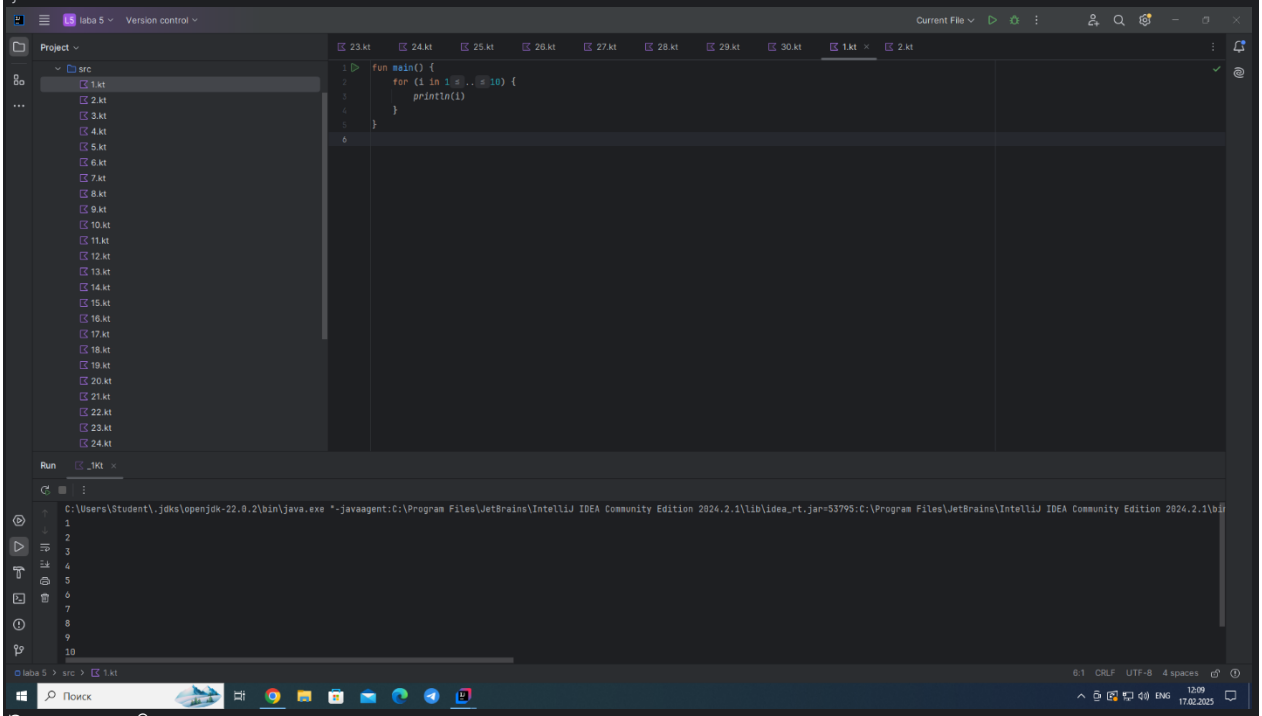
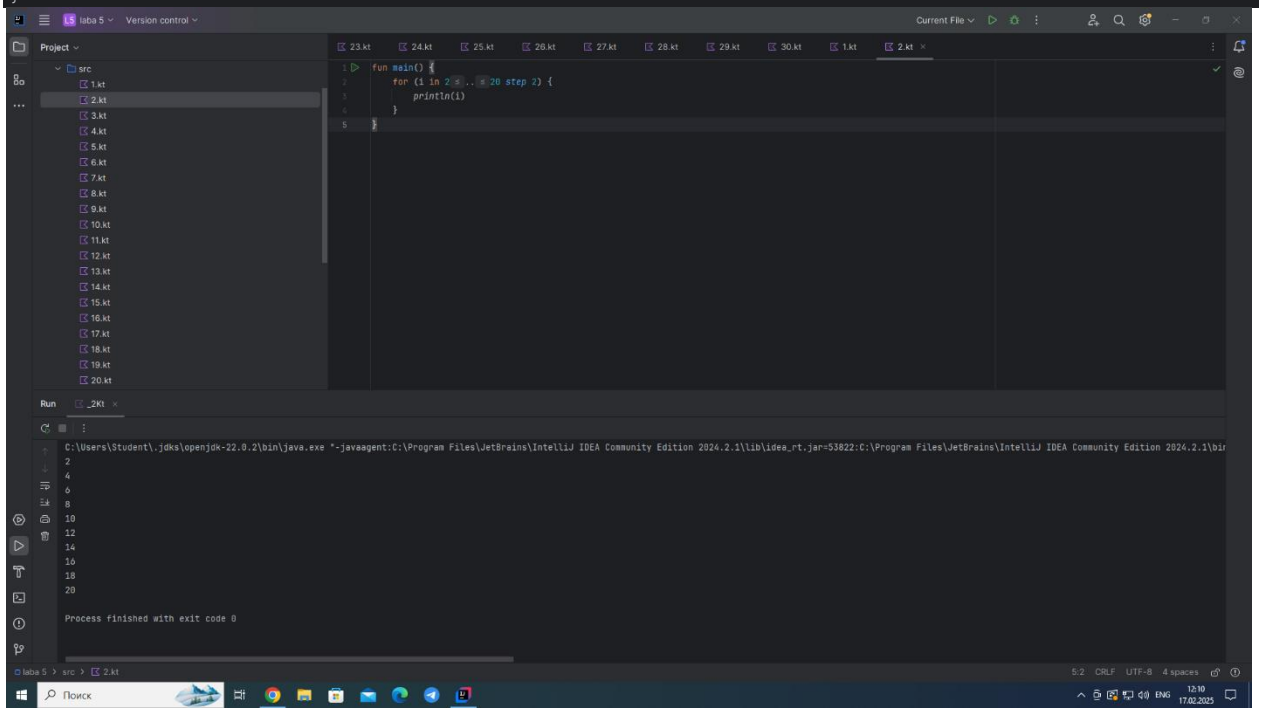
Задание 1:

```
fun main() {
    for (i in 1..10) {
        println(i)
    }
}
```



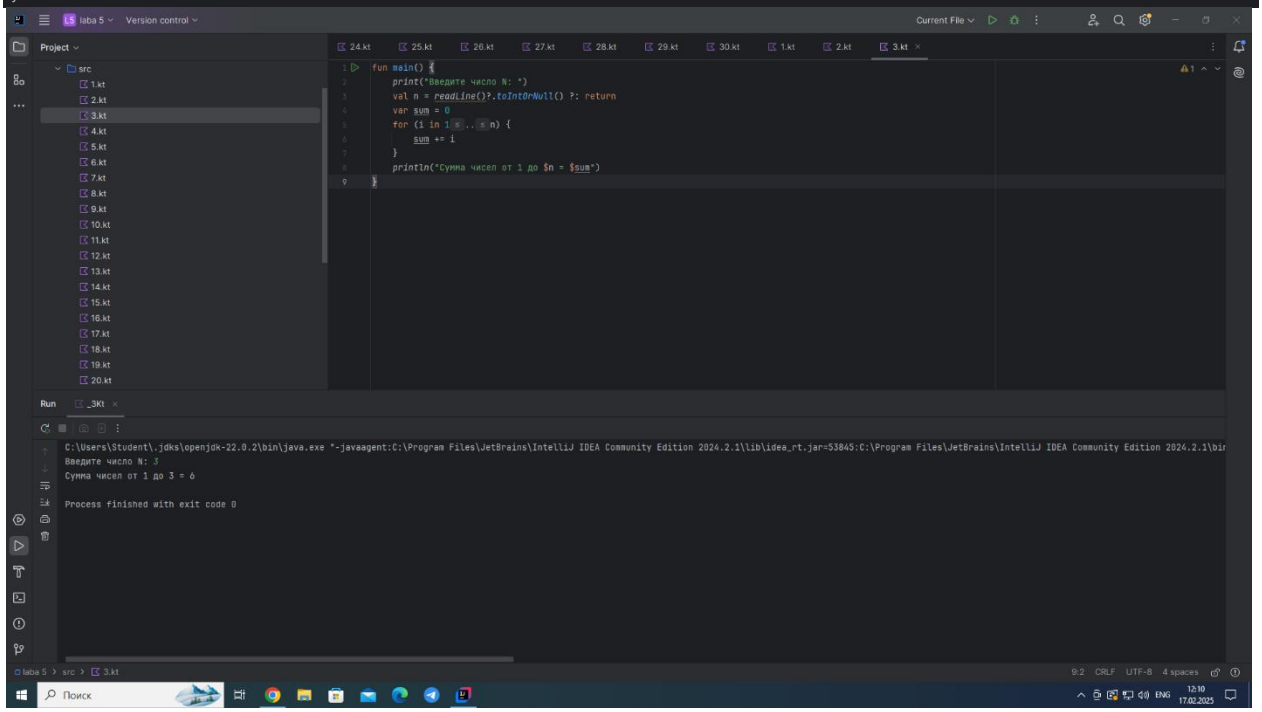
Задание 2:

```
fun main() {
    for (i in 2..20 step 2) {
        println(i)
    }
}
```



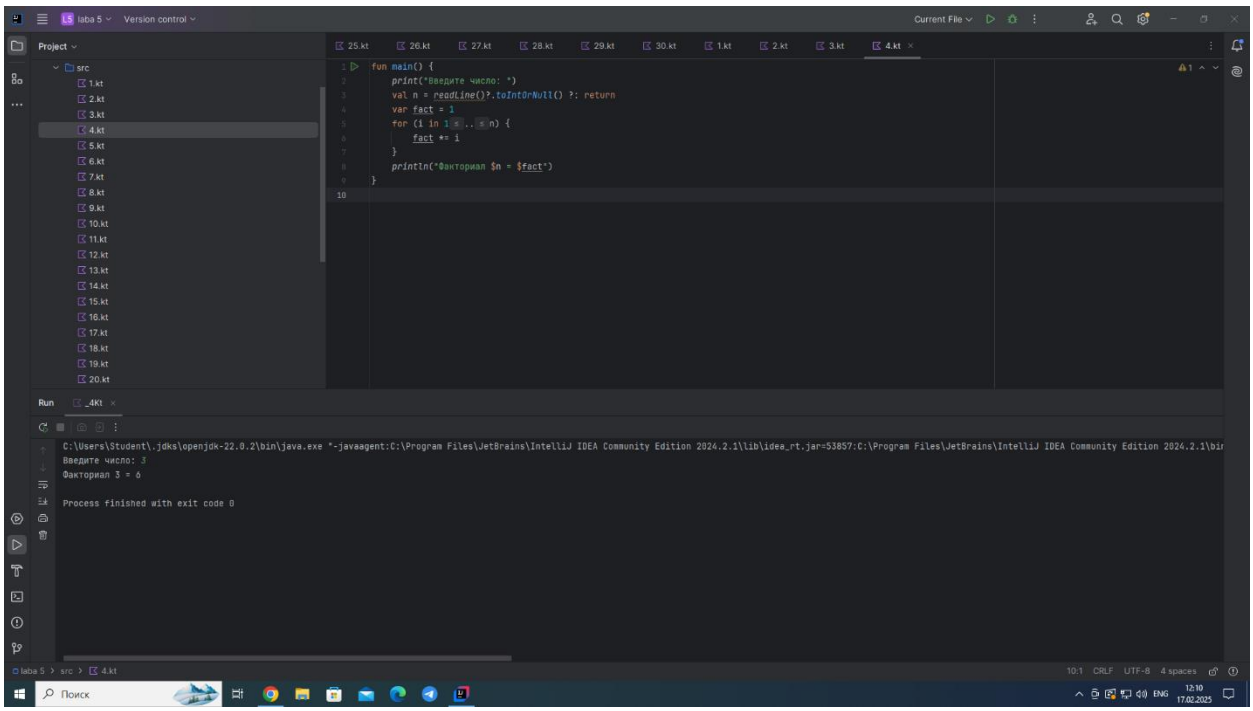
Задание 3:

```
fun main() {
    print("Введите число N: ")
    val n = readLine()?.toIntOrNull() ?: return
    var sum = 0
    for (i in 1..n) {
        sum += i
    }
    println("Сумма чисел от 1 до $n = $sum")
}
```



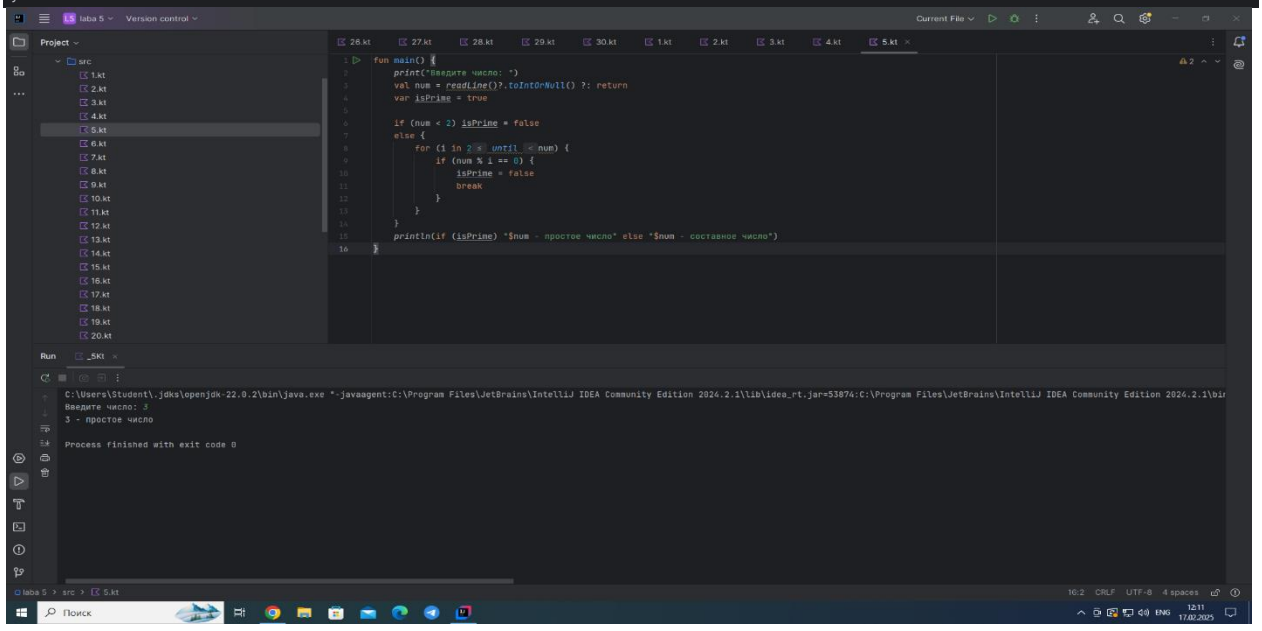
Задание 4:

```
fun main() {
    print("Введите число: ")
    val n = readLine()?.toIntOrNull() ?: return
    var fact = 1
    for (i in 1..n) {
        fact *= i
    }
    println("Факториал $n = $fact")
}
```



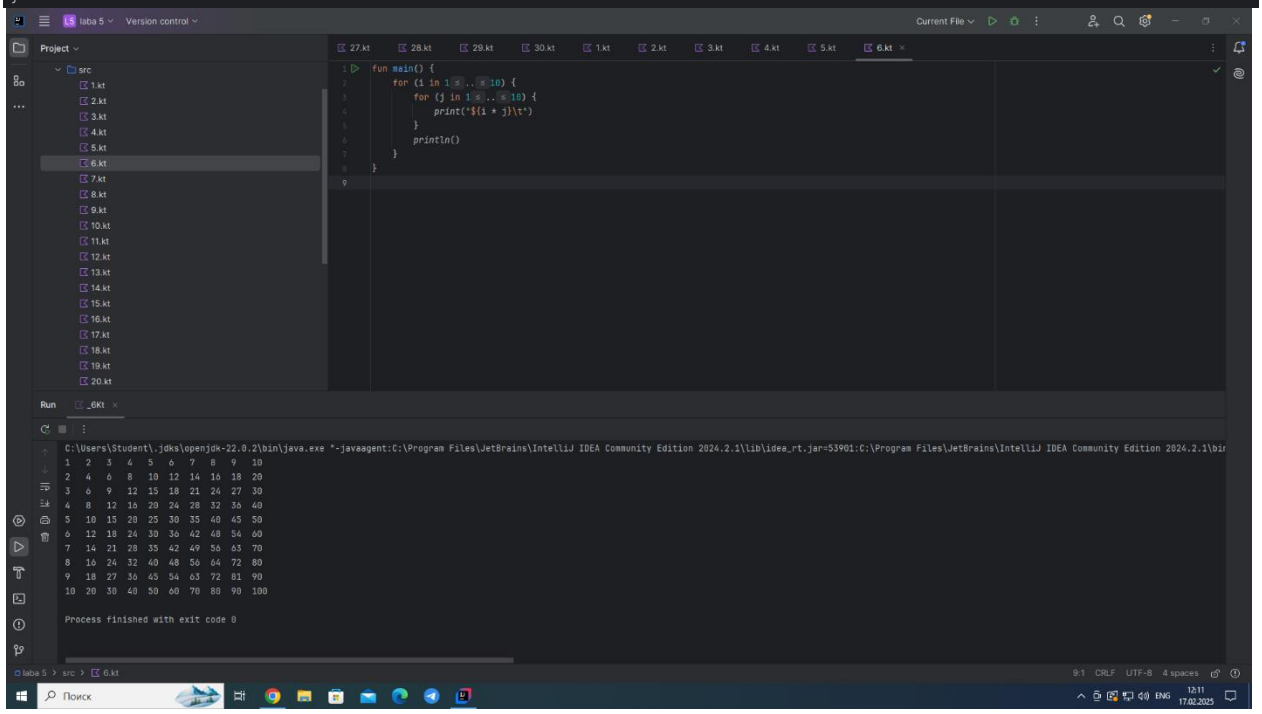
Задание 5:

```
fun main() {
    print("Введите число: ")
    val num = readLine()?.toIntOrNull() ?: return
    var isPrime = true

    if (num < 2) isPrime = false
    else {
        for (i in 2 until num) {
            if (num % i == 0) {
                isPrime = false
                break
            }
        }
    }
    println(if (isPrime) "$num - простое число" else "$num - составное
число")
}
```



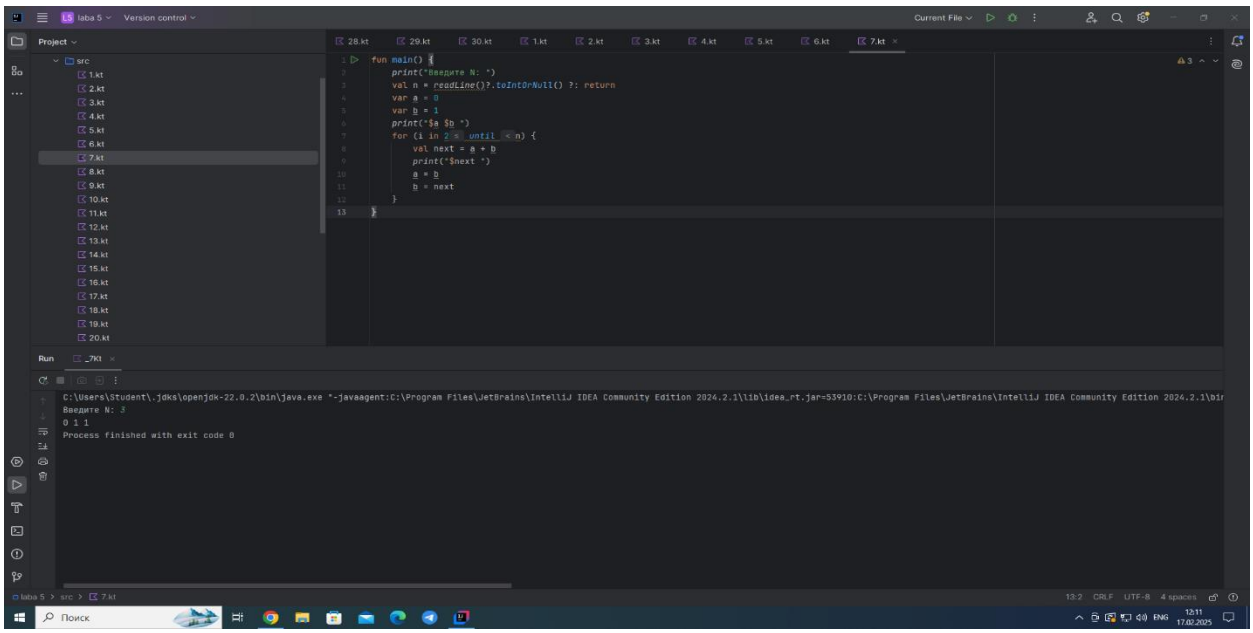
Задание 6:

```
fun main() {
    for (i in 1..10) {
        for (j in 1..10) {
            print("${i * j}\t")
        }
        println()
    }
}
```



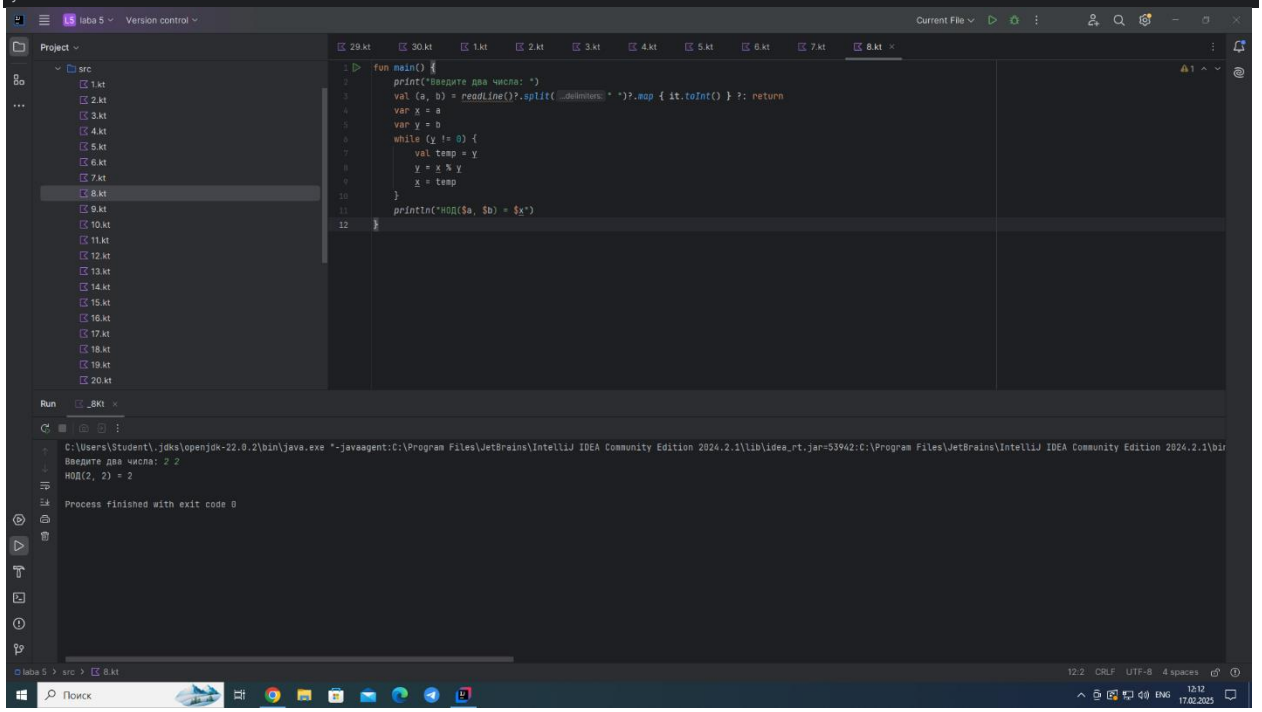
Задание 7:

```
fun main() {
    print("Введите N: ")
    val n = readLine()?.toIntOrNull() ?: return
    var a = 0
    var b = 1
    print("$a $b ")
    for (i in 2 until n) {
        val next = a + b
        print("$next ")
        a = b
        b = next
    }
}
```



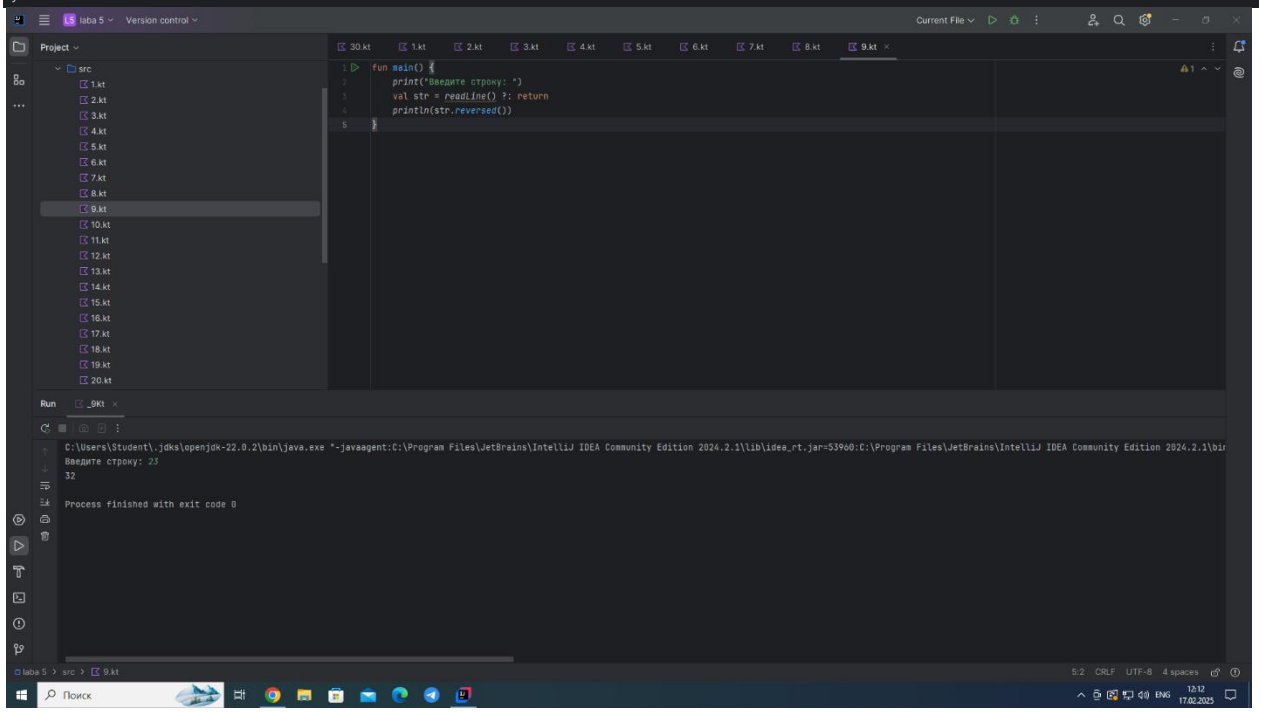
Задание 8:

```
fun main() {
    print("Введите два числа: ")
    val (a, b) = readLine()?.split(" ")?.map { it.toInt() } ?: return
    var x = a
    var y = b
    while (y != 0) {
        val temp = y
        y = x % y
        x = temp
    }
    println("НОД($a, $b) = $x")
}
```



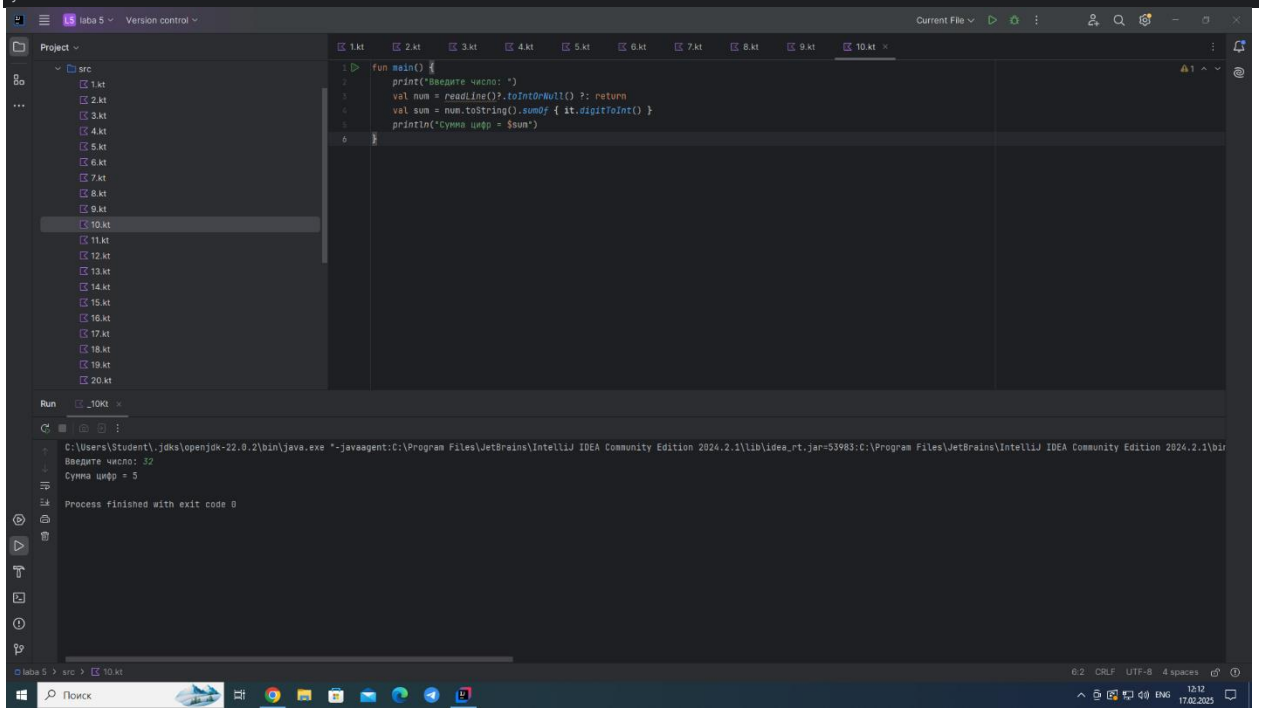
Задание 9:

```
fun main() {
    print("Введите строку: ")
    val str = readLine() ?: return
    println(str.reversed())
}
```



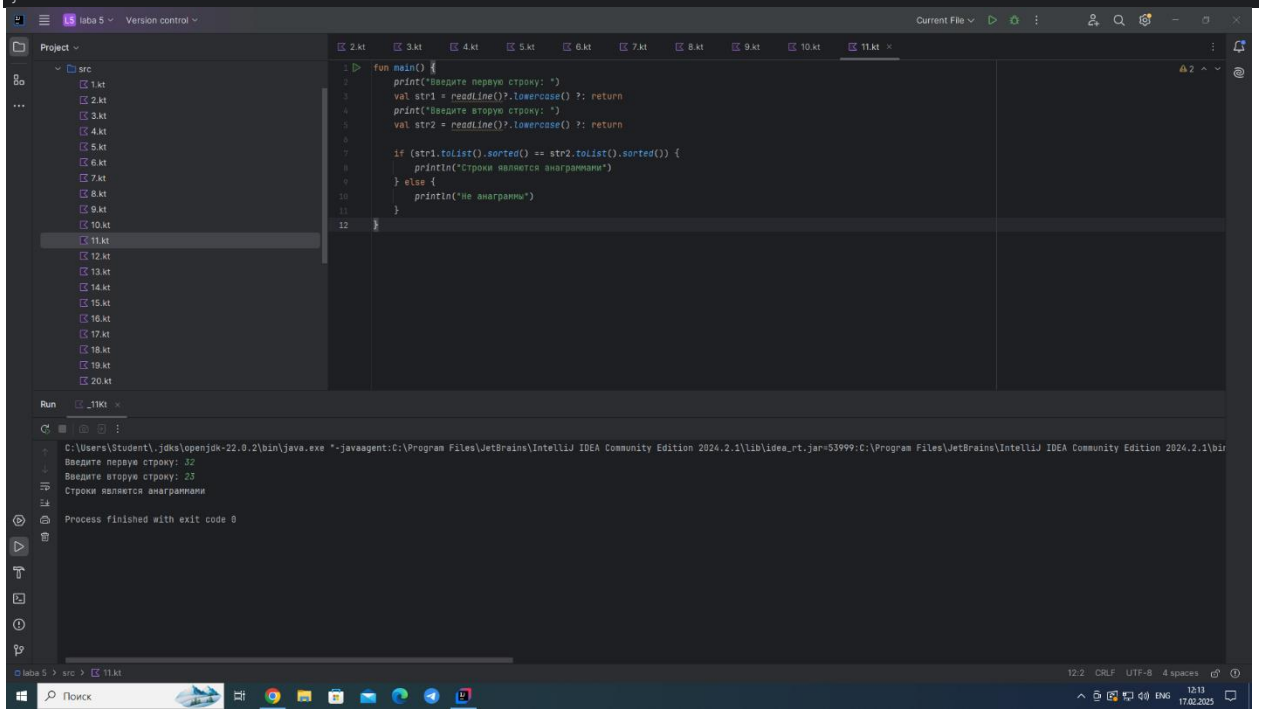
Задание 10:

```
fun main() {
    print("Введите число: ")
    val num = readLine()?.toIntOrNull() ?: return
    val sum = num.toString().sumOf { it.digitToInt() }
    println("Сумма цифр = $sum")
}
```



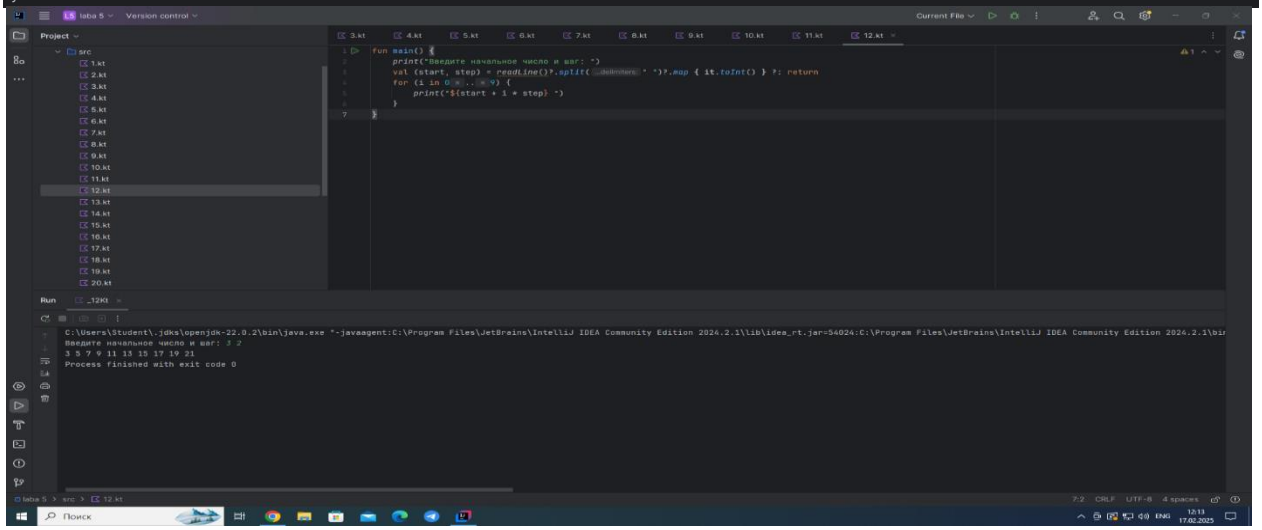
Задание 11:

```
fun main() {
    print("Введите первую строку: ")
    val str1 = readLine()?.lowercase() ?: return
    print("Введите вторую строку: ")
    val str2 = readLine()?.lowercase() ?: return

    if (str1.toList().sorted() == str2.toList().sorted()) {
        println("Строки являются анаграммами")
    } else {
        println("Не анаграммы")
    }
}
```



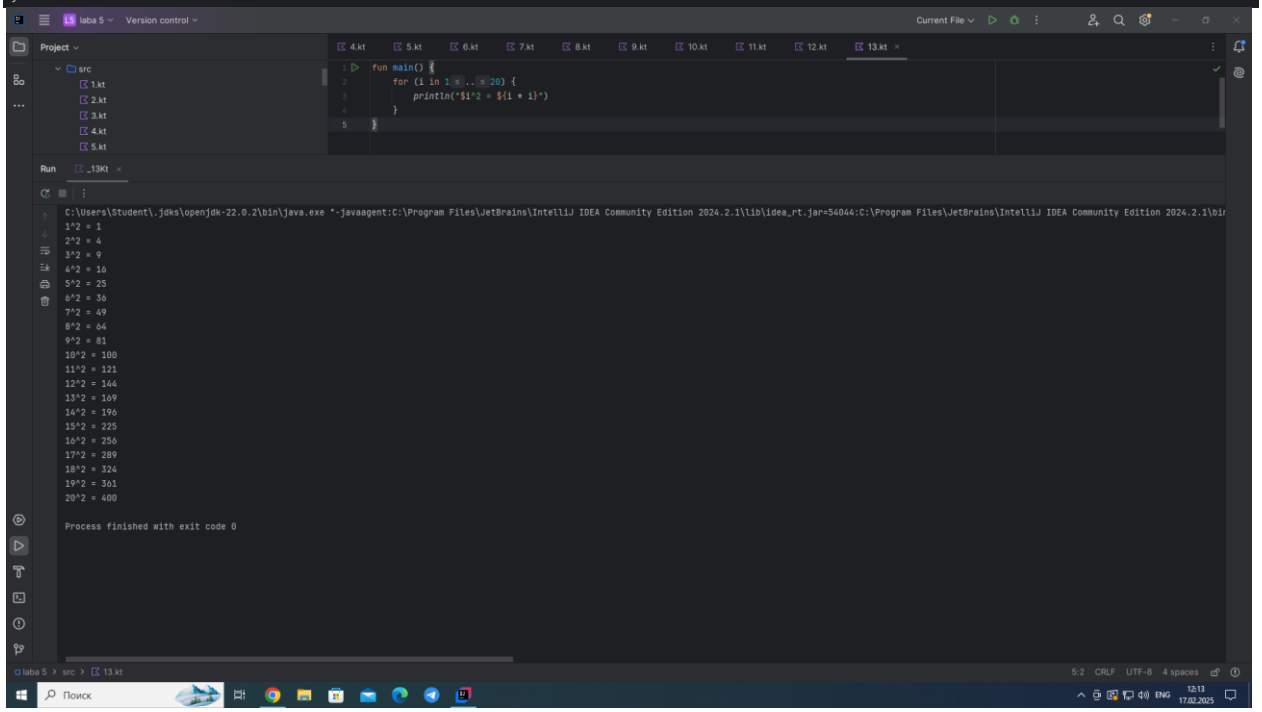
Задание 12:

```
fun main() {
    print("Введите начальное число и шаг: ")
    val (start, step) = readLine()?.split(" ")?.map { it.toInt() } ?: return
    for (i in 0..9) {
        print("${start + i * step} ")
    }
}
```



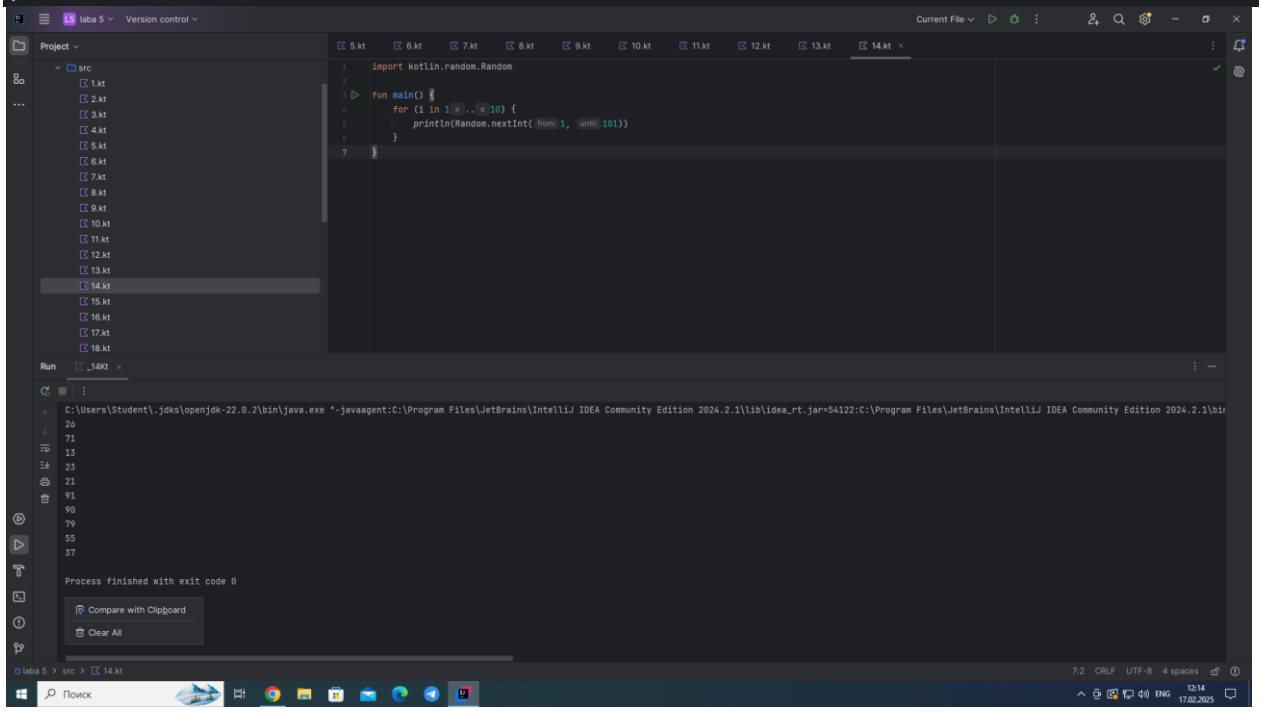
Задание 13:

```
fun main() {
    for (i in 1..20) {
        println("$i^2 = ${i * i}")
    }
}
```



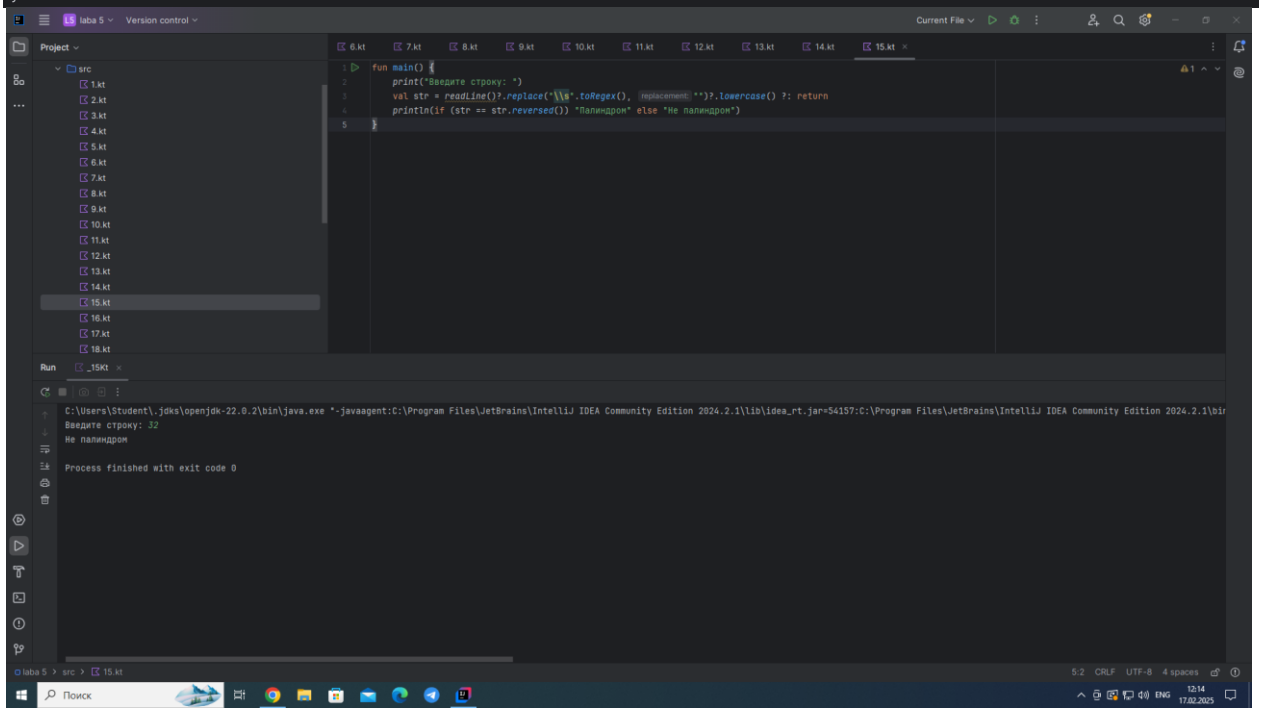
Задание 14:

```
import kotlin.random.Random

fun main() {
    for (i in 1..10) {
        println(Random.nextInt(1, 101))
    }
}
```



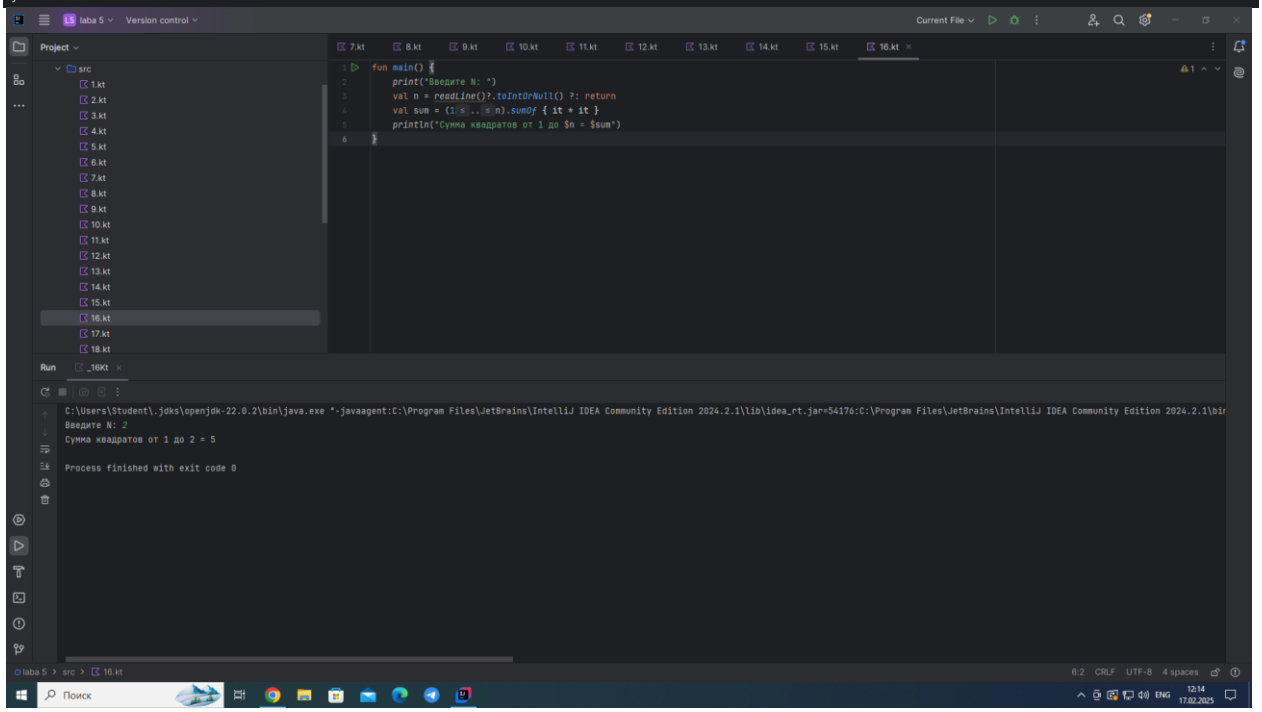
Задание 15:

```
fun main() {
    print("Введите строку: ")
    val str = readLine()?.replace("\\s".toRegex(), "")?.lowercase() ?: return
    println(if (str == str.reversed()) "Палиндром" else "Не палиндром")
}
```



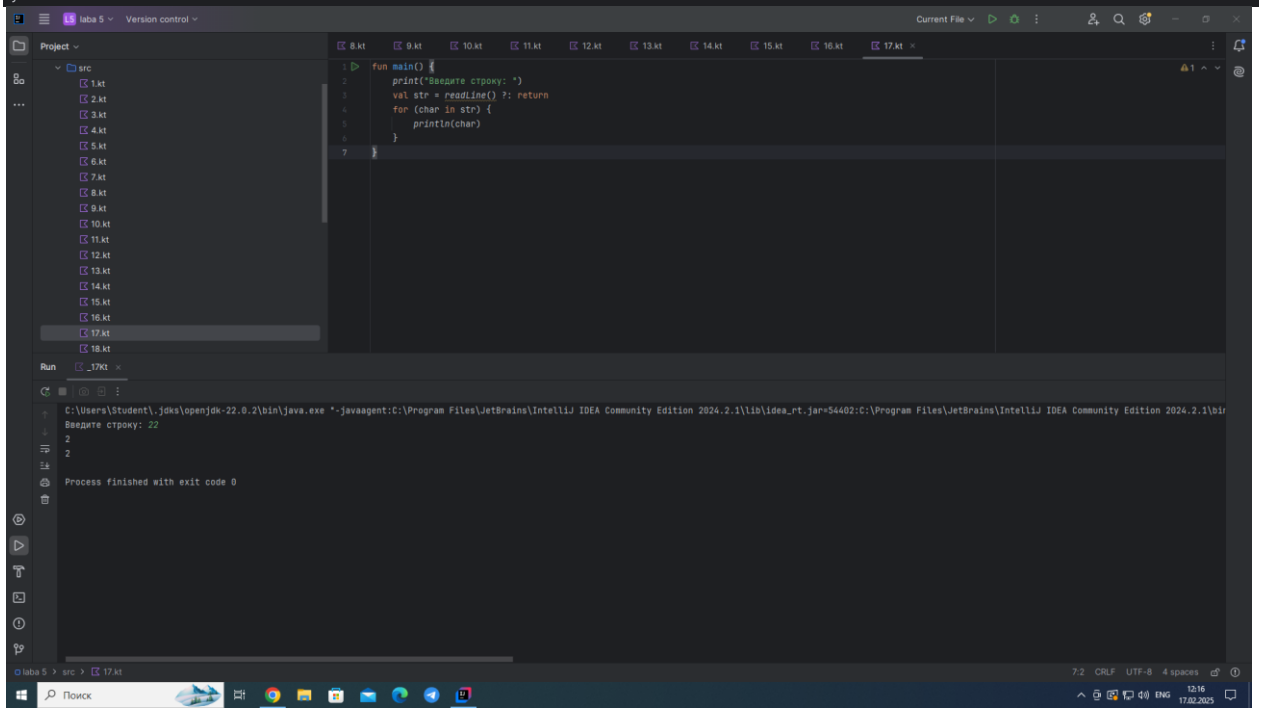
Задание 16:

```
fun main() {
    print("Введите N: ")
    val n = readLine()?.toIntOrNull() ?: return
    val sum = (1..n).sumOf { it * it }
    println("Сумма квадратов от 1 до $n = $sum")
}
```



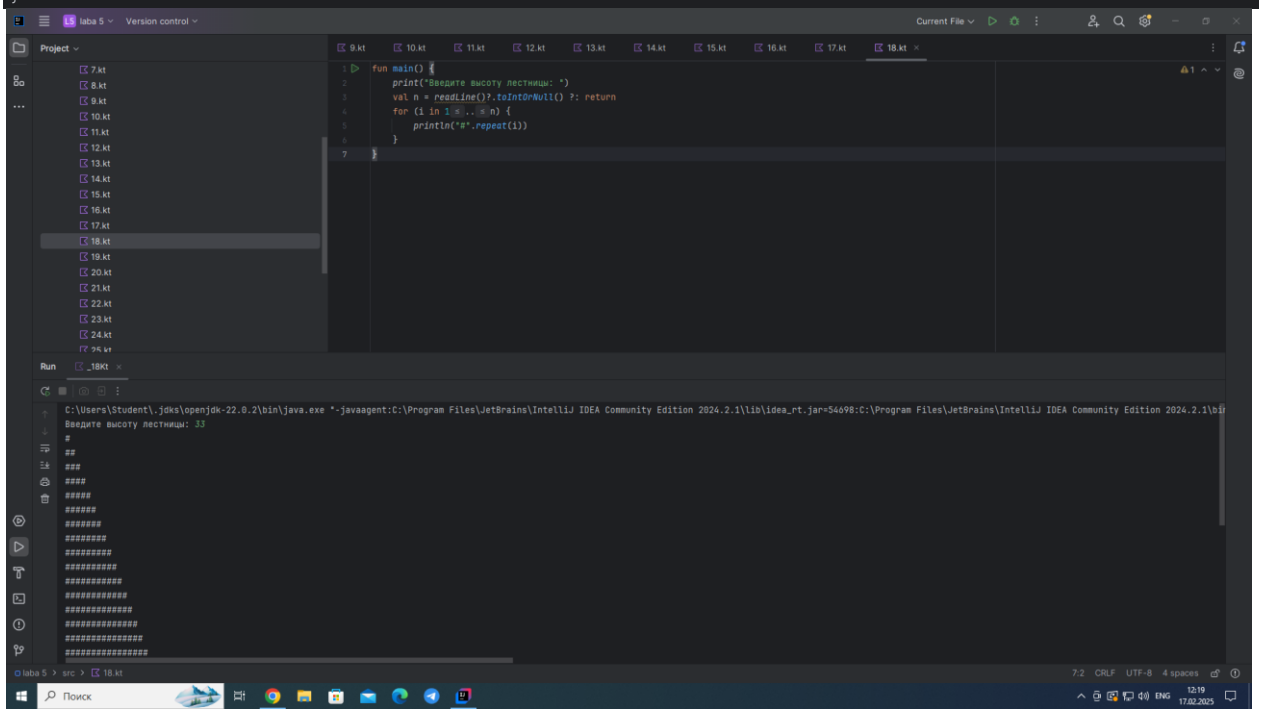
Задание 17:

```
fun main() {
    print("Введите строку: ")
    val str = readLine() ?: return
    for (char in str) {
        println(char)
    }
}
```



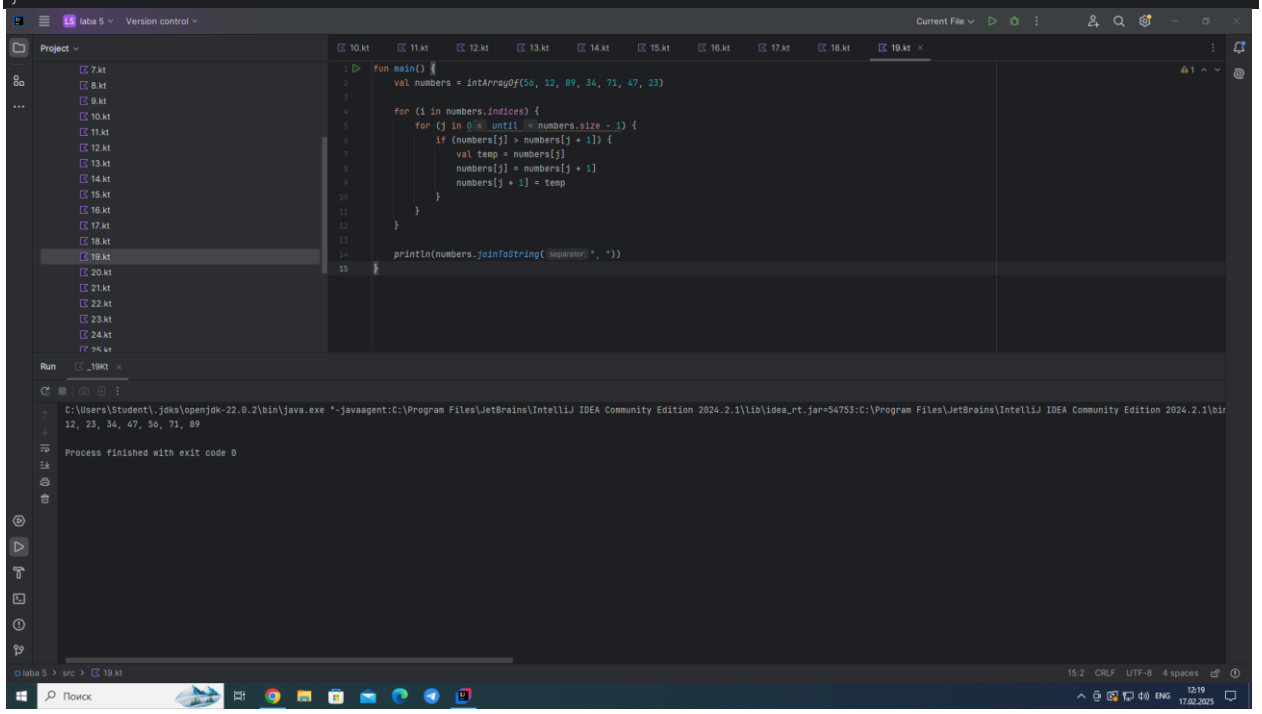
Задание 18:

```
fun main() {
    print("Введите высоту лестницы: ")
    val n = readLine()?.toIntOrNull() ?: return
    for (i in 1..n) {
        println("#".repeat(i))
    }
}
```



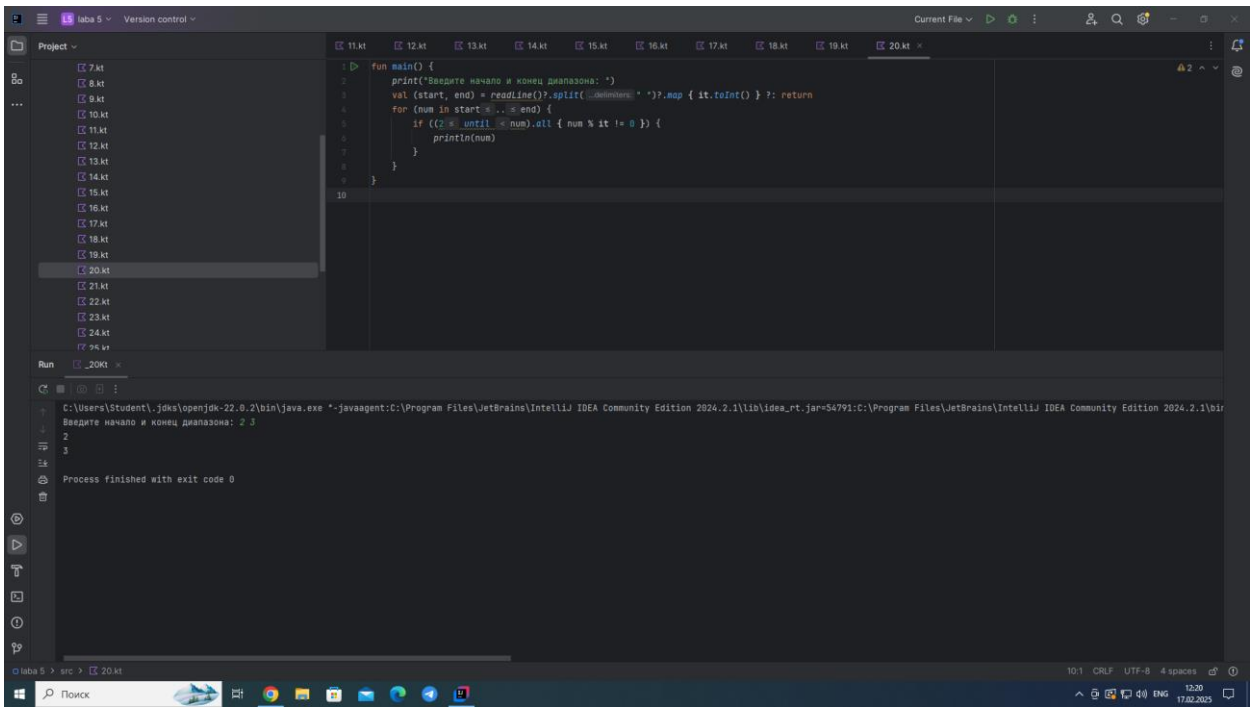
Задание 19:

```
fun main() {
    val numbers = intArrayOf(56, 12, 89, 34, 71, 47, 23)

    for (i in numbers.indices) {
        for (j in 0 until numbers.size - 1) {
            if (numbers[j] > numbers[j + 1]) {
                val temp = numbers[j]
                numbers[j] = numbers[j + 1]
                numbers[j + 1] = temp
            }
        }
    }

    println(numbers.joinToString(", "))
}
```



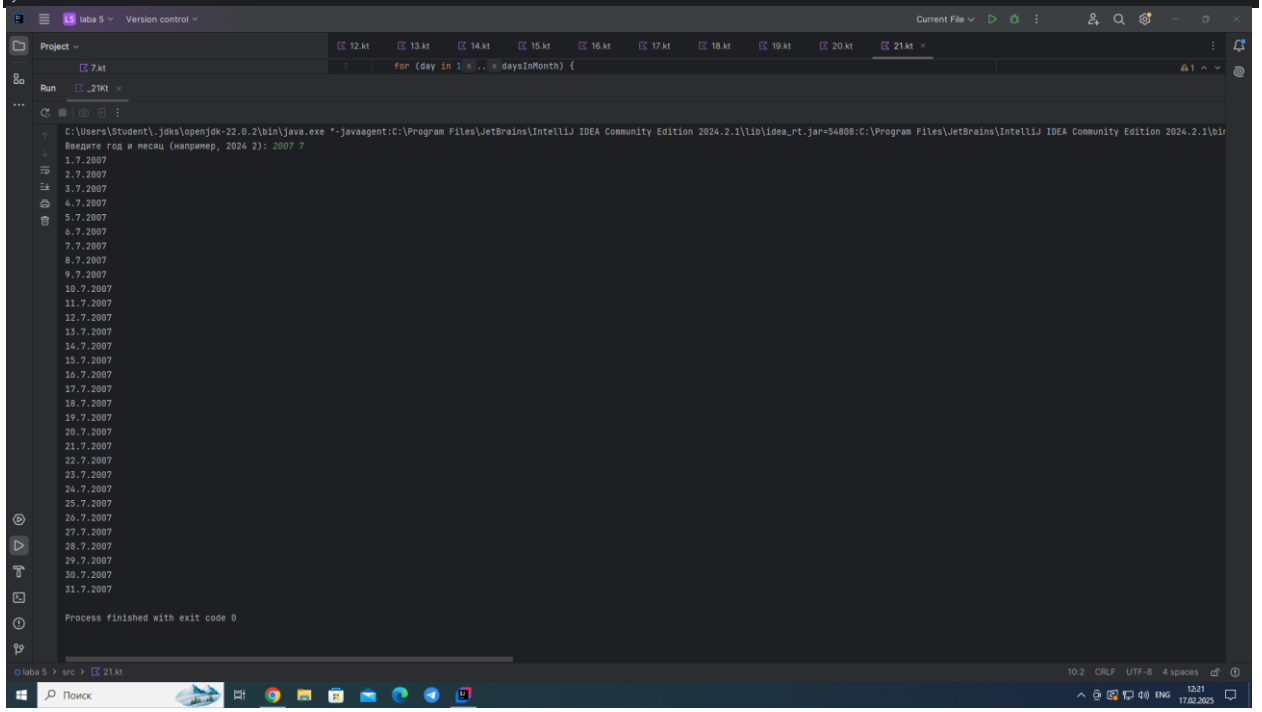
Задание 20:

```
fun main() {
    print("Введите начало и конец диапазона: ")
    val (start, end) = readLine()?.split(" ")?.map { it.toInt() } ?: return
    for (num in start..end) {
        if ((2 until num).all { num % it != 0 }) {
            println(num)
        }
    }
}
```



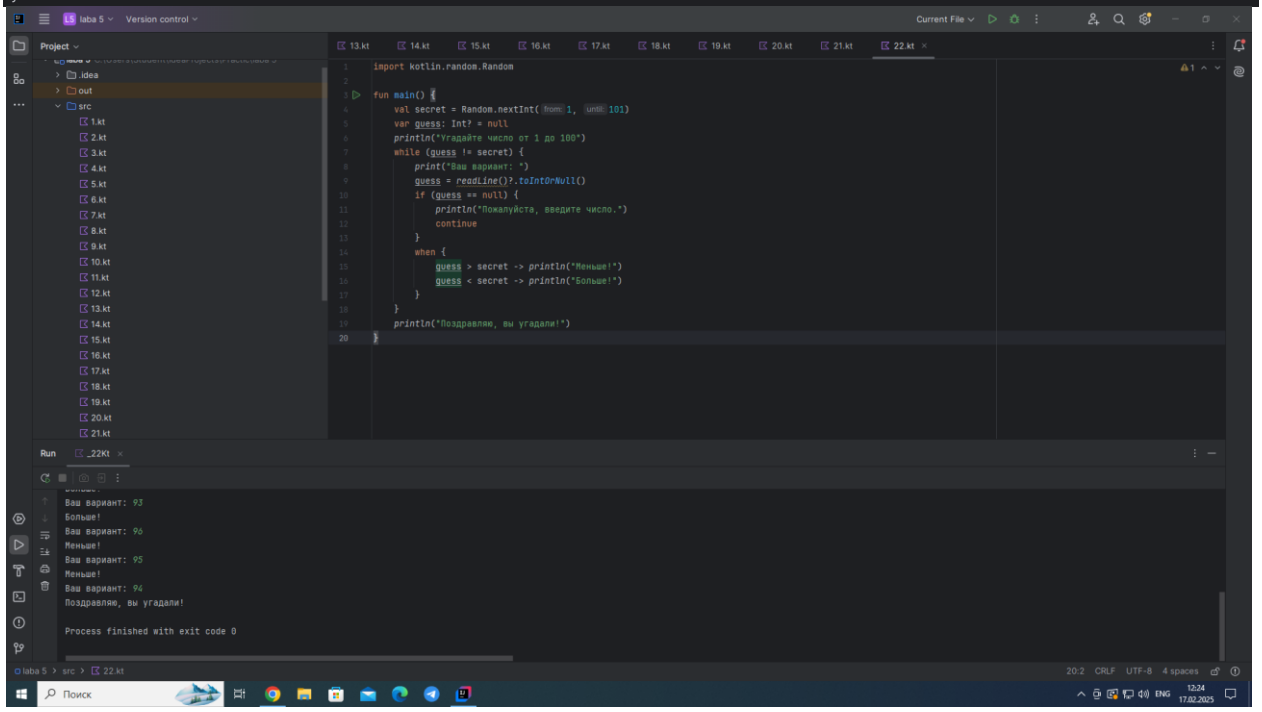
Задание 21:

```
import java.time.YearMonth

fun main() {
    print("Введите год и месяц (например, 2024 2): ")
    val (year, month) = readLine()?.split(" ")?.map { it.toInt() } ?: return
    val daysInMonth = YearMonth.of(year, month).lengthOfMonth()
    for (day in 1..daysInMonth) {
        println("$day.$month.$year")
    }
}
```



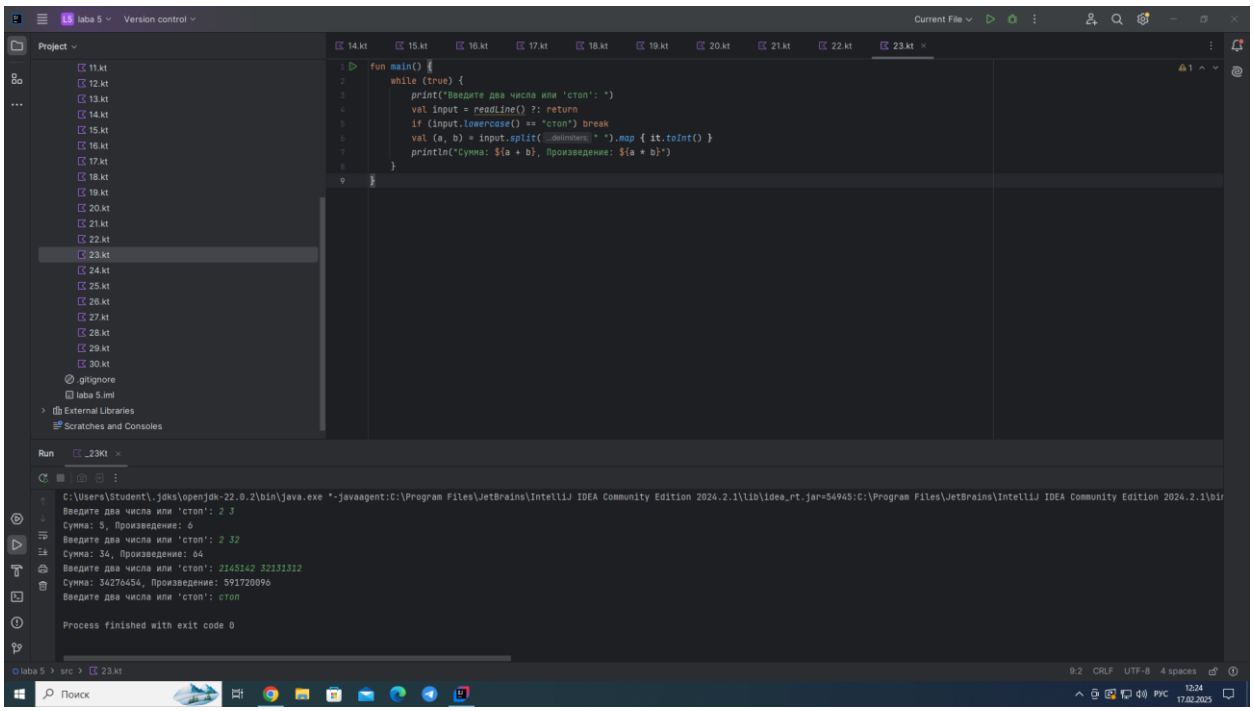
Задание 22:

```kotlin
import kotlin.random.Random

fun main() {
    val secret = Random.nextInt(1, 101)
    var guess: Int? = null
    println("Угадайте число от 1 до 100")
    while (guess != secret) {
        print("Ваш вариант: ")
        guess = readLine()?.toIntOrNull()
        if (guess == null) {
            println("Пожалуйста, введите число.")
            continue
        }
        when {
            guess > secret -> println("Меньше!")
            guess < secret -> println("Больше!")
        }
    }
    println("Поздравляю, вы угадали!")
}
```



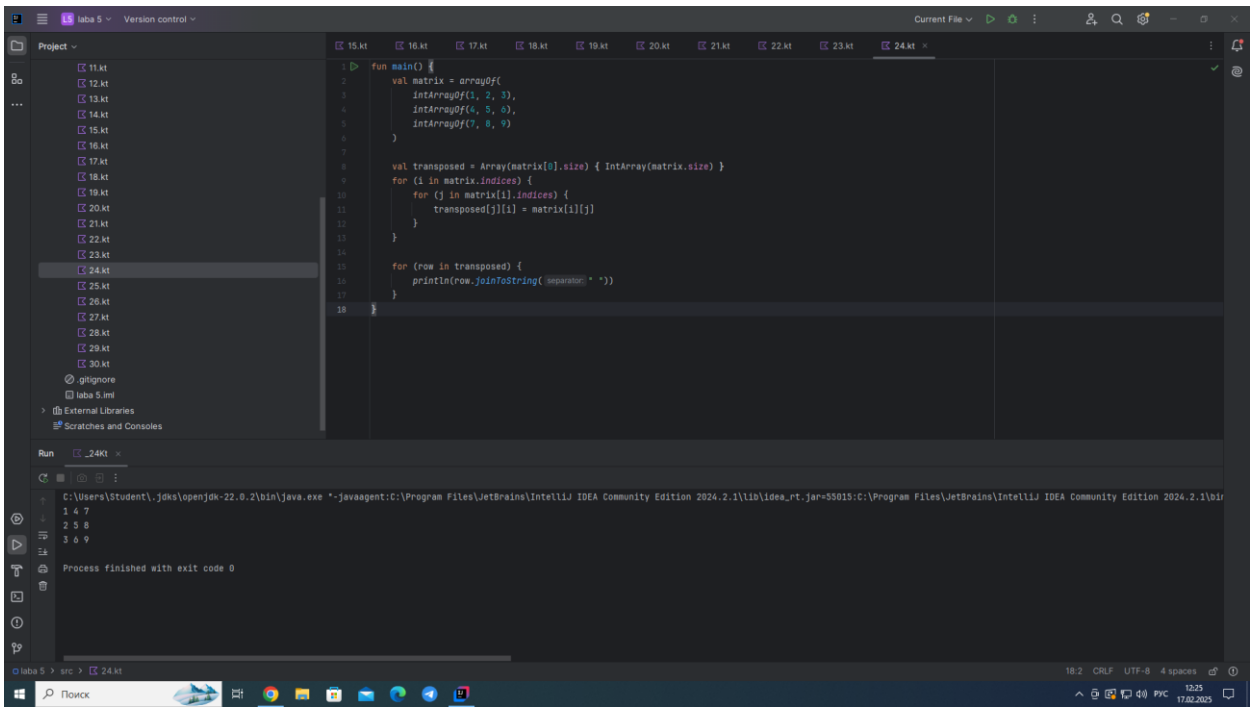
Задание 23:

```kotlin
fun main() {
    while (true) {
        print("Введите два числа или 'стоп': ")
        val input = readLine() ?: return
        if (input.lowercase() == "стоп") break
        val (a, b) = input.split(" ").map { it.toInt() }
        println("Сумма: ${a + b}, Произведение: ${a * b}")
    }
}
```



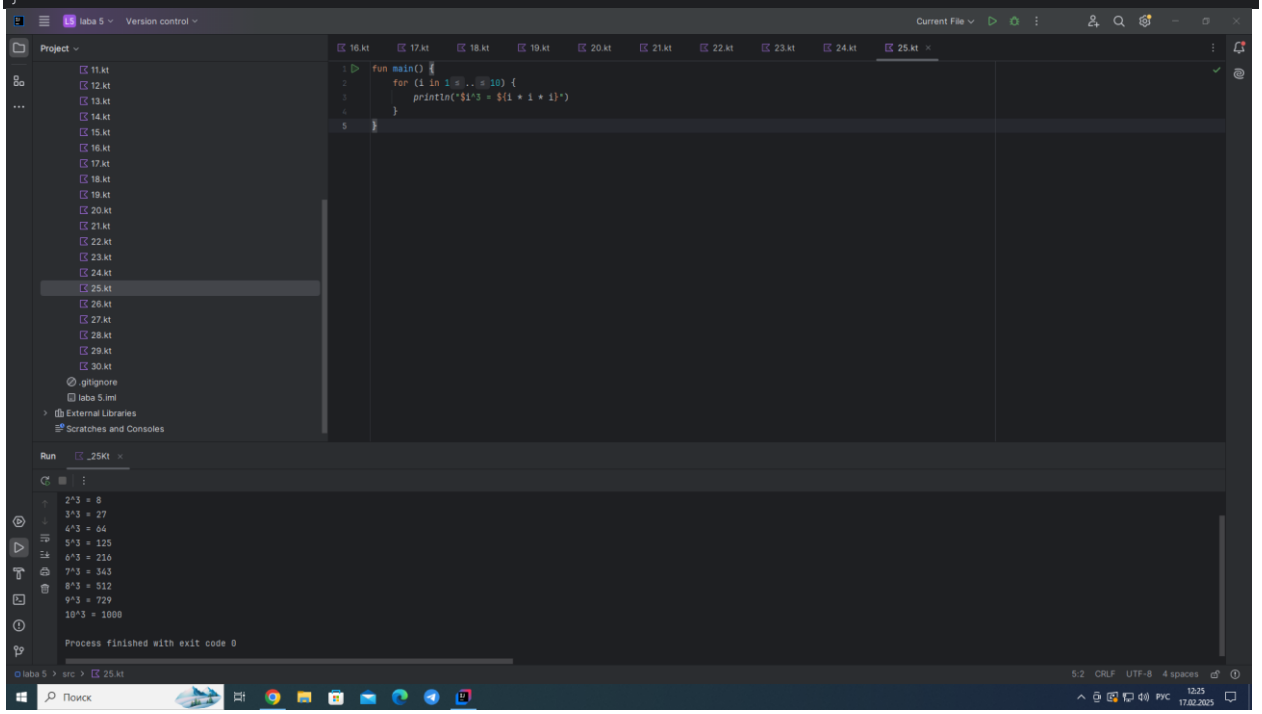
Задание 24:

```
fun main() {
    val matrix = arrayOf(
        intArrayOf(1, 2, 3),
        intArrayOf(4, 5, 6),
        intArrayOf(7, 8, 9)
    )

    val transposed = Array(matrix[0].size) { IntArray(matrix.size) }
    for (i in matrix.indices) {
        for (j in matrix[i].indices) {
            transposed[j][i] = matrix[i][j]
        }
    }

    for (row in transposed) {
        println(row.joinToString(" "))
    }
}
```



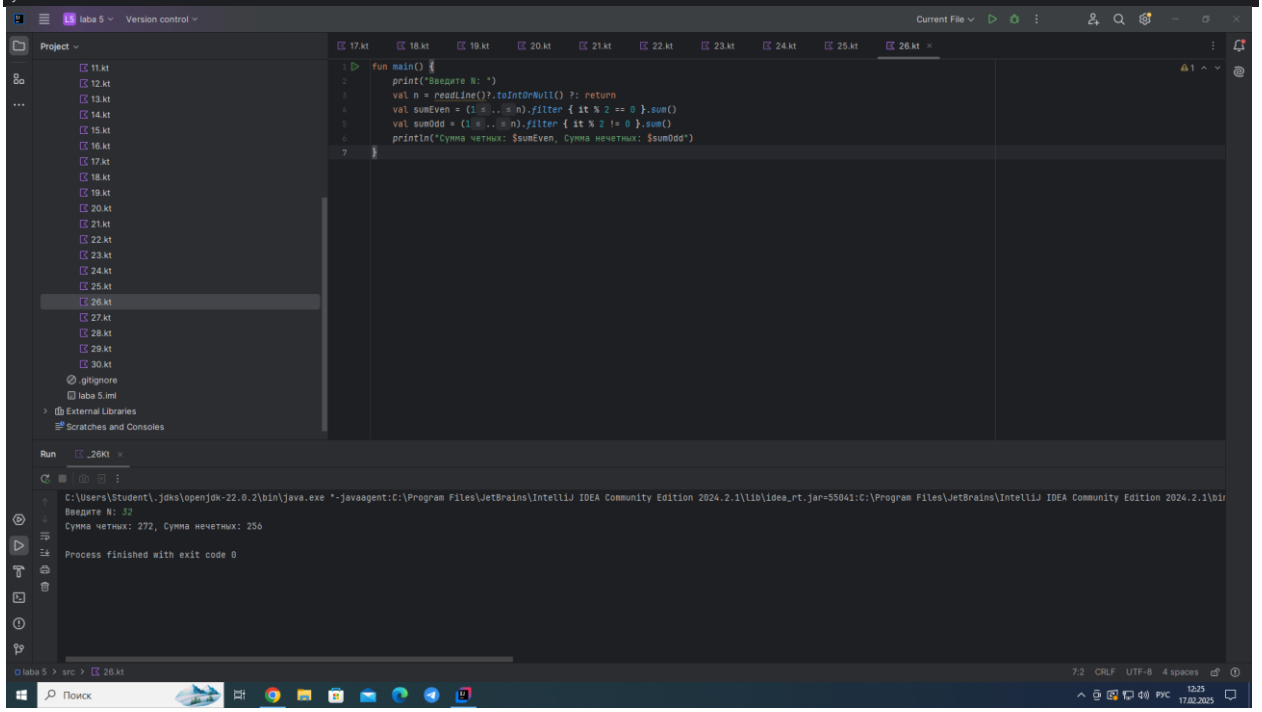
Задание 25:

```
fun main() {
    for (i in 1..10) {
        println("$i^3 = ${i * i * i}")
    }
}
```



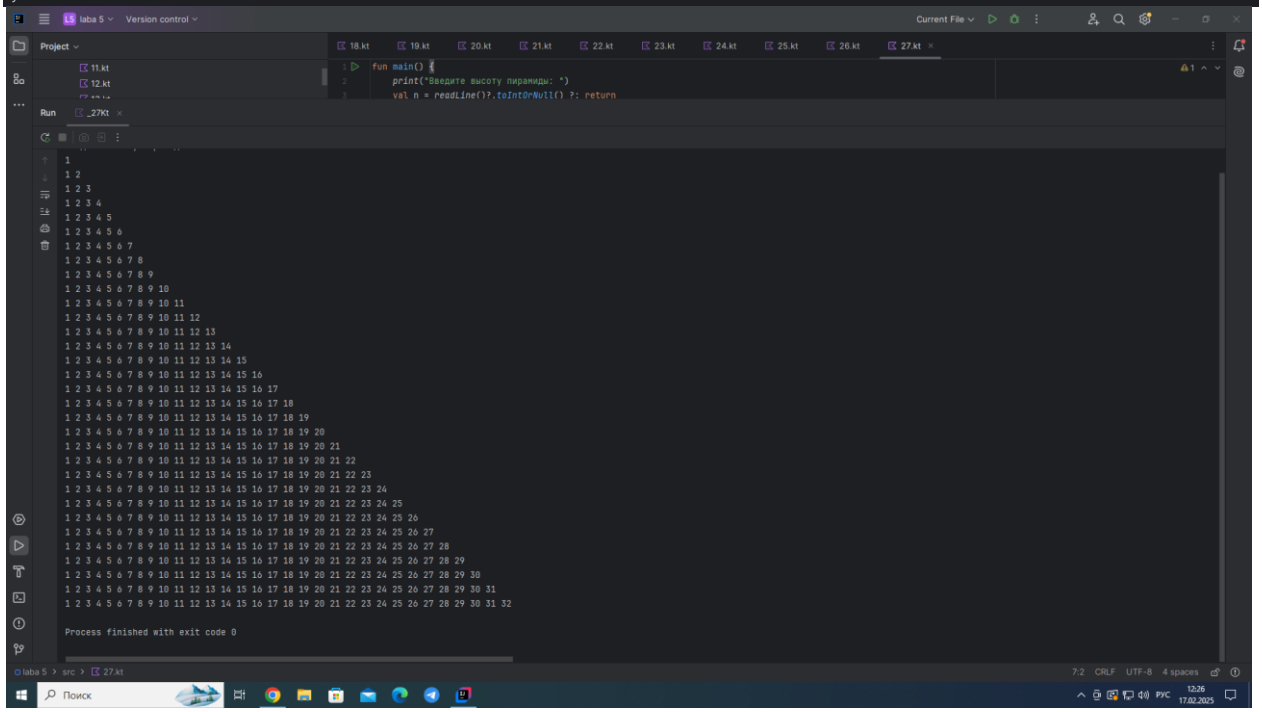
Задание 26:

```
fun main() {
    print("Введите N: ")
    val n = readLine()?.toIntOrNull() ?: return
    val sumEven = (1..n).filter { it % 2 == 0 }.sum()
    val sumOdd = (1..n).filter { it % 2 != 0 }.sum()
    println("Сумма четных: $sumEven, Сумма нечетных: $sumOdd")
}
```



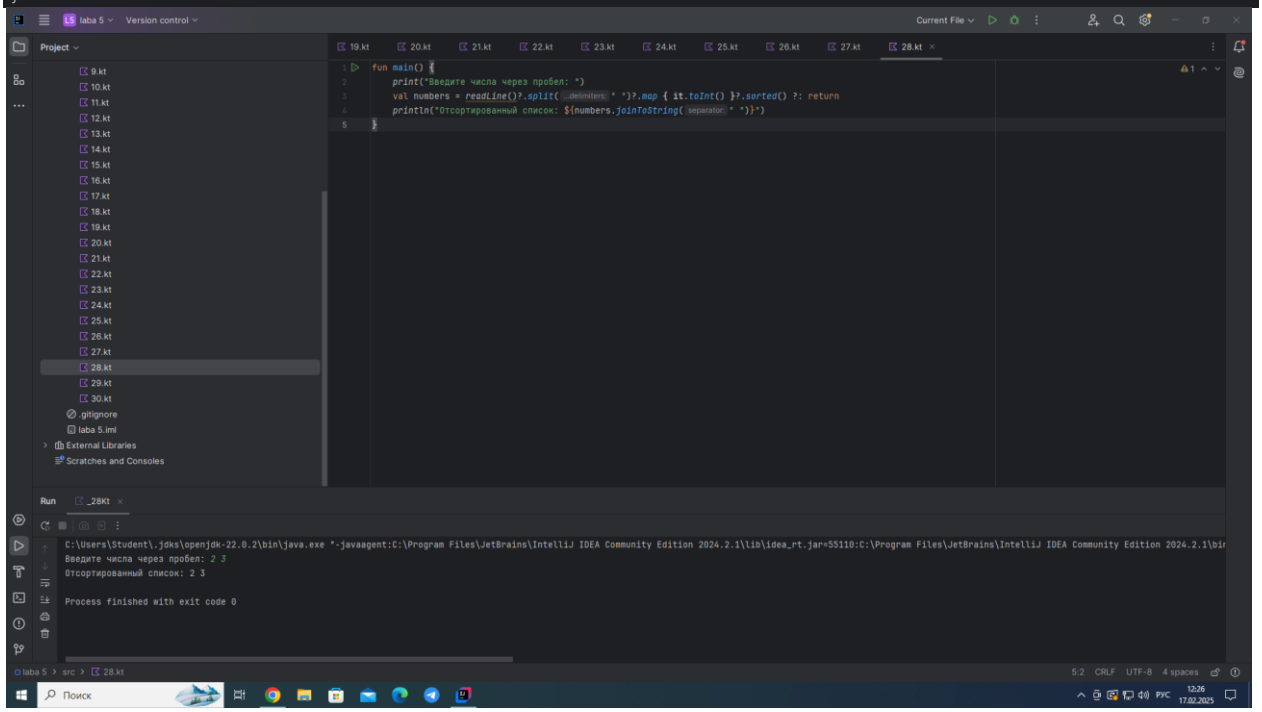
Задание 27:

```
fun main() {
    print("Введите высоту пирамиды: ")
    val n = readLine()?.toIntOrNull() ?: return
    for (i in 1..n) {
        println((1..i).joinToString(" "))
    }
}
```



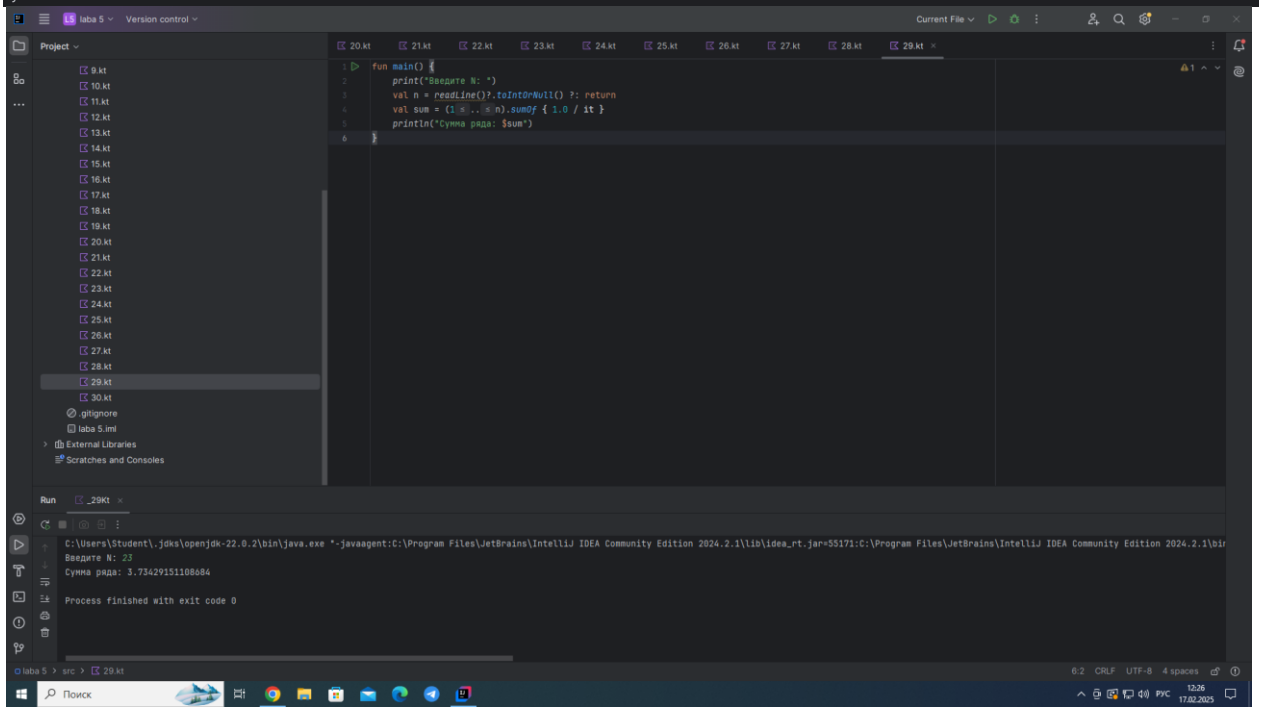
Задание 28:

```
fun main() {
    print("Введите числа через пробел: ")
    val numbers = readLine()?.split(" ")?.map { it.toInt() }?.sorted() ?:
return
    println("Отсортированный список: ${numbers.joinToString(" ")}")
}
```



Задание 29:

```
fun main() {
    print("Введите N: ")
    val n = readLine()?.toIntOrNull() ?: return
    val sum = (1..n).sumOf { 1.0 / it }
    println("Сумма ряда: $sum")
}
```



Задание 30:

```
fun main() {
    print("Введите число: ")
    val num = readLine()?.toIntOrNull() ?: return
    println("В двоичной системе: ${num.toString(2)}")
}
```