

Практическая работа 2 (Тютин ИС231)

Операции с числами

Задание 1(А)

```
Project <
  repository_android_practic_TutinalS231_lab2 C:\Users\111\Desktop
  > .idea
  > out
  > src
    задание1.kt
    .gitignore
    repository_android_practic_TutinalS231_lab2.iml
  > External Libraries
  > Scratches and Consoles

Run <
  задание1.kt
  C:\Users\111\.jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\lib\idea_rt.jar=59686:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\bin
  Число десятков: 4
  Process finished with exit code 0
```

```
1 fun main() {
2     val number = 42
3
4     if (number in 10..99) {
5         val tens = number / 10 // Число десятков
6         println("Число десятков: $tens")
7     } else {
8         println("Введите двузначное число.")
9     }
10 }
11
12
13
14
```

Задание 1(Б)

```
Project <
  repository_android_practic_TutinalS231_lab2 C:\Users\111\Desktop
  > .idea
  > out
  > src
    задание1.kt
    .gitignore
    repository_android_practic_TutinalS231_lab2.iml
  > External Libraries
  > Scratches and Consoles

Run <
  задание1.kt
  C:\Users\111\.jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\lib\idea_rt.jar=59754:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\bin
  Число единиц: 9
  Process finished with exit code 0
```

```
1 fun main() {
2     val number = 29
3
4     if (number in 10..99) {
5         val units = number % 10 // Число единиц
6         println("Число единиц: $units")
7     } else {
8         println("Введите двузначное число.")
9     }
10 }
11
12
13
14
15
```

Задание 1 (В)

```
1 fun main() {
2     println("Введите двузначное число:")
3     val input = readLine()
4
5     if (input != null && input.length == 2 && input.all { it.isDigit() }) {
6
7         val number = input.toInt()
8
9         val tens = number / 10
10        val units = number % 10
11
12        val sum = tens + units
13
14        println("Сумма цифр числа $number равна $sum")
15    } else {
16        println("Ошибка: Введите корректное двузначное число.")
17    }
18 }
```

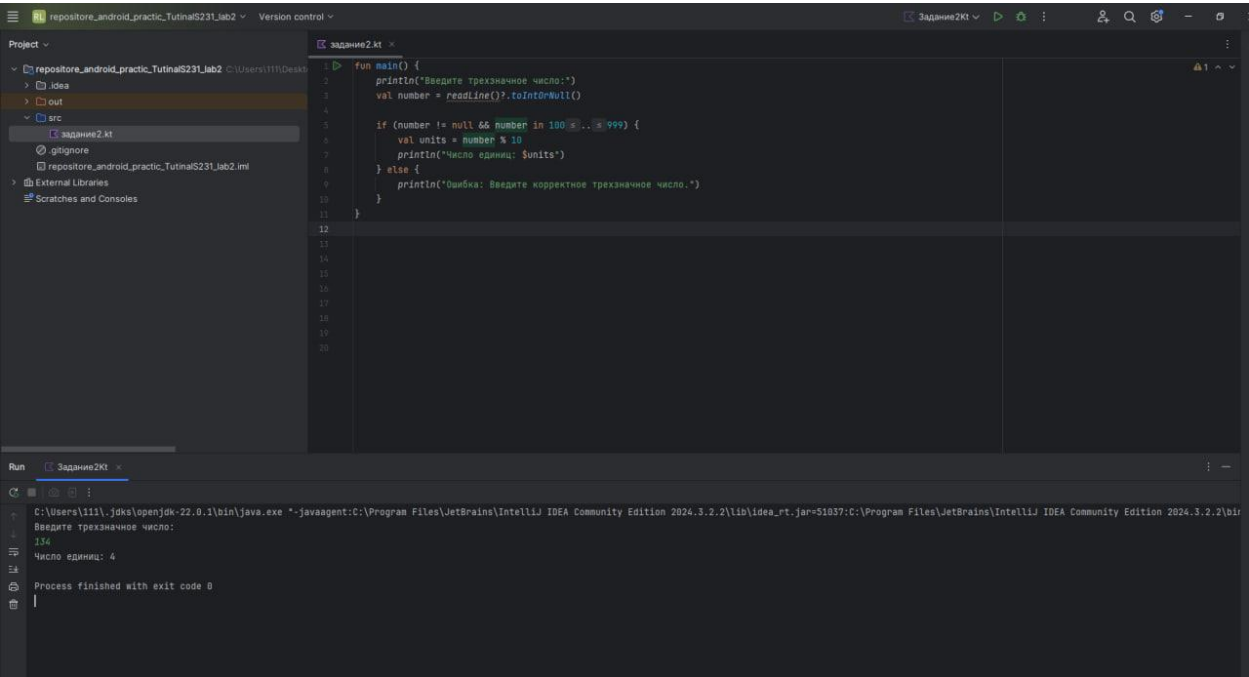
Run: C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe ... Введите двузначное число: 22 Сумма цифр числа 22 равна 4 Process finished with exit code 0

Задание 1 (Г)

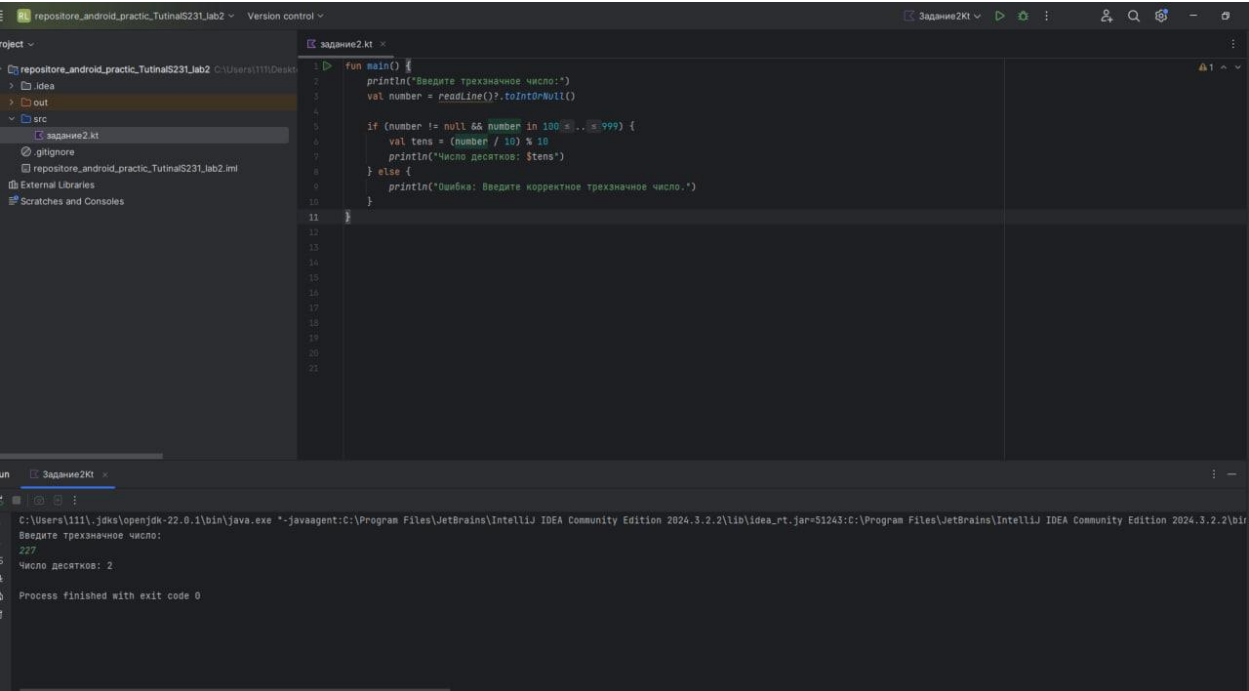
```
1 fun main() {
2     println("Введите двузначное число:")
3     val input = readLine()
4
5     if (input != null && input.length == 2 && input.all { it.isDigit() }) {
6
7         val number = input.toInt()
8
9         val tens = number / 10
10        val units = number % 10
11
12        val product = tens * units
13
14        println("Произведение цифр числа $number равно $product")
15    } else {
16        println("Ошибка: Введите корректное двузначное число.")
17    }
18 }
```

Run: C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe ... Введите двузначное число: 29 Произведение цифр числа 29 равно 18 Process finished with exit code 0

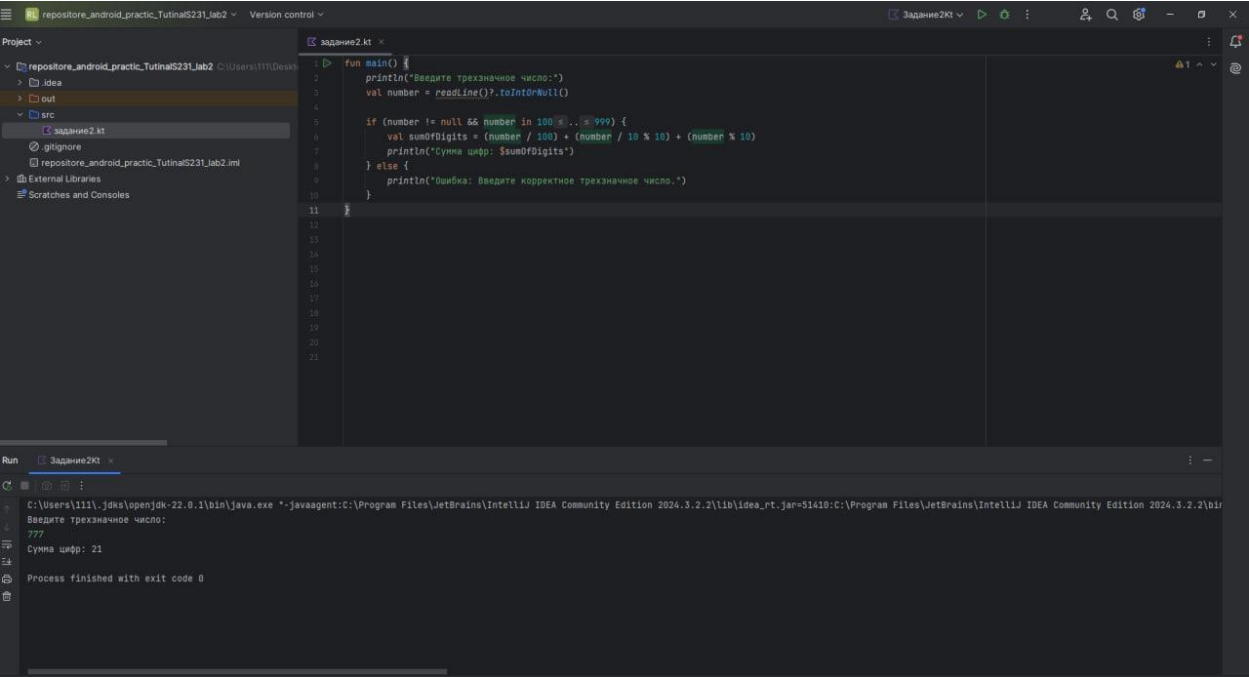
Задание 2(А)



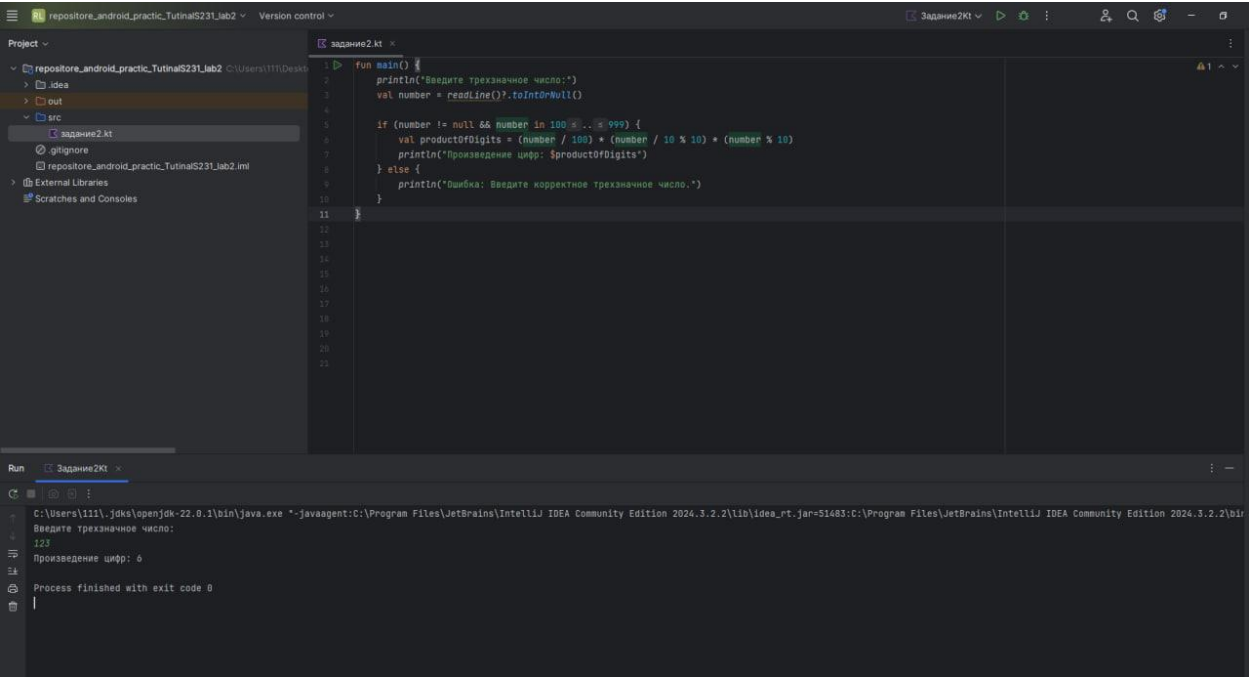
Задание 2(Б)



Задание 2 (В)



Задание 2(Г)



Задание 3

The screenshot shows the IntelliJ IDEA interface with a project named 'repository_android_practic_TutinalS231_lab2'. The file explorer on the left shows the project structure, including a 'src' directory with a file named 'задание3.kt'. The main editor displays the code for 'задание3.kt', which implements a division calculator. The code prompts the user to enter two numbers, checks for null values and division by zero, and then prints the result of the division. The Run console at the bottom shows the execution of the program, where the user enters '23' and '12', and the program outputs '23.0 разделить на 12.0 равно 1.9166666666666667'.

```
1 fun main() {  
2     print("Введите первое число: ")  
3     val num1 = readLine()?.toDoubleOrNull()  
4  
5     print("Введите второе число: ")  
6     val num2 = readLine()?.toDoubleOrNull()  
7  
8     if (num1 == null || num2 == null) {  
9         println("Ошибка: введенные данные должны быть числами.")  
10        return  
11    }  
12  
13    if (num2 == 0.0) {  
14        println("Ошибка: деление на ноль невозможно.")  
15        return  
16    }  
17  
18    val result = num1 / num2  
19    println("$num1 разделить на $num2 равно $result")  
20 }  
21  
22  
23  
24  
25  
26  
27
```

Run console output:

```
C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2.2\lib\idea_rt.jar=53082:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2.2\bin  
Введите первое число: 23  
Введите второе число: 12  
23.0 разделить на 12.0 равно 1.9166666666666667  
  
Process finished with exit code 0
```

Задание 4

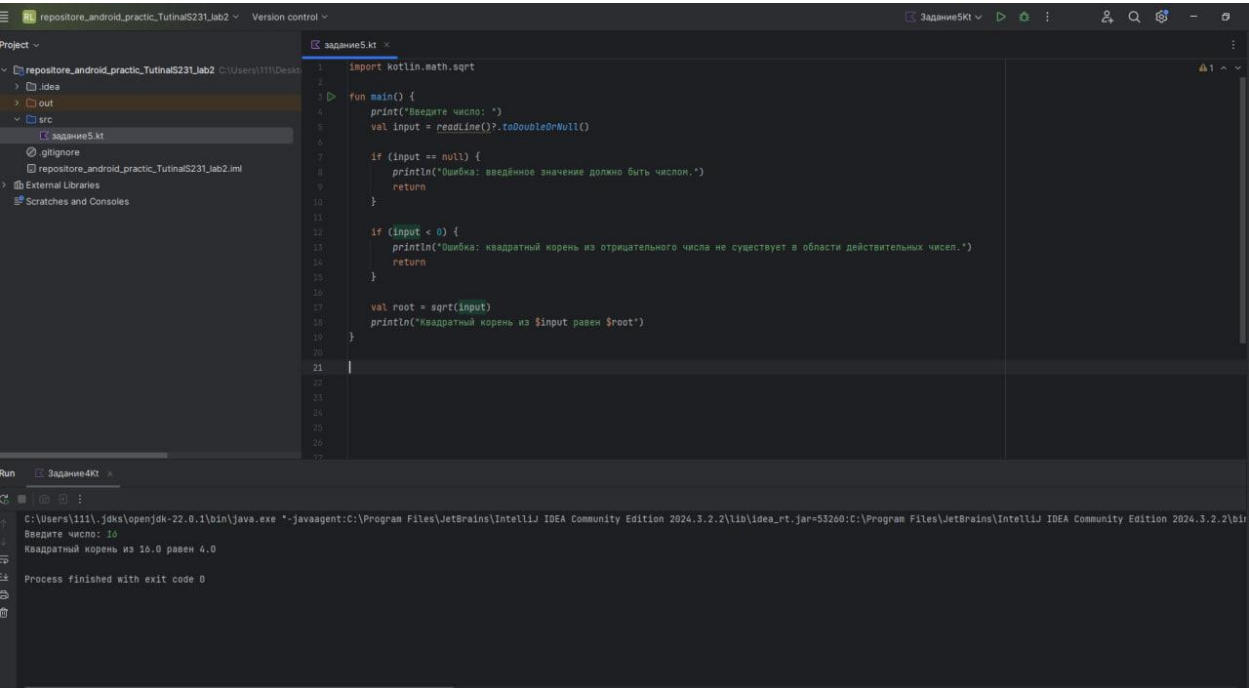
The screenshot shows the IntelliJ IDEA interface with the same project as in the previous task. The file explorer on the left shows the project structure, including a 'src' directory with a file named 'задание4.kt'. The main editor displays the code for 'задание4.kt', which implements a power calculator. The code prompts the user to enter a base and an exponent, checks for null values, and then prints the result of the power calculation using the 'Math.pow' function. The Run console at the bottom shows the execution of the program, where the user enters '4' and '2', and the program outputs '4.0 в степени 2.0 равно 16.0'.

```
1 fun main() {  
2     print("Введите основание степени: ")  
3     val base = readLine()?.toDoubleOrNull()  
4  
5     print("Введите показатель степени: ")  
6     val exponent = readLine()?.toDoubleOrNull()  
7  
8     if (base == null || exponent == null) {  
9         println("Ошибка: введенные данные должны быть числами.")  
10        return  
11    }  
12  
13    val result = Math.pow(base, exponent)  
14    println("$base в степени $exponent равно $result")  
15 }  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27
```

Run console output:

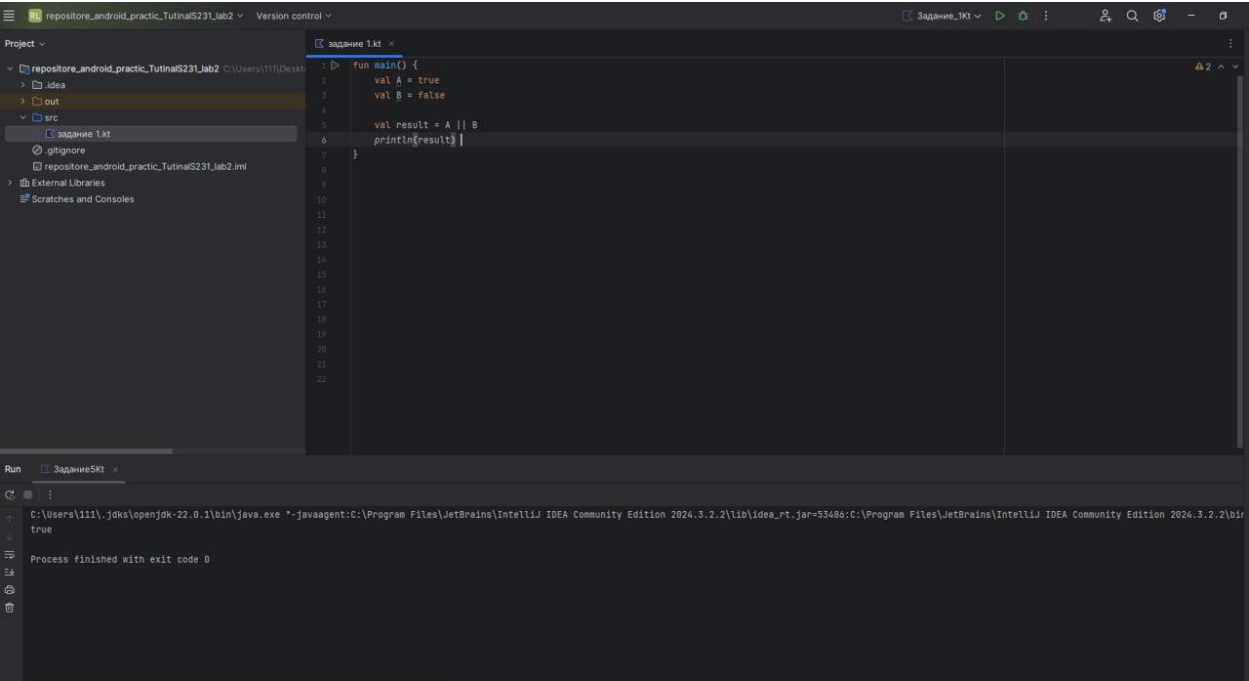
```
C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2.2\lib\idea_rt.jar=53087:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2.2\bin  
Введите основание степени: 4  
Введите показатель степени: 2  
4.0 в степени 2.0 равно 16.0  
  
Process finished with exit code 0
```

Задание 5

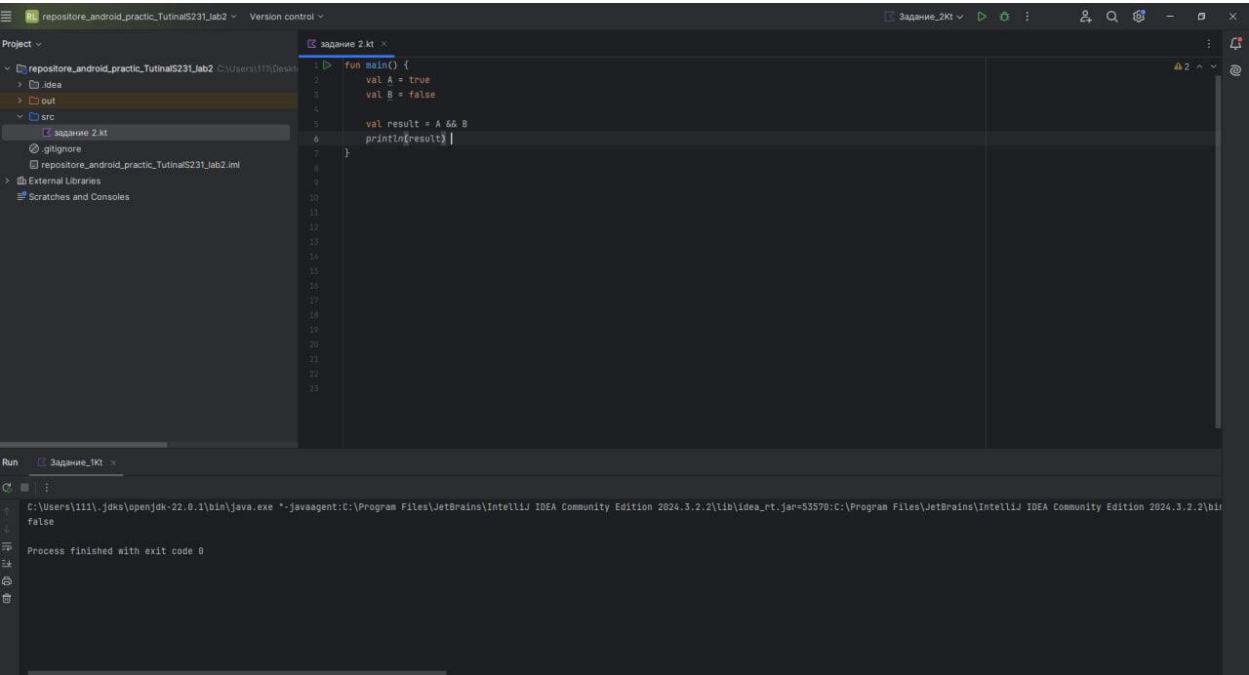


Вычисление логических выражений

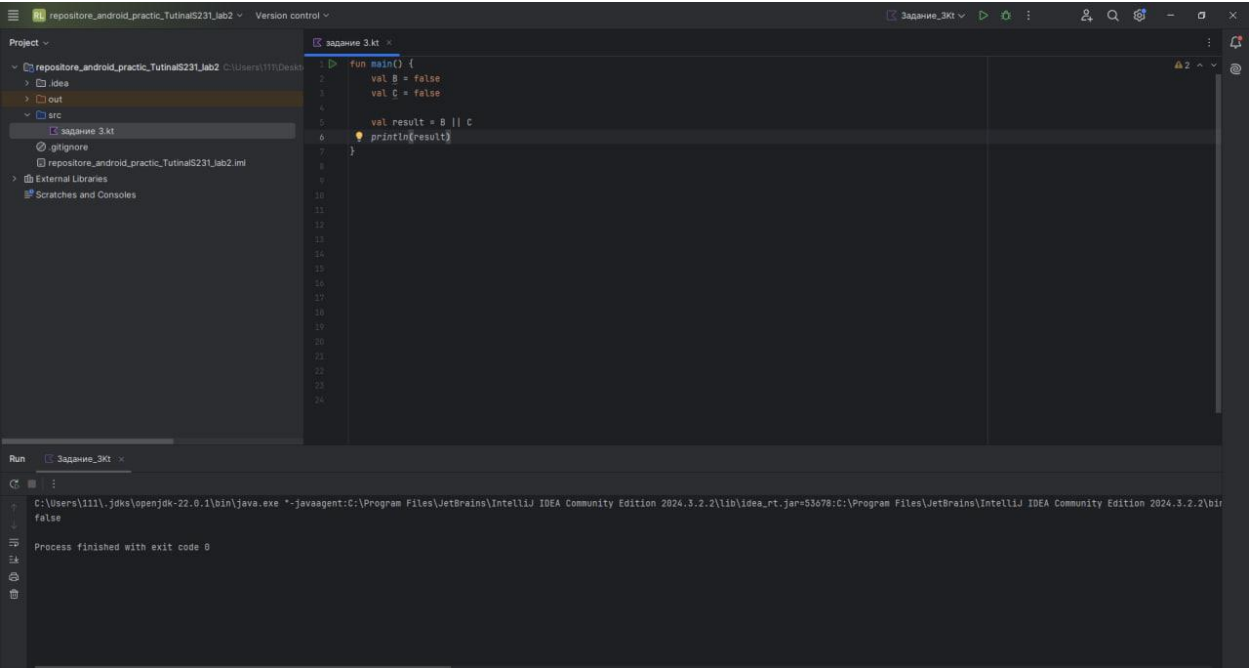
Задание 1(A)



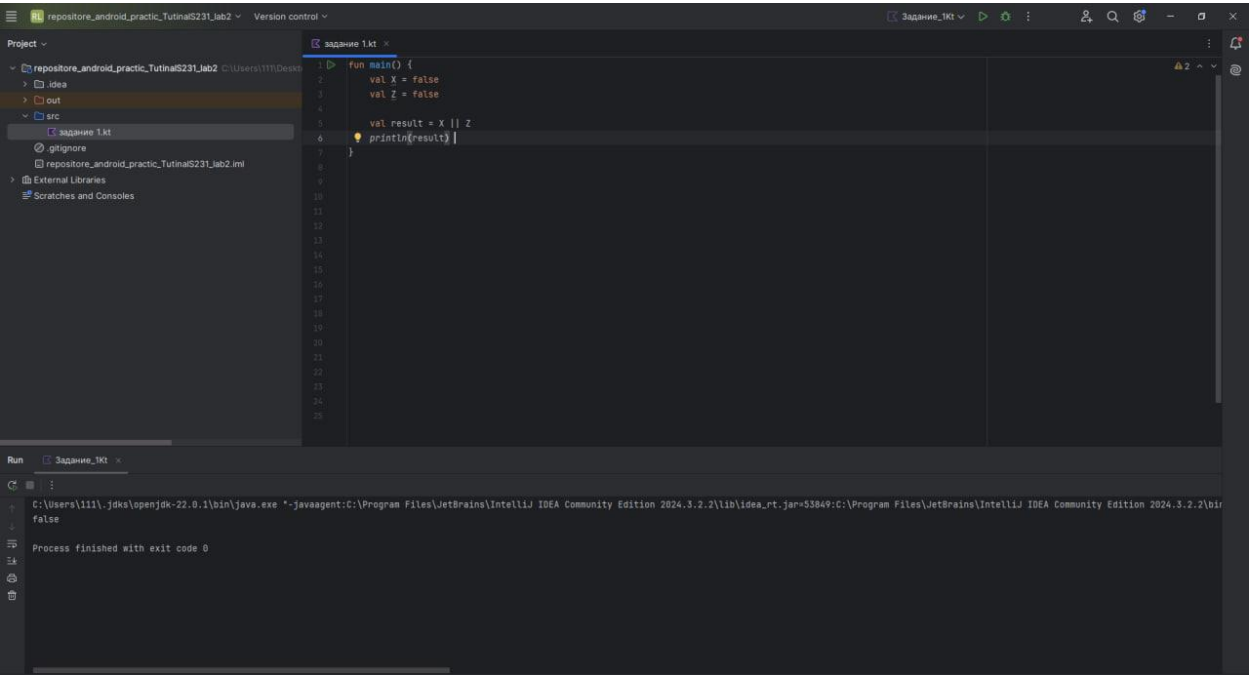
Задание 1(Б)



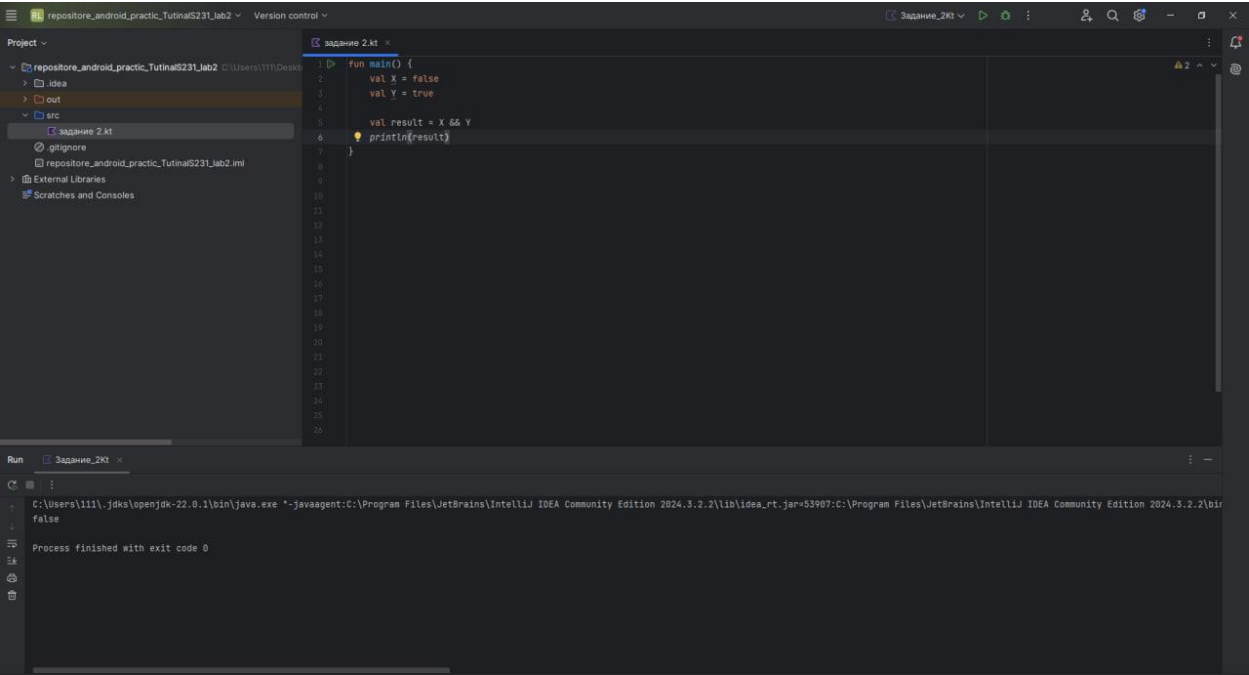
Задание 1 (B)



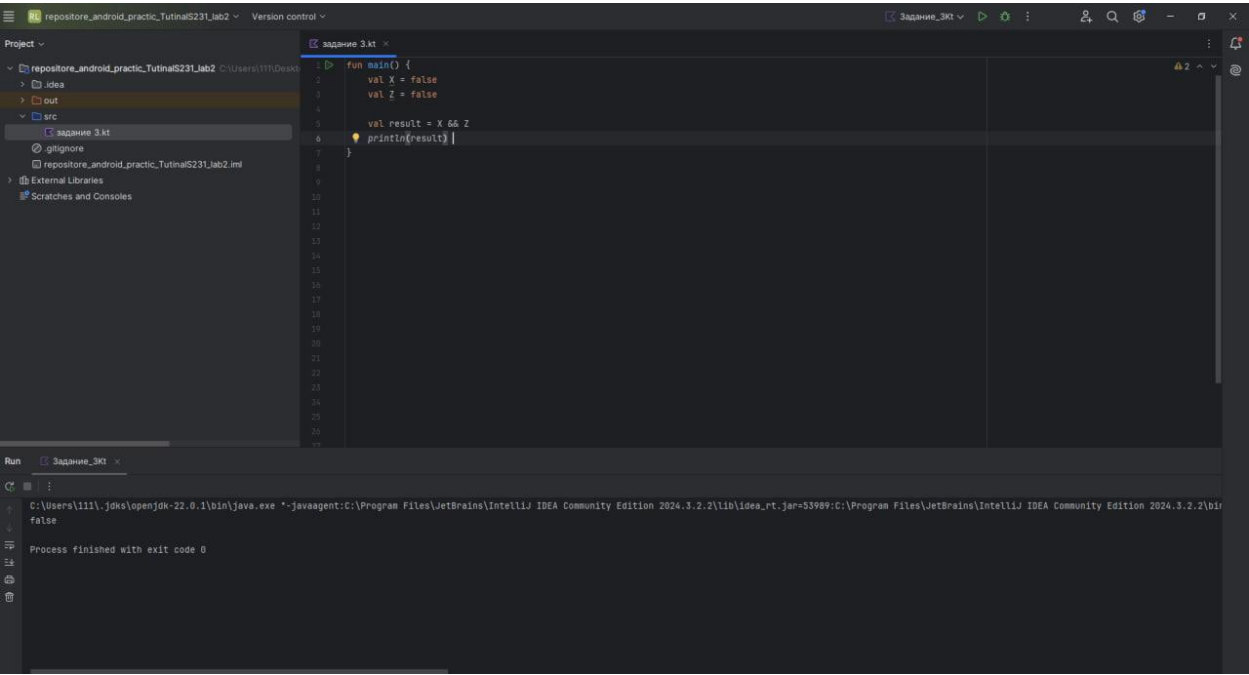
Задание 2(А)



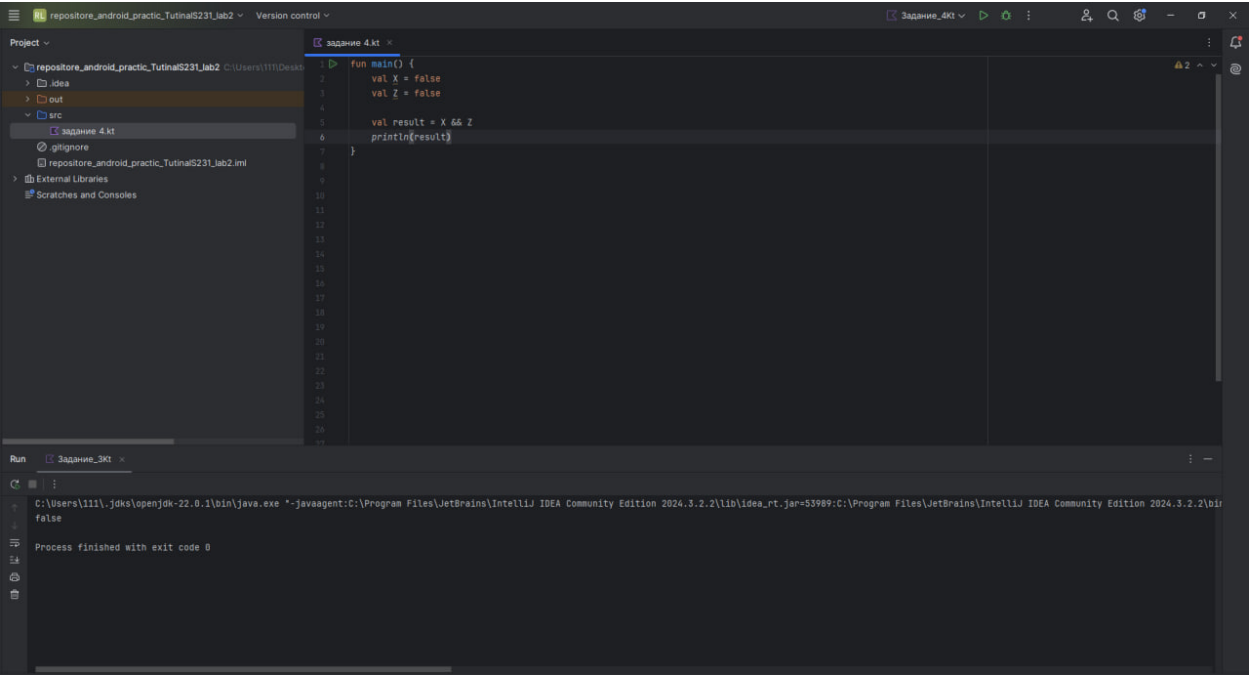
Задание 2 (Б)



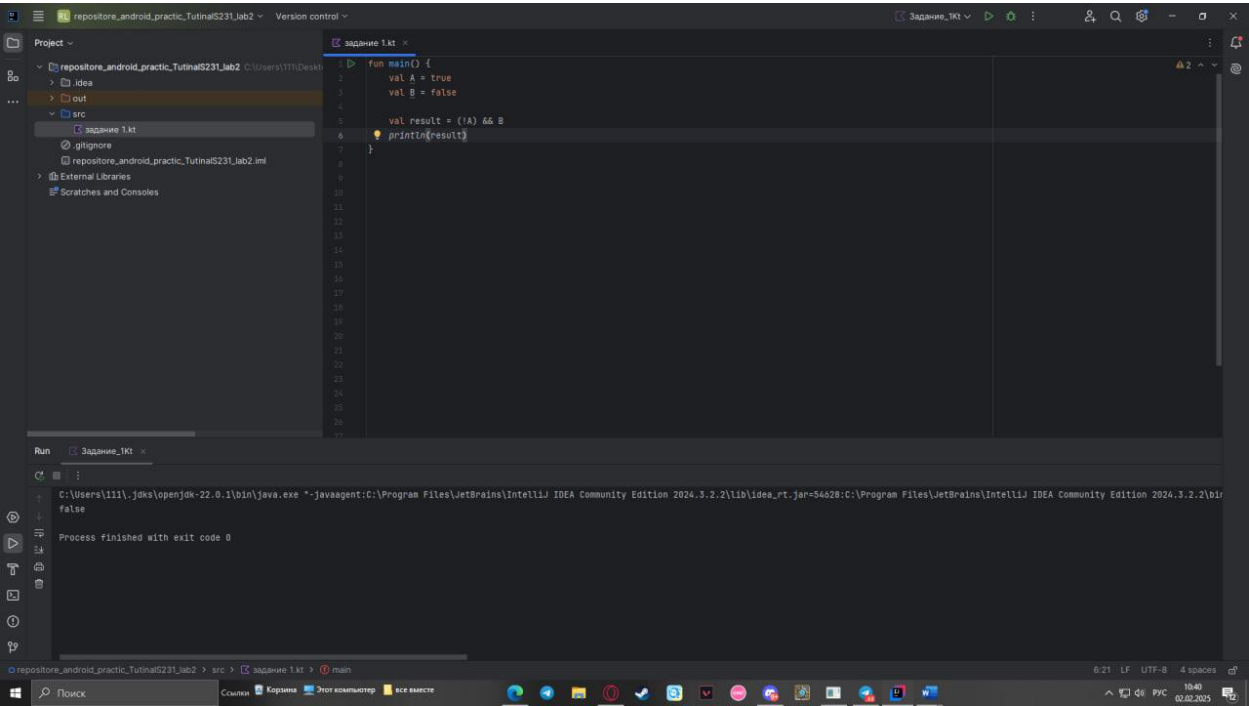
Задание 2(В)



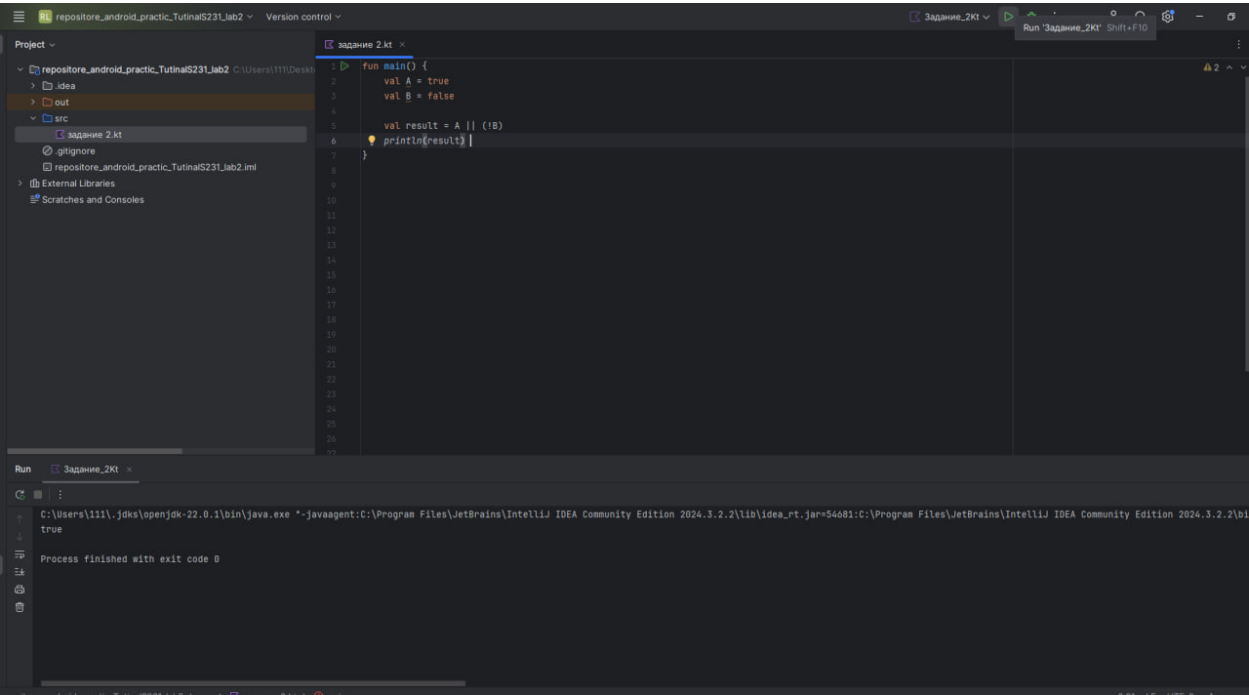
Задание 2(Г)



Задание 3(А)



Задание 3(Б)



Задание 3 (B)

```
project
├── repository_android_practic_Tutinal5231_lab2
│   ├── .idea
│   ├── out
│   └── src
│       └── задание_3.kt
├── .gitignore
├── repository_android_practic_Tutinal5231_lab2.iml
└── External Libraries
    └── Scratches and Consoles
```

```
1 fun main() {
2     val A = true
3     val B = false
4     val C = false
5
6     val result = (A && B) || C
7     println(result)
8 }
```

```
C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\lib\idea_rt.jar=54739:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\bin\false
false
Process finished with exit code 0
```

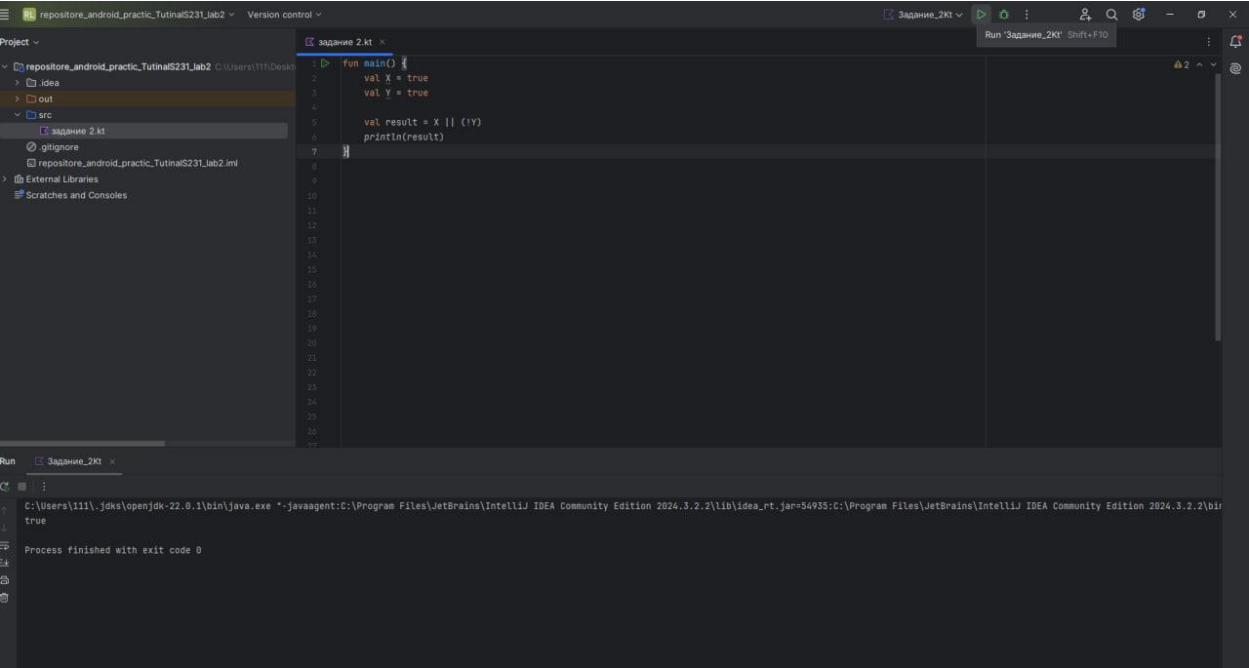
Задание 4(A)

```
Project
├── repository_android_practic_Tutinal5231_lab2
│   ├── .idea
│   ├── out
│   └── src
│       └── задание_1.kt
├── .gitignore
├── repository_android_practic_Tutinal5231_lab2.iml
└── External Libraries
    └── Scratches and Consoles
```

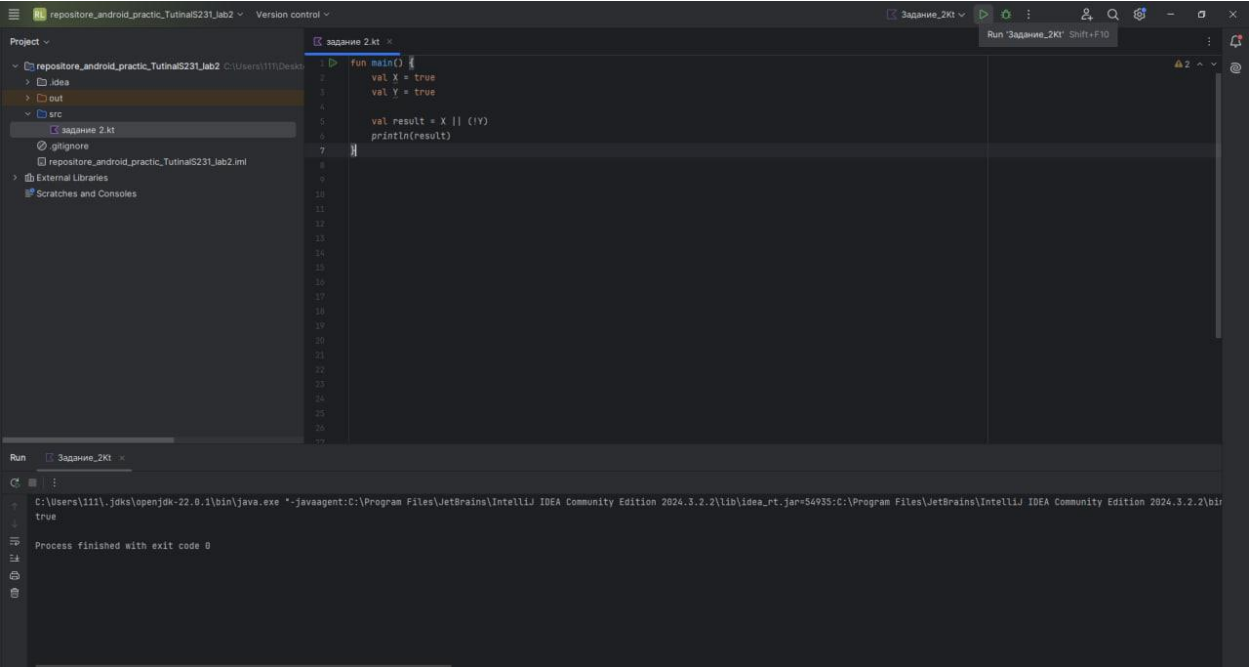
```
1 fun main() {
2     val X = true
3     val Y = true
4
5     val result = (X && Y)
6     println(result)
7 }
```

```
C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\lib\idea_rt.jar=54823:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\bin\false
false
Process finished with exit code 0
```

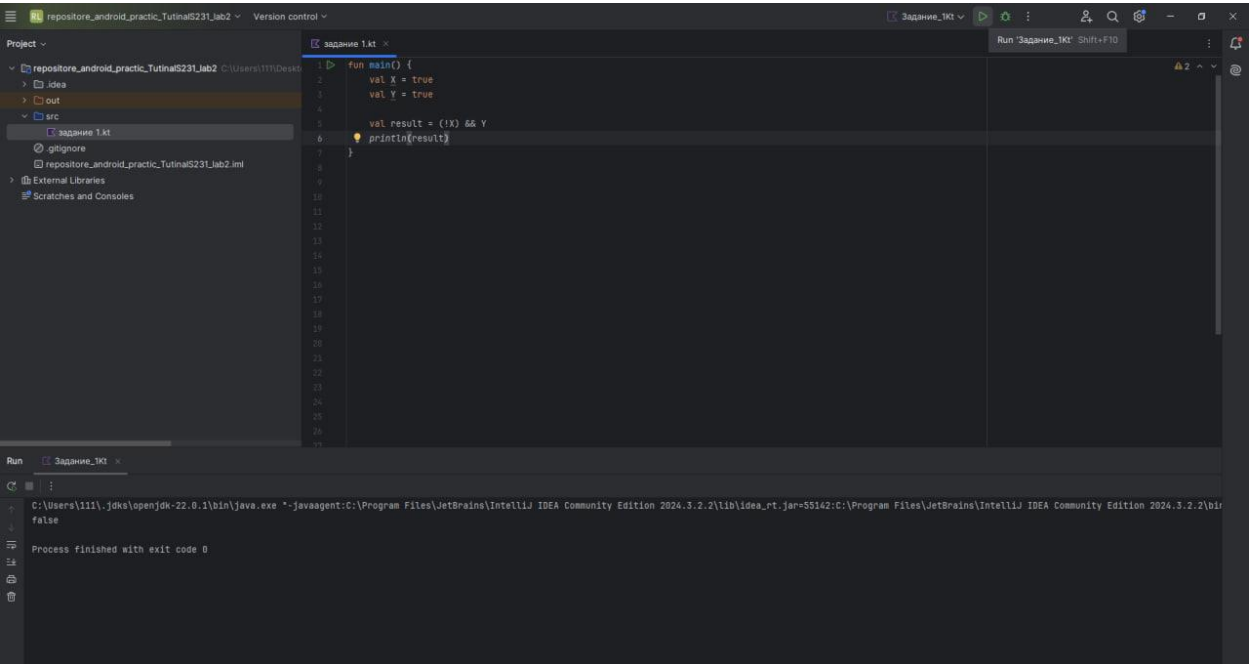
Задание 4(Б)



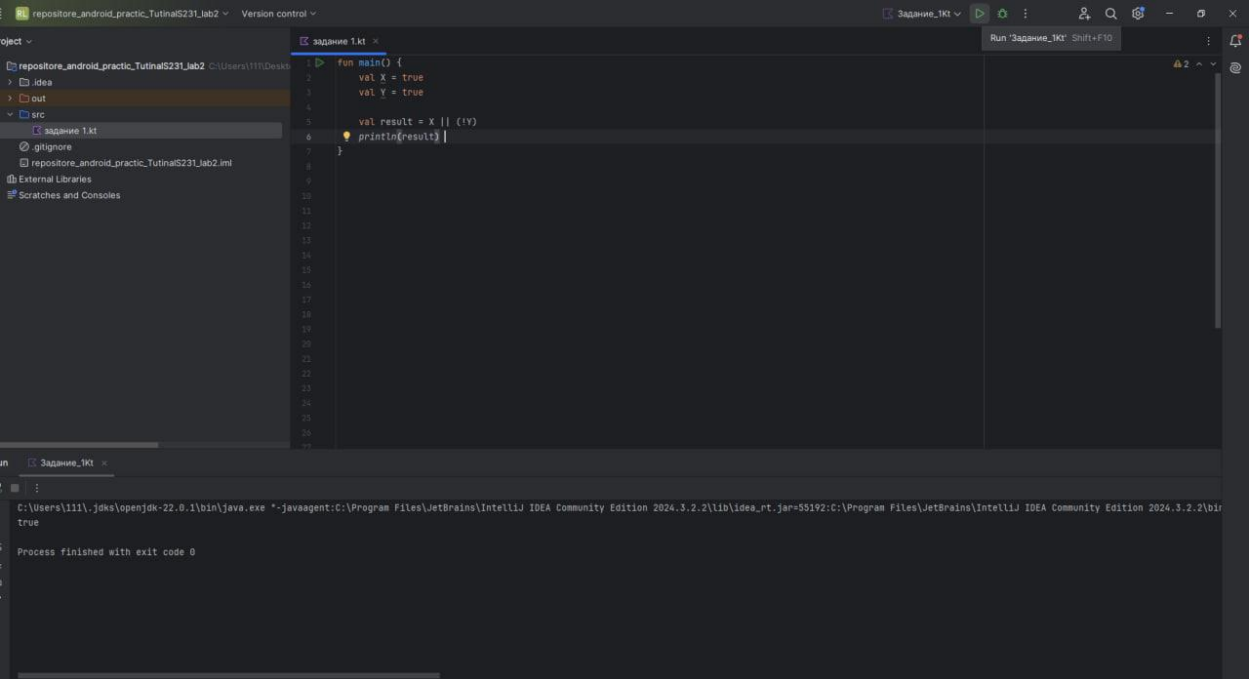
Задание 4(В)



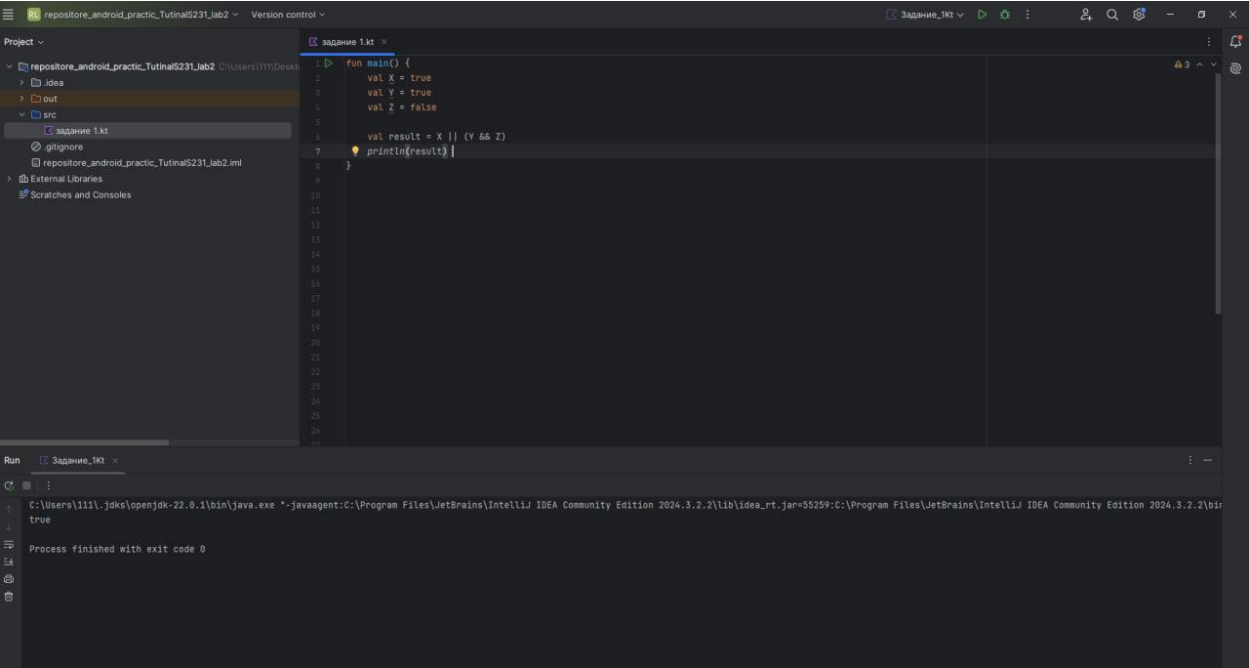
Задание 5(А)



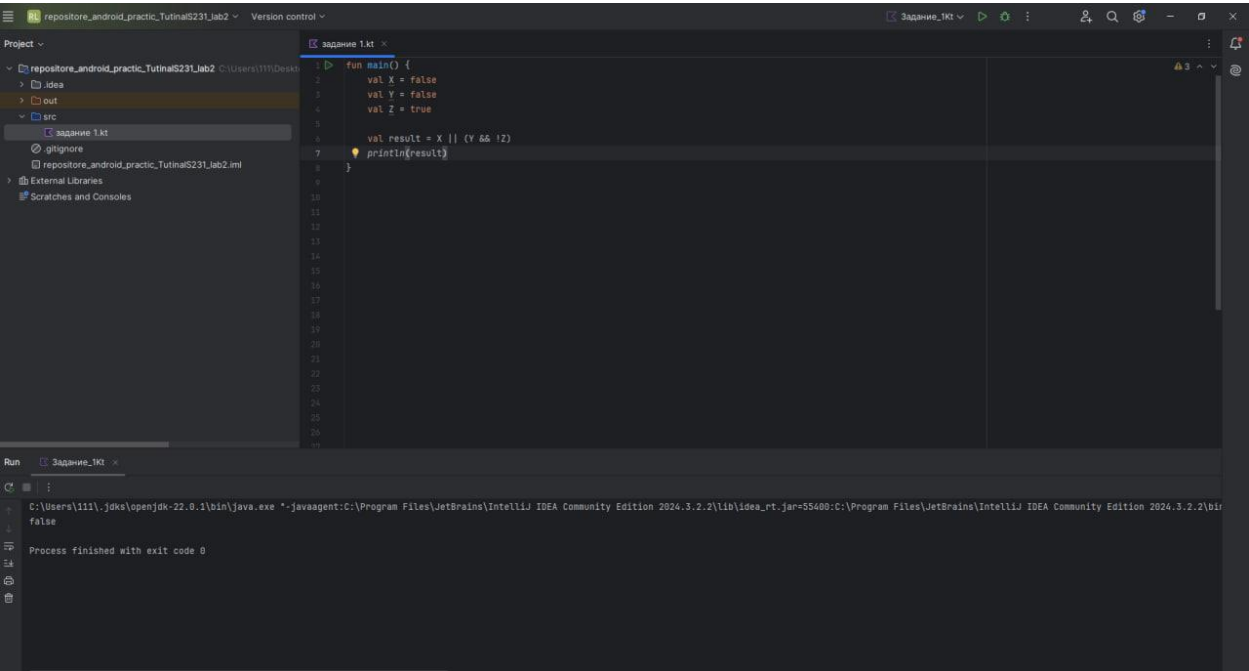
Задание 5(Б)



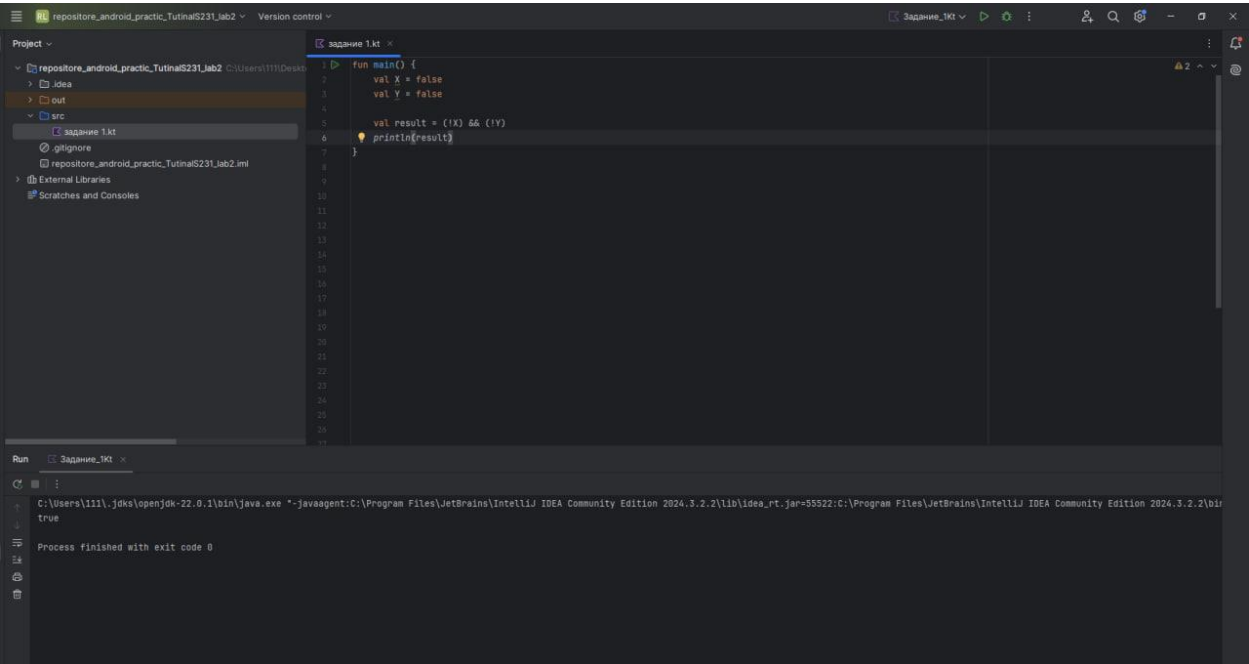
Задание 5 (B)



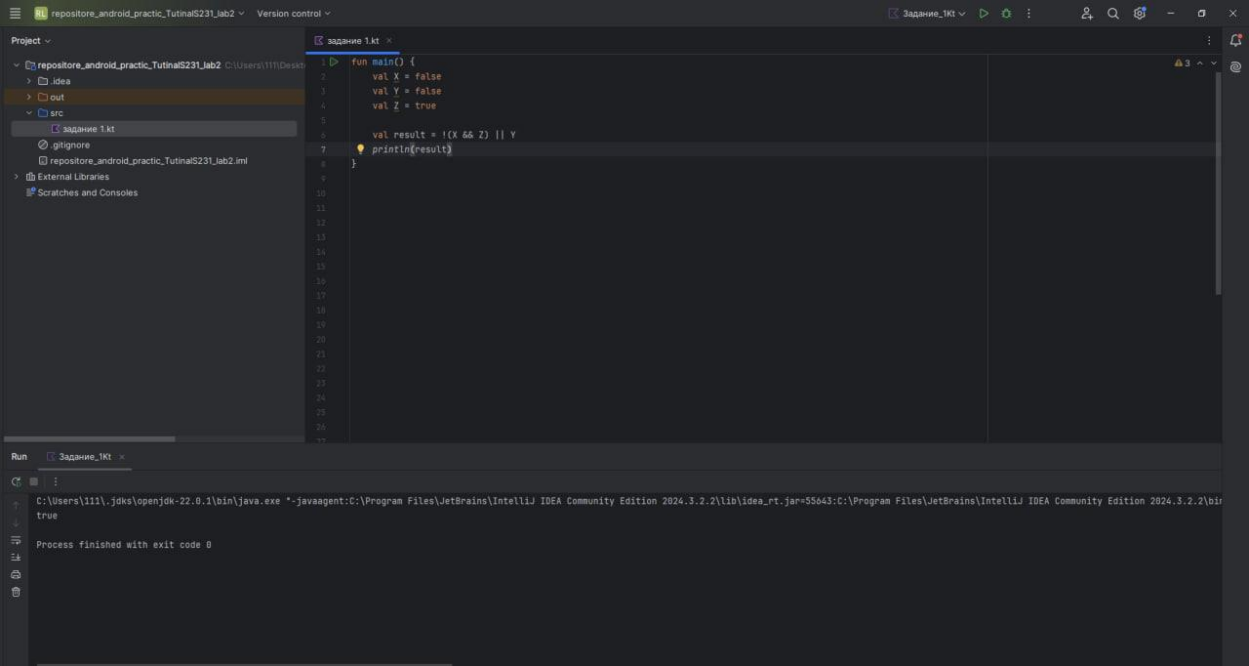
Задание 6(A)



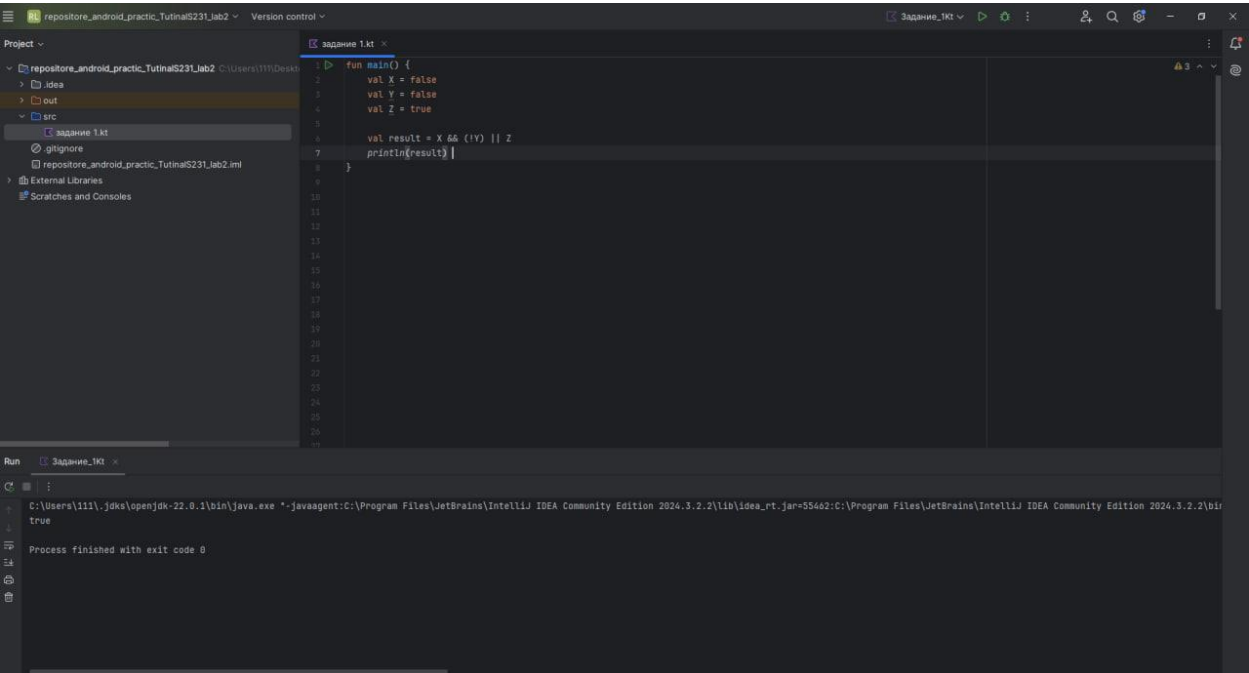
Задание 6(Б)



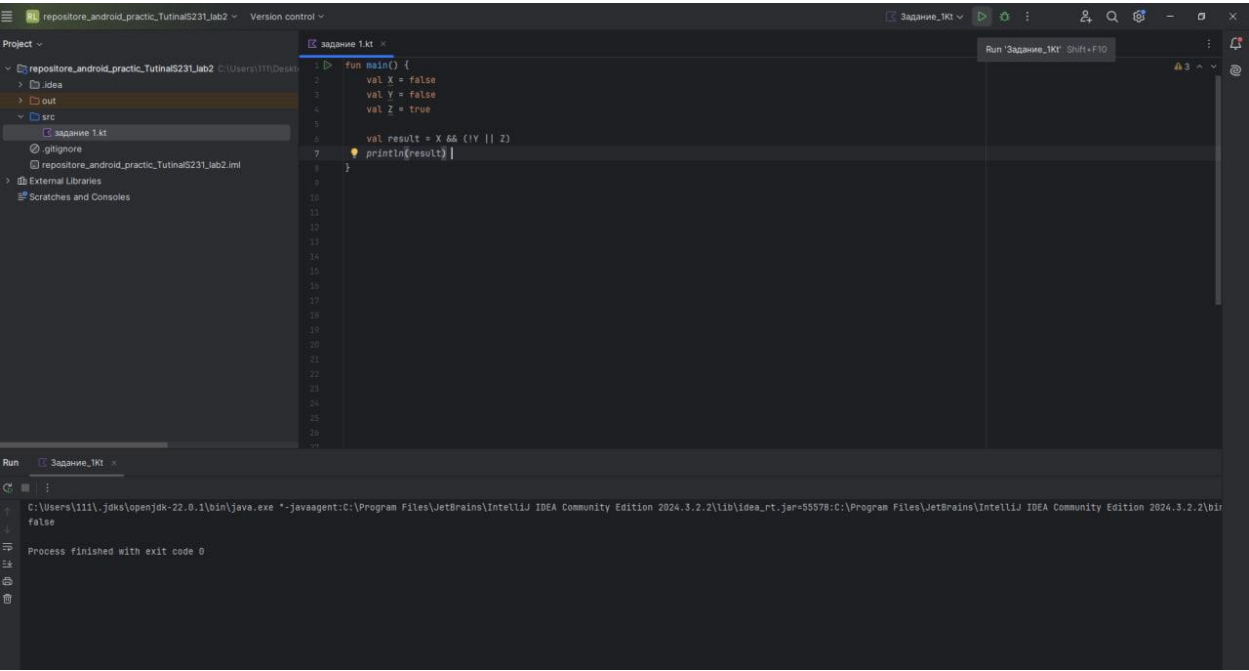
Задание 6(В)



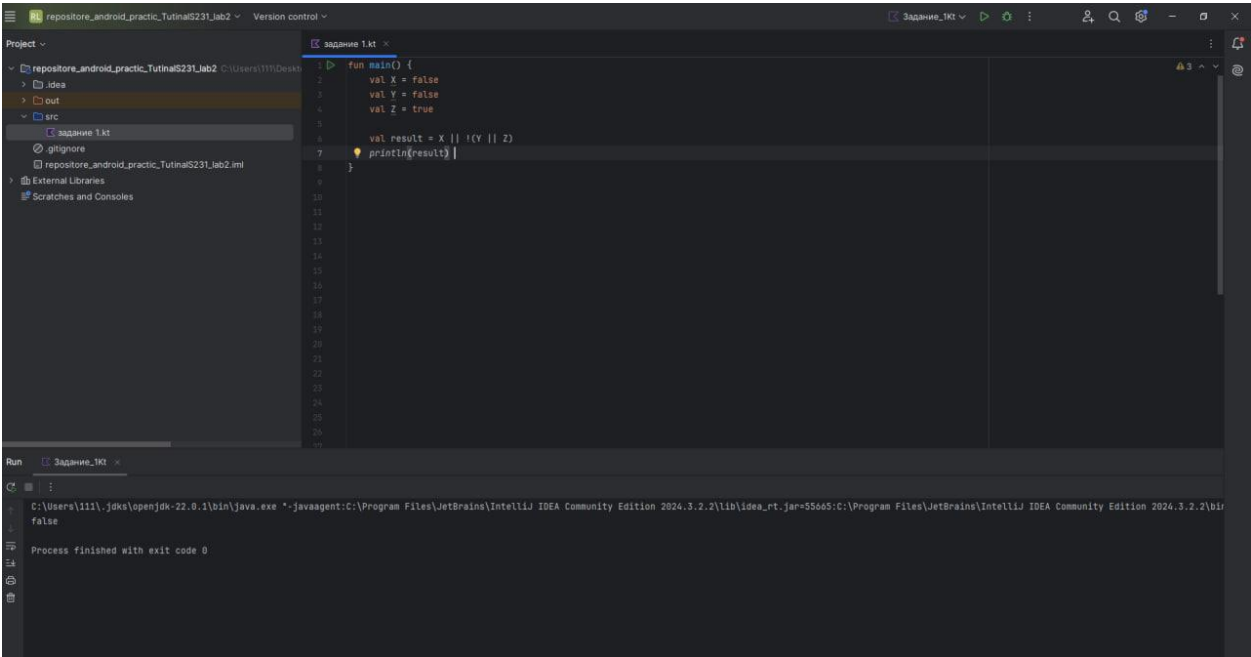
Задание 6 (Г)



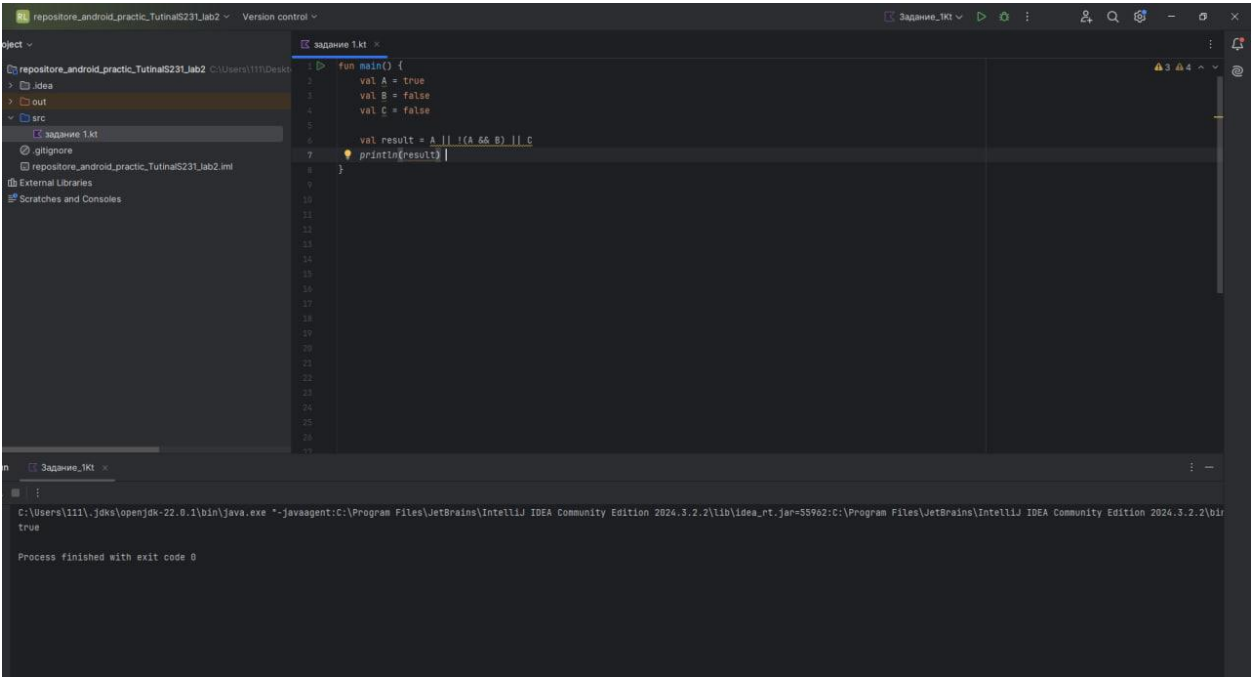
Задание 6(Д)



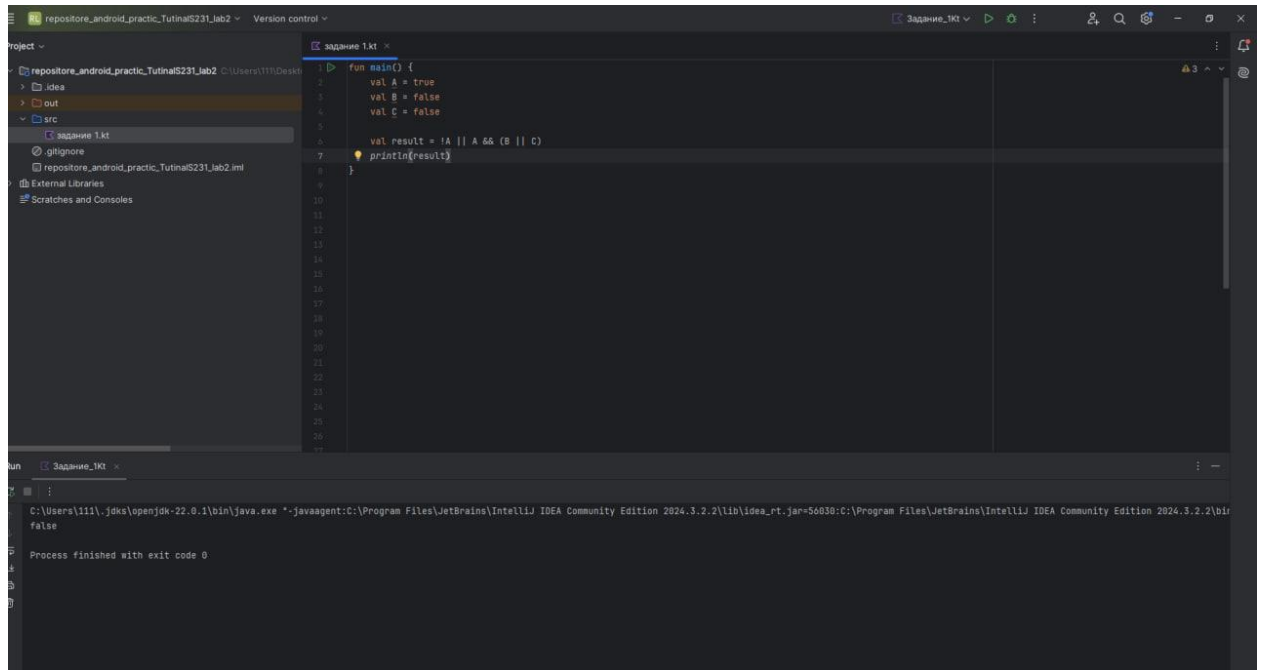
Задание 6(Е)



Задание 7(A)



Задание 7 (Б)



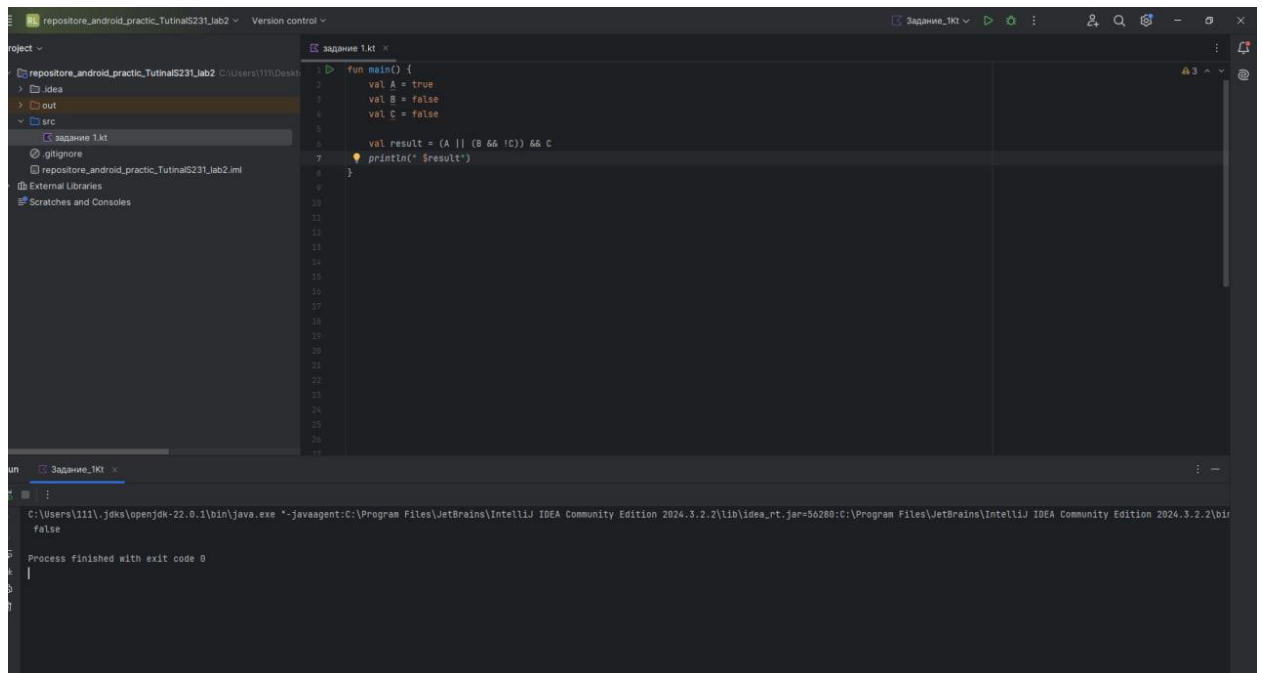
The screenshot shows the IntelliJ IDEA interface. The left sidebar displays the project structure with folders like `idea`, `out`, and `src`. The main editor window shows the file `Задание 1.kt` with the following Kotlin code:

```
1 fun main() {  
2     val A = true  
3     val B = false  
4     val C = false  
5  
6     val result = !A || A && (B || C)  
7     println(result)  
8 }  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27
```

The bottom console window shows the execution output:

```
C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\lib\idea_rt.jar=56830:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\bin  
false  
Process finished with exit code 0
```

Задание 7(В)



The screenshot shows the IntelliJ IDEA interface. The left sidebar displays the project structure with folders like `idea`, `out`, and `src`. The main editor window shows the file `Задание 1.kt` with the following Kotlin code:

```
1 fun main() {  
2     val A = true  
3     val B = false  
4     val C = false  
5  
6     val result = (A || (B && !C)) && C  
7     println(" $result")  
8 }  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27
```

The bottom console window shows the execution output:

```
C:\Users\1111\jdk\openjdk-22.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\lib\idea_rt.jar=56280:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.3.2\bin  
false  
Process finished with exit code 0
```