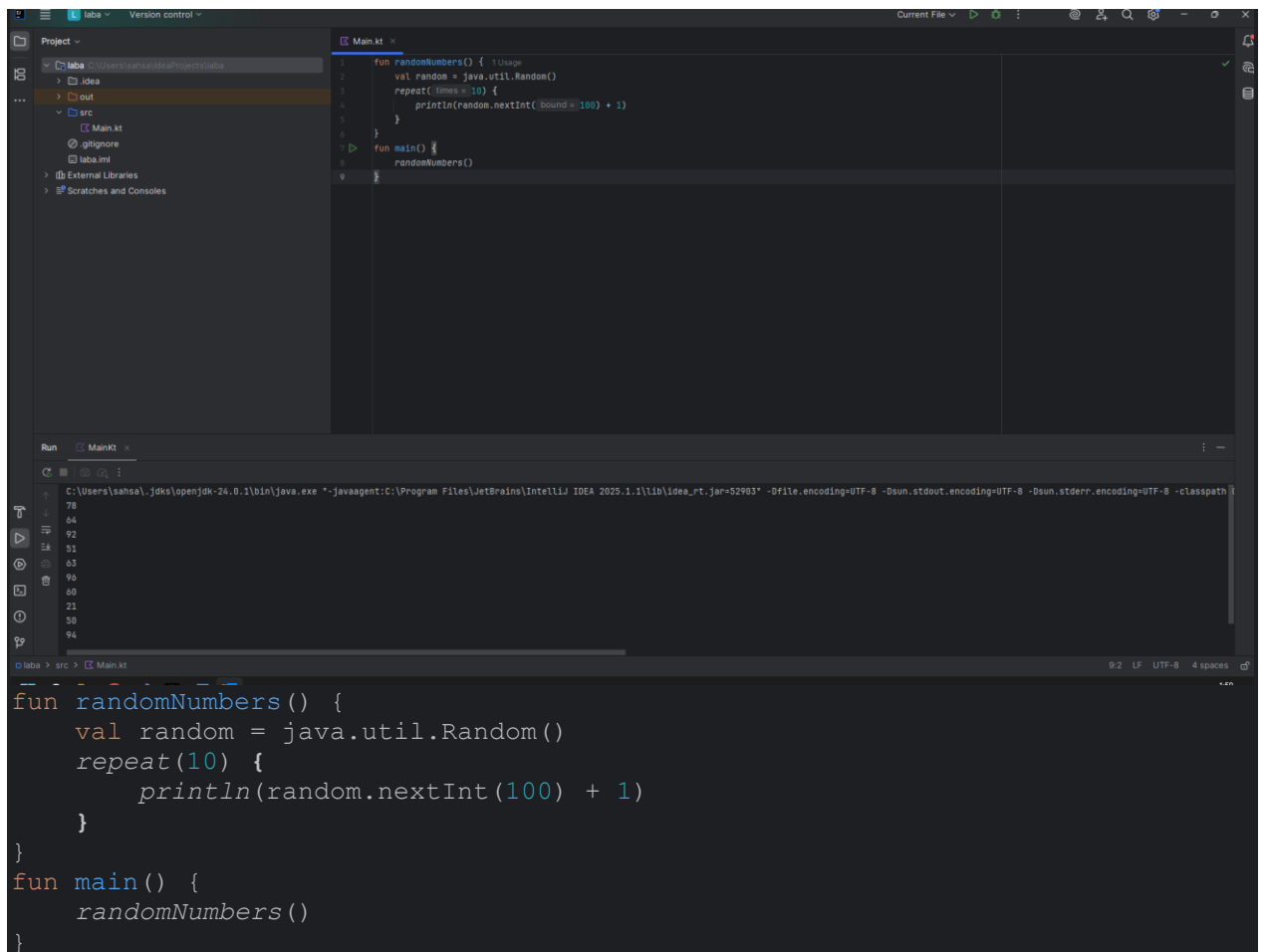


Лабораторная работа №9

Харахардин А. ИС233

1.



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

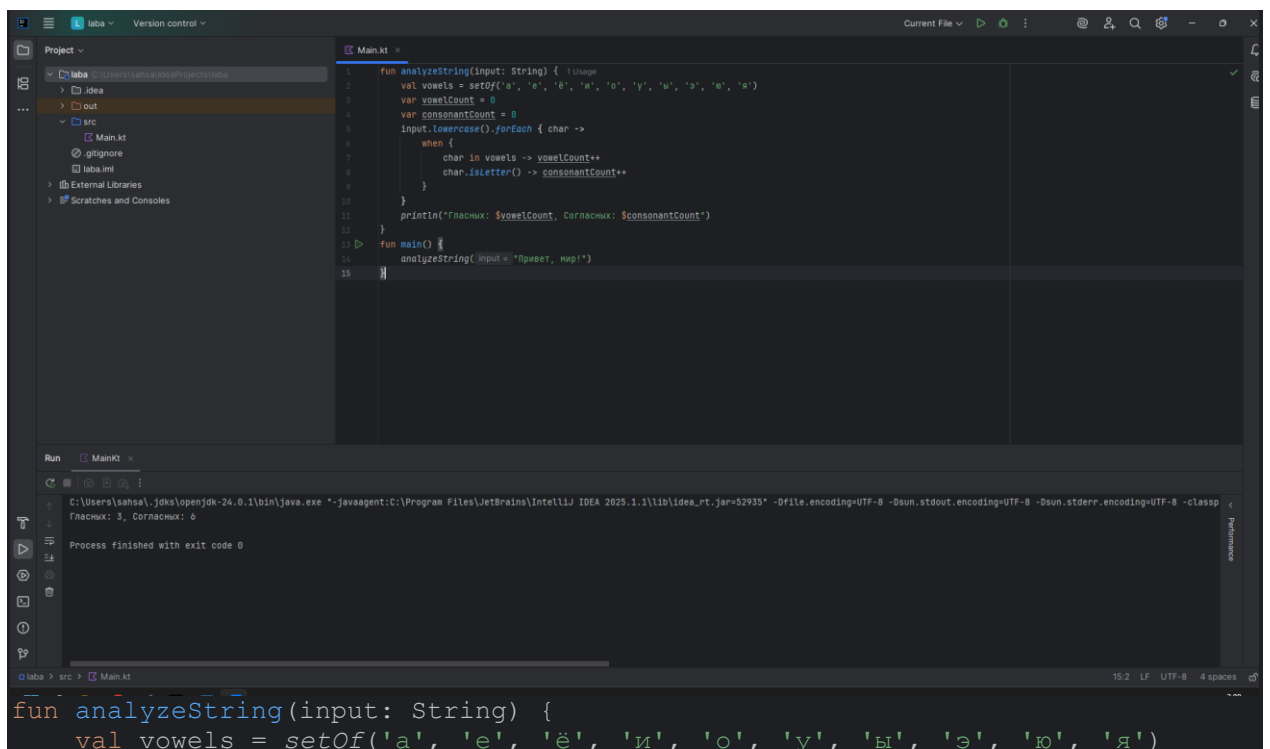
fun main() {
    randomNumbers()
}
```

Run MainKt

C:\Users\sahsa\.jds\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=52903 -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath ...

78
64
92
51
63
96
69
21
58
94

2.



```
fun analyzeString(input: String) {
    val vowels = setOf('a', 'e', 'ё', 'и', 'o', 'y', 'ы', 'я', 'а', 'е')
    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(input = "mpuwer, mwp")
}
```

Run MainKt

C:\Users\sahsa\.jds\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=52935 -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath ...

Гласных: 3, Согласных: 6

Process finished with exit code 0

```

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.

The screenshot shows an IDE with a project named 'Main.kt'. The code defines a function `convertCurrency` and a `main` function. The `main` function sets `dollars = 100.0` and `euroRate = 0.85`, then prints the result of `convertCurrency(dollars, euroRate)` as EUR.

```

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")
}

```

The Run window shows the command: `C:\Users\sahsa\jdk\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar-S2949* -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath C:\Users\sahsa\jdk\openjdk-24.0.1\bin\java.exe 100.0 USD = 85.0 EUR`. The process finished with exit code 0.

```

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.

```

1 fun isAnagram(str1: String, str2: String): Boolean {
2     return str1.lowercase().replace(" ", "").toCharArray().sorted() ==
3         str2.lowercase().replace(" ", "").toCharArray().sorted()
4 }
5
6 fun main() {
7     println(isAnagram("кот", "ТОК"))
8     println(isAnagram("кот", "кобака"))
9 }

```

```

C:\Users\sahsa\.jdk\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=52957* -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath
true
false
Process finished with exit code 0

```

```

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", "кобака"))
}

```

5.

```

1 fun findPrimes(n: Int) {
2     for (num in 2..n) {
3         var isPrime = true
4         for (i in 2..until(num)) {
5             if (num % i == 0) {
6                 isPrime = false
7                 break
8             }
9         }
10        if (isPrime) print("$num ")
11    }
12 }
13
14 fun main() {
15     findPrimes(50)
16 }

```

```

C:\Users\sahsa\.jdk\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=52977* -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
Process finished with exit code 0

```

```

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.

The screenshot shows the IntelliJ IDEA IDE with a Kotlin project named 'Main.kt'. The code defines a function `sortStrings` that takes an `Array<String>` and returns a sorted array. The `main` function uses `arrayOf` to create an array of strings: "яблоко", "банан", and "апельсин". It then calls `sortStrings` and prints the result using `println`.

```

1 fun sortStrings(array: Array<String>): Array<String> {
2     return array.sortedArray()
3 }
4 fun main() {
5     val strings = arrayOf("яблоко", "банан", "апельсин")
6     println(sortStrings(array = strings).contentToString())
7 }

```

The Run window at the bottom shows the command executed: `C:\Users\sahsa\jdk\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=53029* -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath [апельсин, банан, яблоко]`. The output is: `апельсин, банан, яблоко`. The process finished with exit code 0.

```

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

```

7.

The screenshot shows the IntelliJ IDEA IDE with a Kotlin project named 'Main.kt'. The code defines a function `swapCase` that takes a `String` and returns a new string where each character's case is swapped (lowercase to uppercase and vice versa). The `main` function calls `swapCase` with the input "Привет, мир!" and prints the result.

```

1 fun swapCase(input: String): String {
2     return input.map { char ->
3         when {
4             char.isLowerCase() -> char.uppercaseChar()
5             char.isUpperCase() -> char.lowercaseChar()
6             else -> char
7         }
8     }.joinToString(separator = "")
9 }
10 fun main() {
11     println(swapCase(input = "Привет, мир!"))
12 }

```

The Run window at the bottom shows the command executed: `C:\Users\sahsa\jdk\openjdk-24.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=53068* -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath nP#BEY, mIP!`. The output is: `пРИВЕТ, МИР!`. The process finished with exit code 0.

```

fun swapCase(input: String): String {
    return input.map { char ->
        when {
            char.isLowerCase() -> char.uppercaseChar()
            char.isUpperCase() -> char.lowercaseChar()
            else -> char
        }
    }.joinToString(separator = "")
}
fun main() {
    println(swapCase(input = "Привет, мир!"))
}

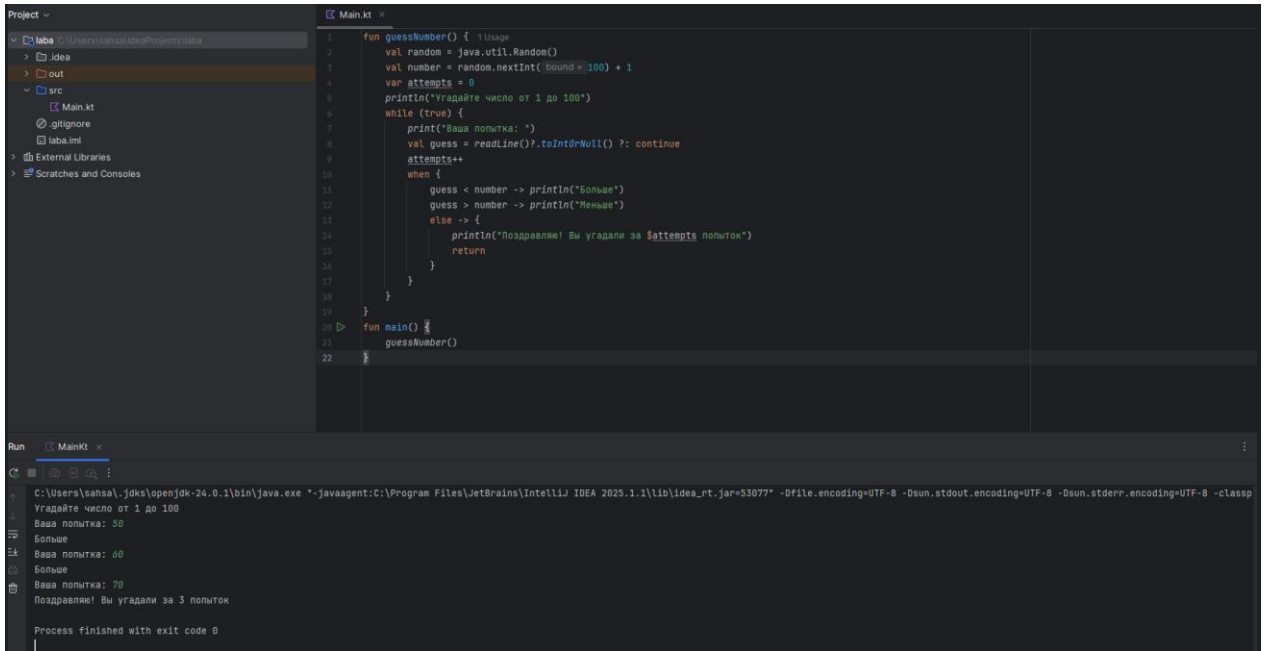
```

```

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

```

8.



```

Project ~
  labas C:\Users\sahsa\IdeaProjects\labas
    > idea
    > out
    > src
      Main.kt
    > .gitignore
    > labas.iml
  > External Libraries
  > Scratches and Consoles

Main.kt
1 fun guessNumber() { // Usage
2     val random = java.util.Random()
3     val number = random.nextInt(bound = 100) + 1
4     var attempts = 0
5     println("Угадайте число от 1 до 100")
6     while (true) {
7         print("Ваша попытка: ")
8         val guess = readLine()?.toIntOrNull() ?: continue
9         attempts++
10        when {
11            guess < number -> println("Больше")
12            guess > number -> println("Меньше")
13            else -> {
14                println("Поздравляю! Вы угадали за $attempts попыток")
15                return
16            }
17        }
18    }
19 }
20 fun main() {
21     guessNumber()
22 }

Run Main.kt
C:\Users\sahsa\jdk\openjdk-24.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\lib\idea_rt.jar=53077:C:\Program Files\JetBrains\IntelliJ IDEA 2025.1.1\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath
Угадайте число от 1 до 100
Ваша попытка: 50
Больше
Ваша попытка: 60
Больше
Ваша попытка: 70
Поздравляю! Вы угадали за 3 попыток
Process finished with exit code 0

```

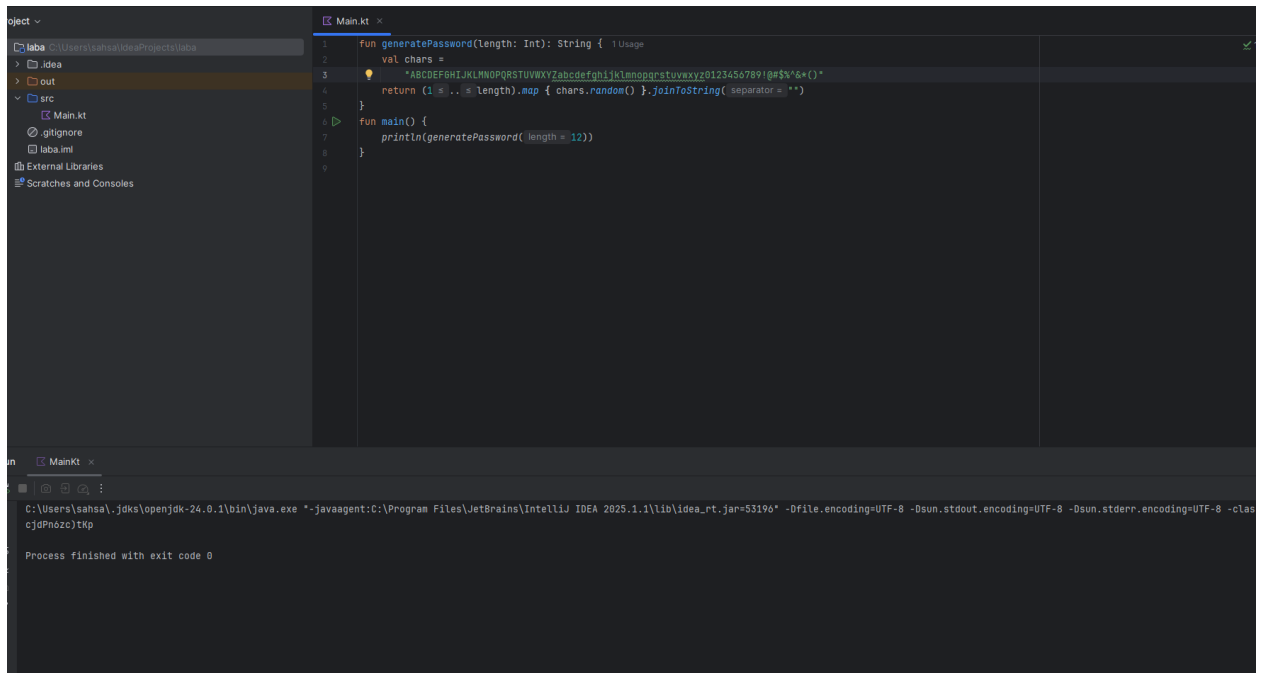
```

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()
}

```

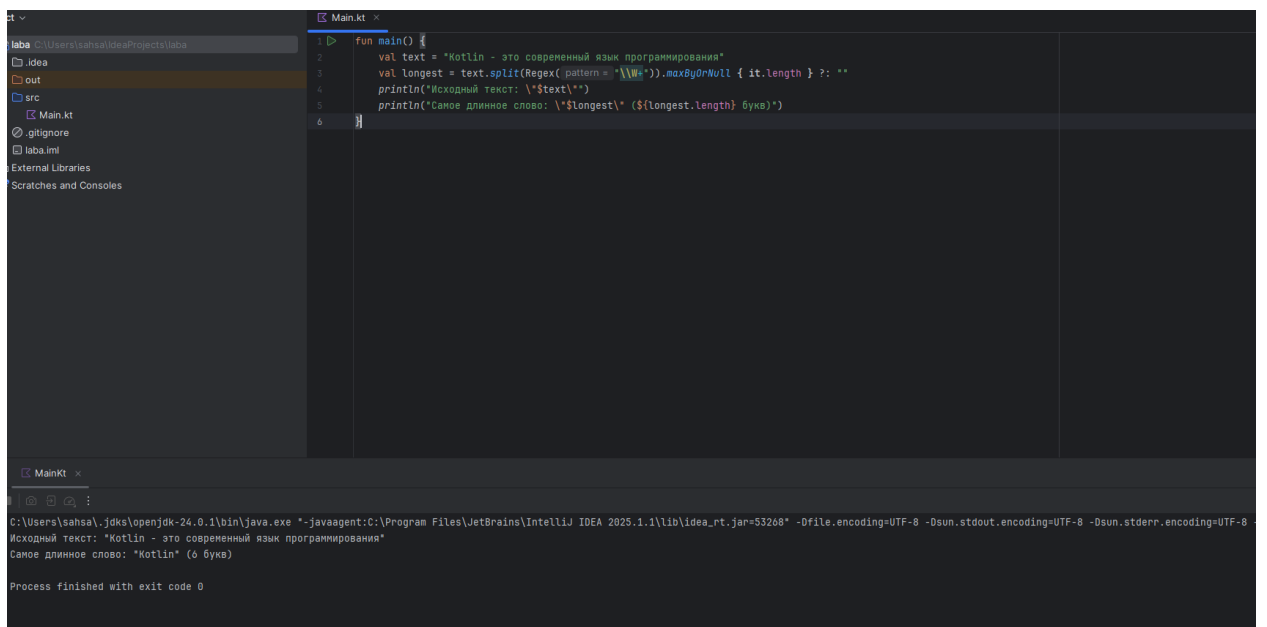
9.



```
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)")
}
```