Phạm Việt Hải - 20215044

Kotlin basics

1. Welcome

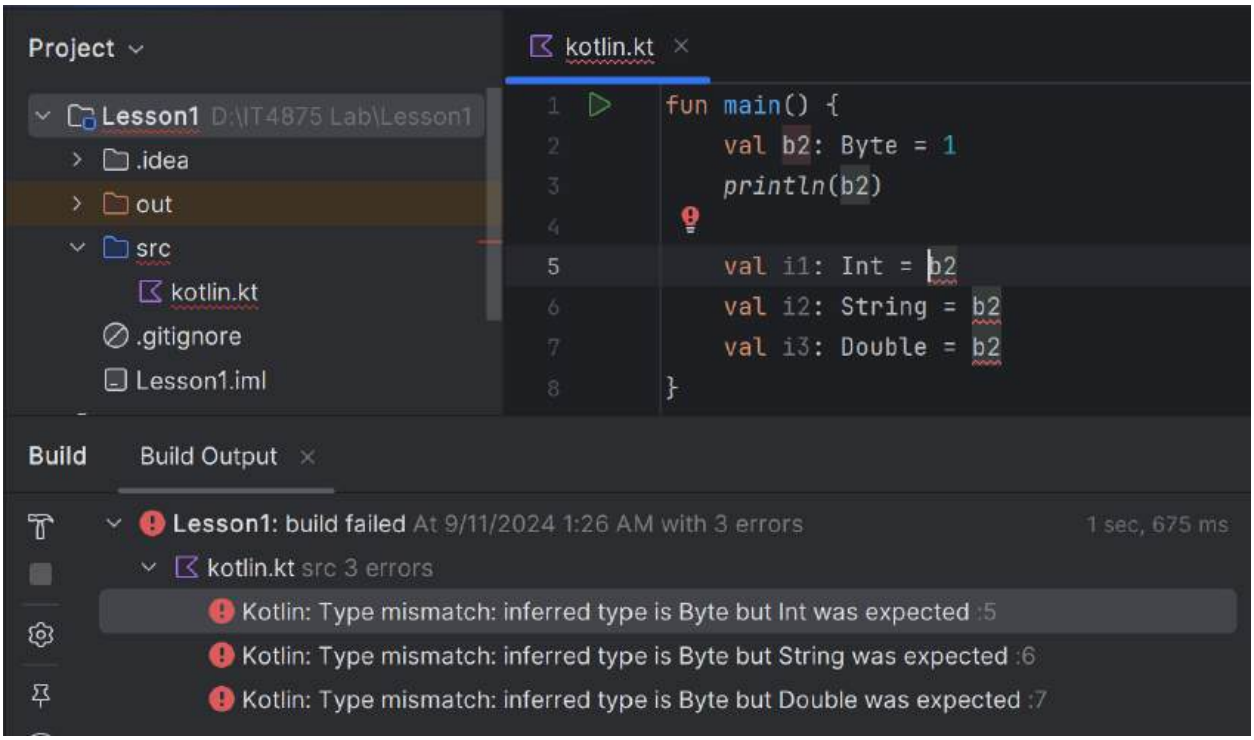
2. Learn about operators and types

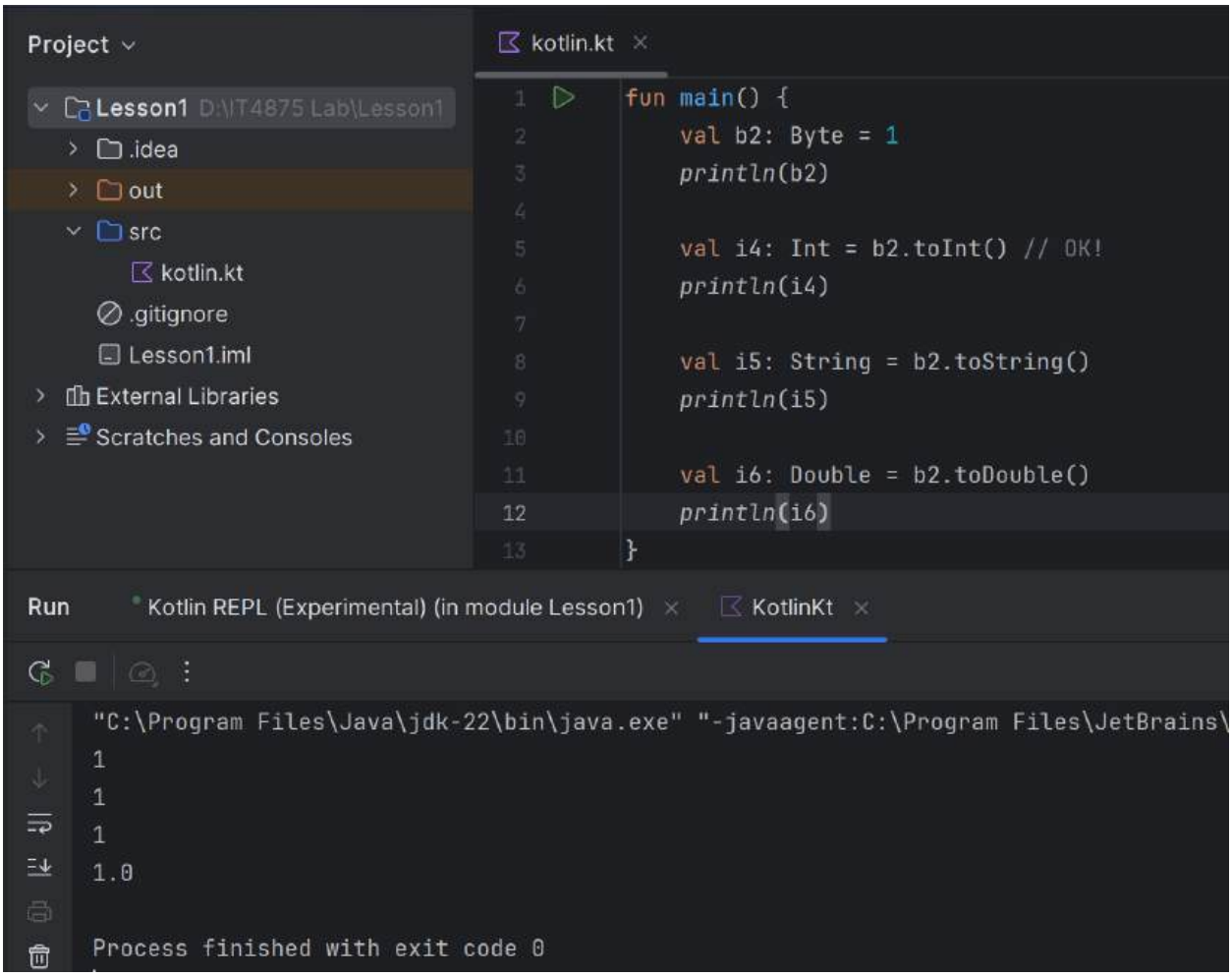
```
1+1
res0: kotlin.Int = 2

53-3
res1: kotlin.Int = 50

50/10
res2: kotlin.Int = 5

1.0/2.0
res3: kotlin.Double = 0.5

2.0*3.5
res4: kotlin.Double = 7.0
```

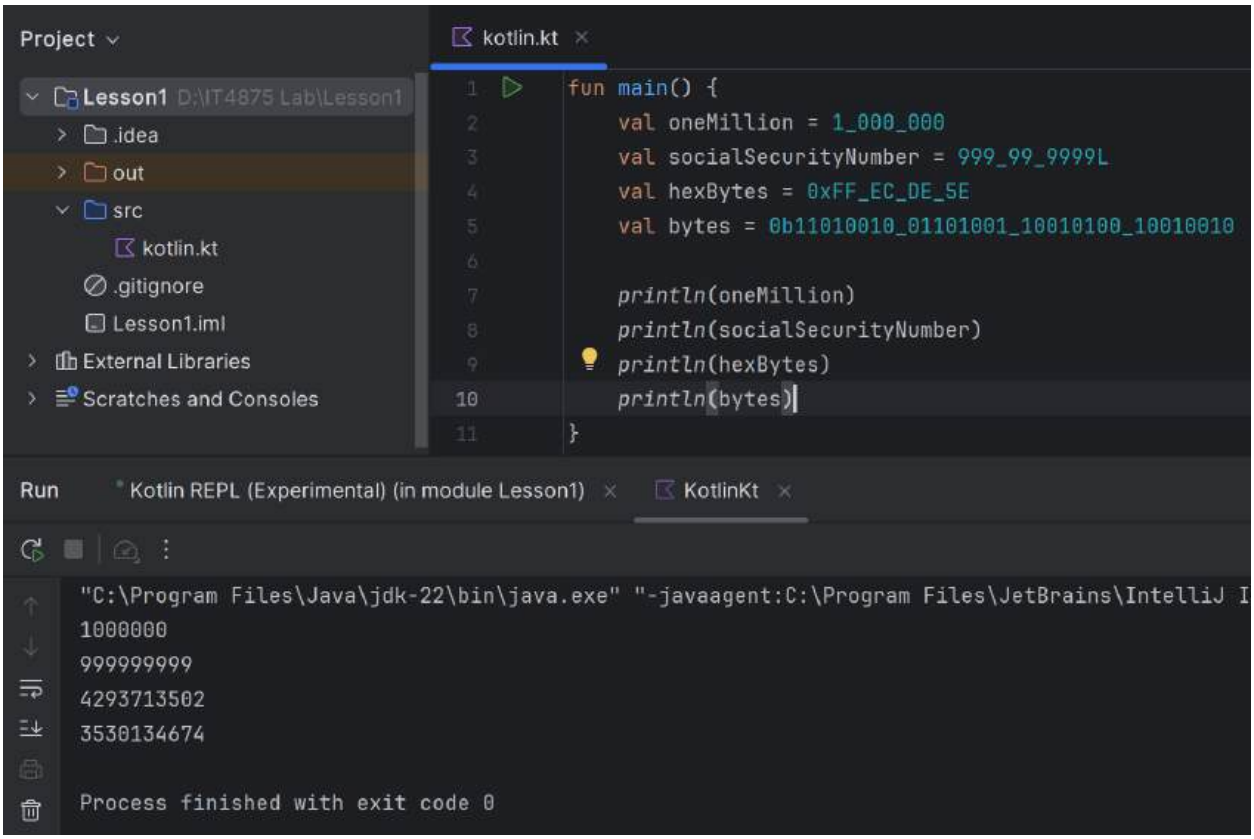
```
6*50
res5: kotlin.Int = 300

6.0*50.0
res6: kotlin.Double = 300.0

6.0*50
res7: kotlin.Double = 300.0
```

```
2.times(3)
res8: kotlin.Int = 6

3.5.plus(4)
res9: kotlin.Double = 7.5

2.4.div(2)
res10: kotlin.Double = 1.2
```

```
val i: Int = 6

val b1 = i.toByte()
 println(b1)
6
```




Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
.gitignore
Lesson1.iml
External Libraries
Scratches and Consoles
kotlin.kt
fun main() {
val b2: Byte = 1
println(b2)
val i4: Int = b2.toInt() // OK!
println(i4)
val i5: String = b2.toString()
println(i5)
val i6: Double = b2.toDouble()
println(i6)
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\
1
1
1
1.0
Process finished with exit code 0


Project
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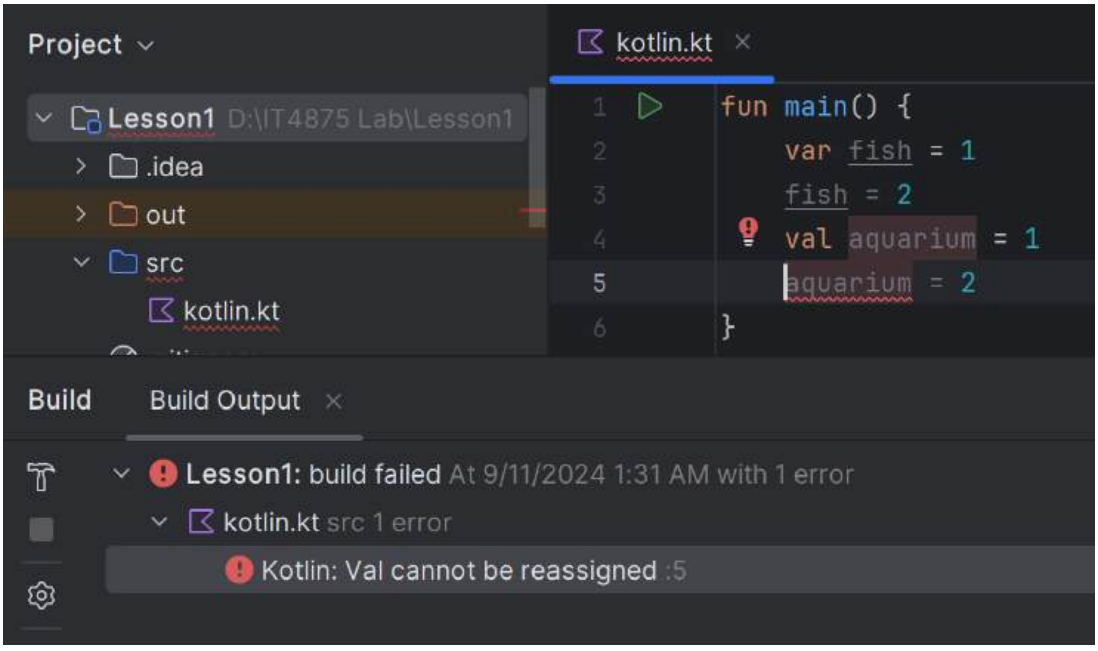
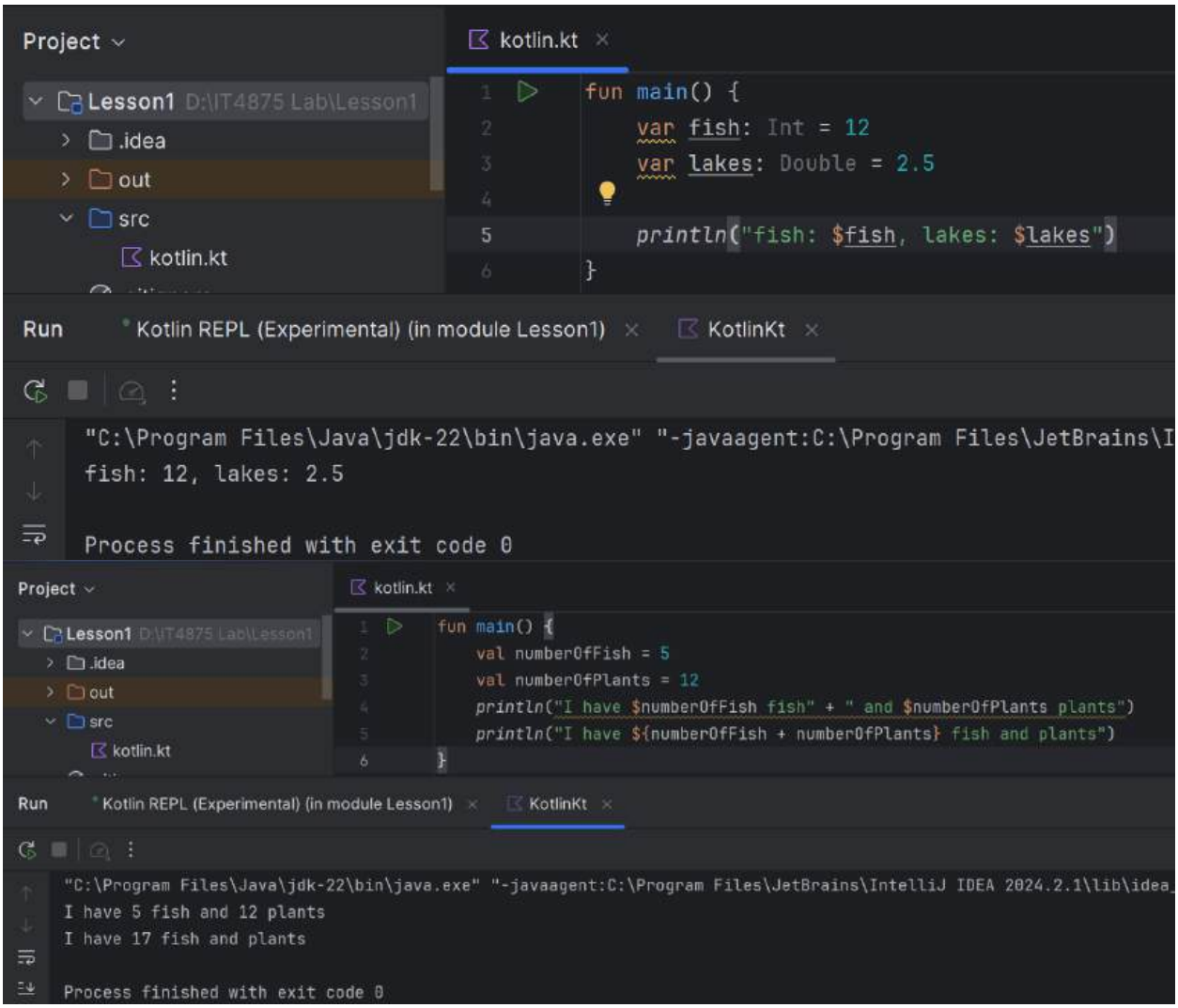
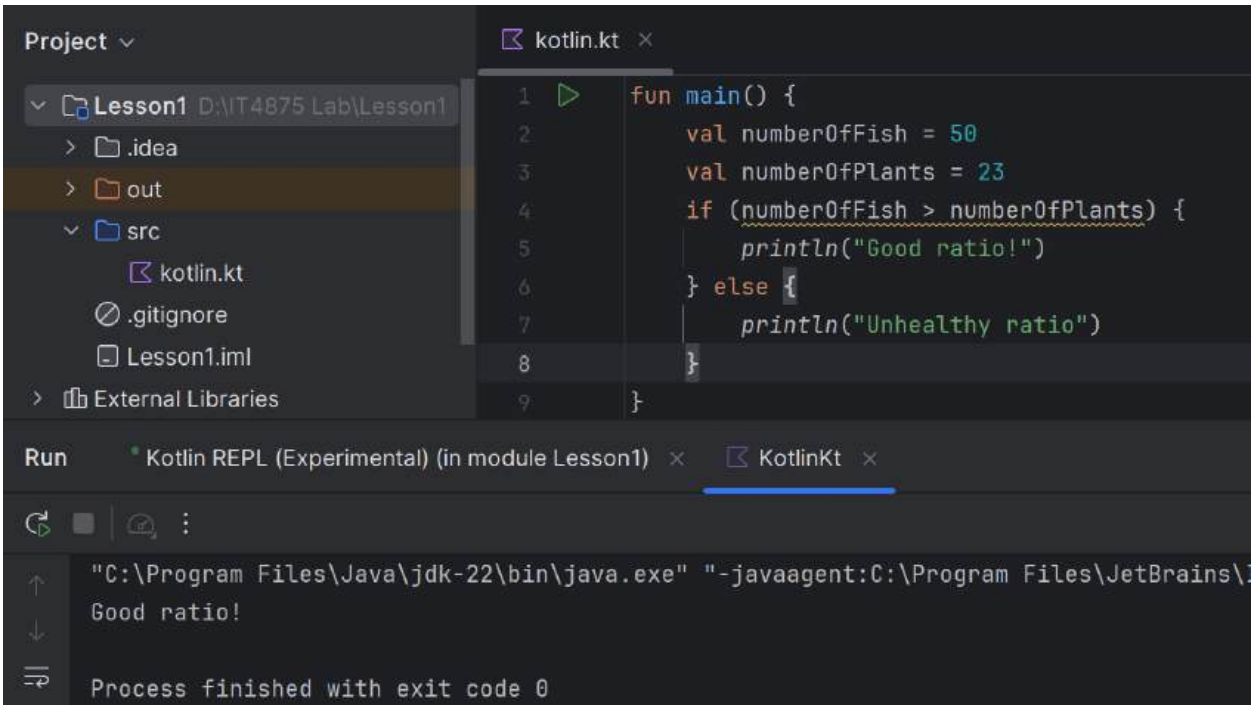
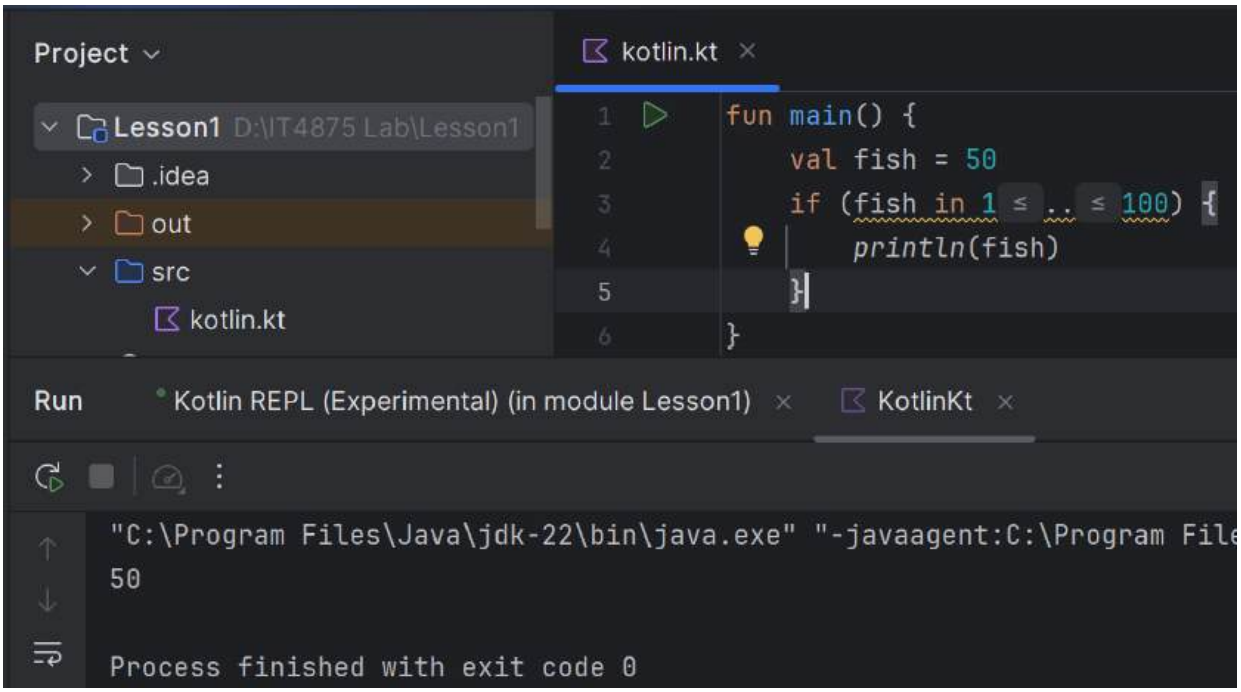
out
src
kotlin.kt
.gitignore
Lesson1.iml
External Libraries
Scratches and Consoles
kotlin.kt
fun main() {
val oneMillion = 1_000_000
val socialSecurityNumber = 999_99_9999L
val hexBytes = 0xFF_EC_DE_5E
val bytes = 0b11010010_01101001_10010100_10010010
println(oneMillion)
println(socialSecurityNumber)
println(hexBytes)
println(bytes)
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ I
1000000
999999999
4293713502
3530134674
Process finished with exit code 0

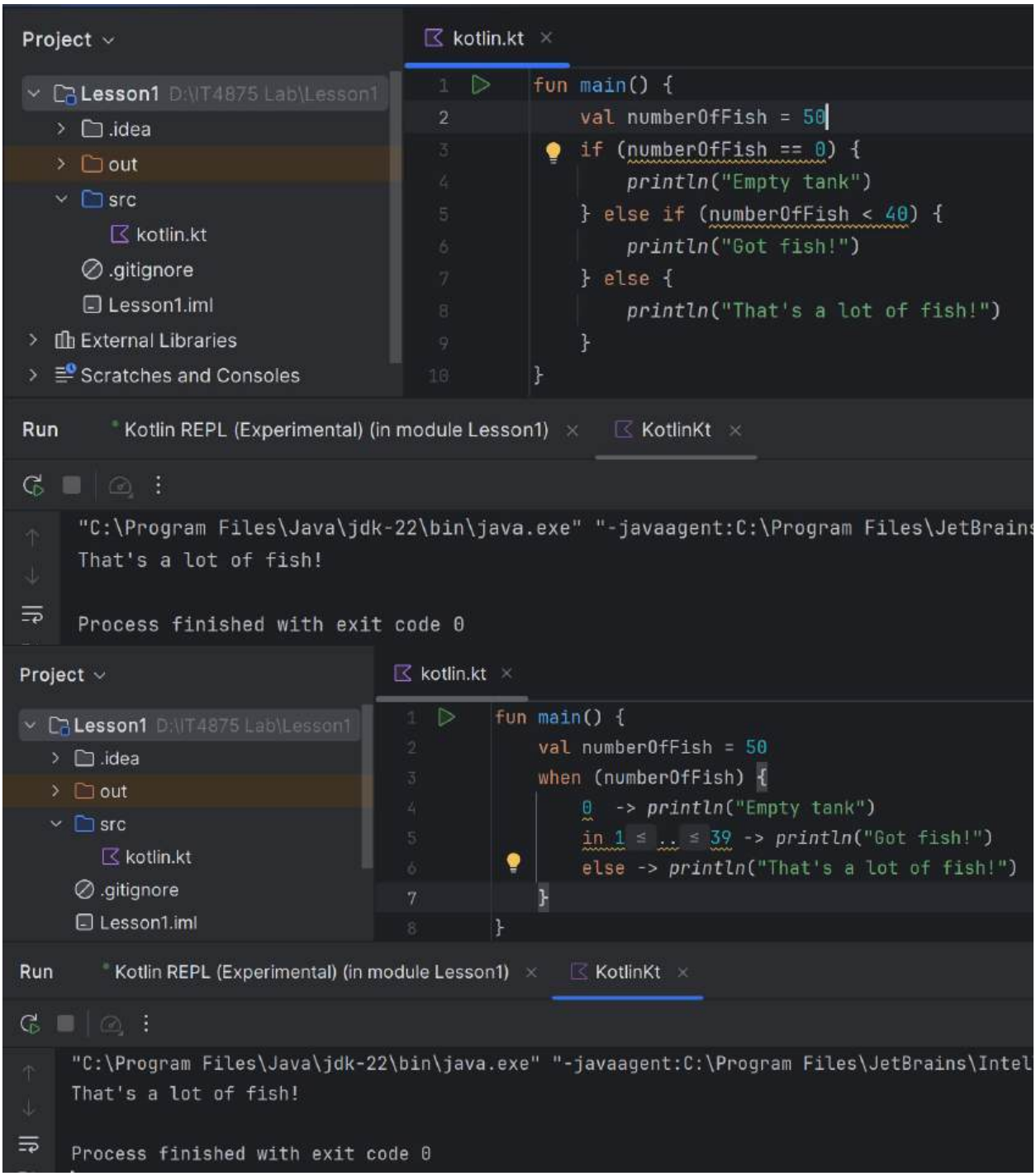

Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
kotlin.kt
fun main() {
var fish = 1
fish = 2
val aquarium = 1
aquarium = 2
}
Build
Build Output
Lesson1: build failed At 9/11/2024 1:31 AM with 1 error
kotlin.kt src 1 error
Kotlin: Val cannot be reassigned :5



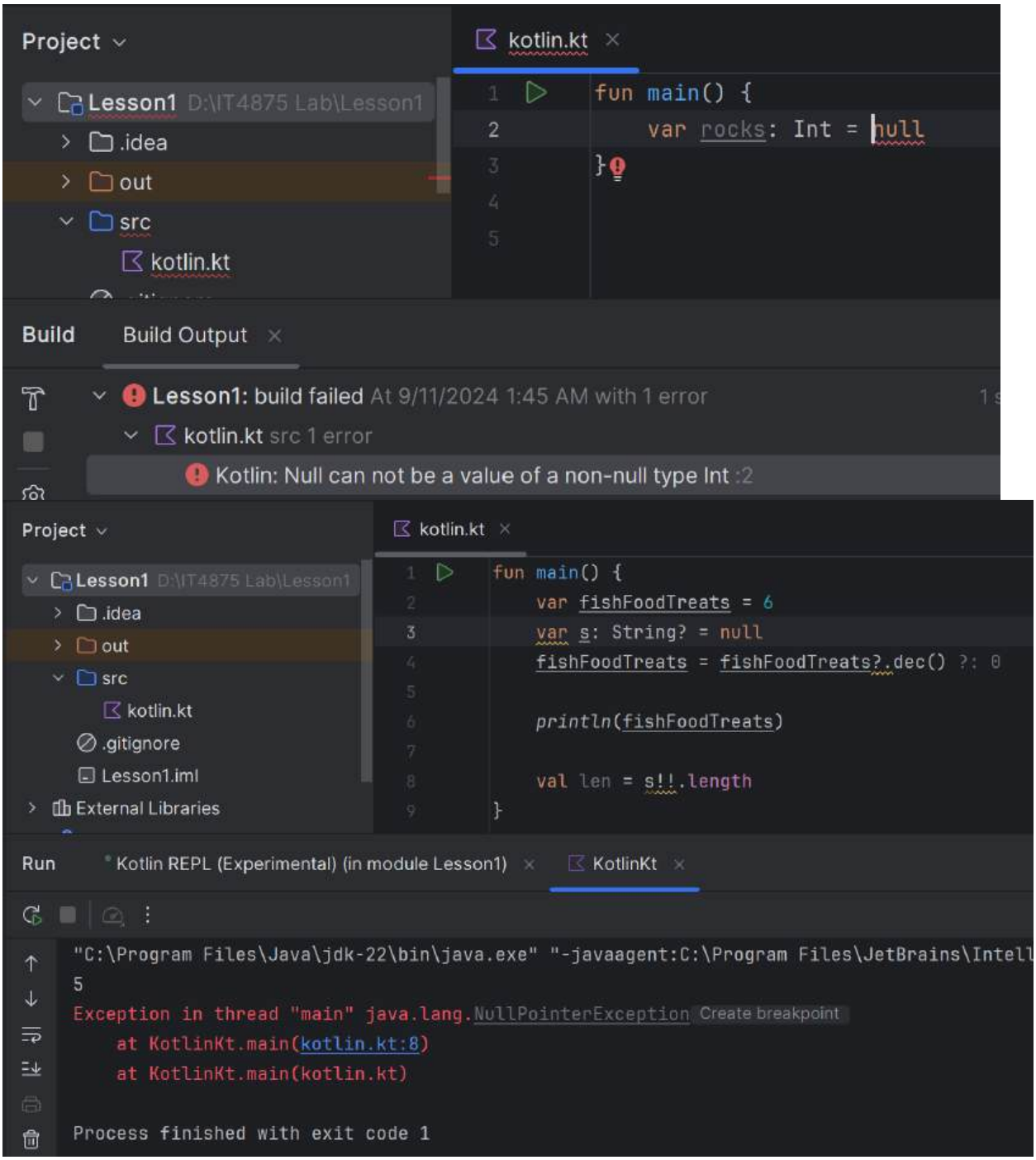
3. Compare conditions and booleans


Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
.gitignore
Lesson1.iml
External Libraries
kotlin.kt
fun main() {
val numberOfFish = 50
val numberOfPlants = 23
if (numberOfFish > numberOfPlants) {
println("Good ratio!")
} else {
println("Unhealthy ratio")
}
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\
Good ratio!
Process finished with exit code 0

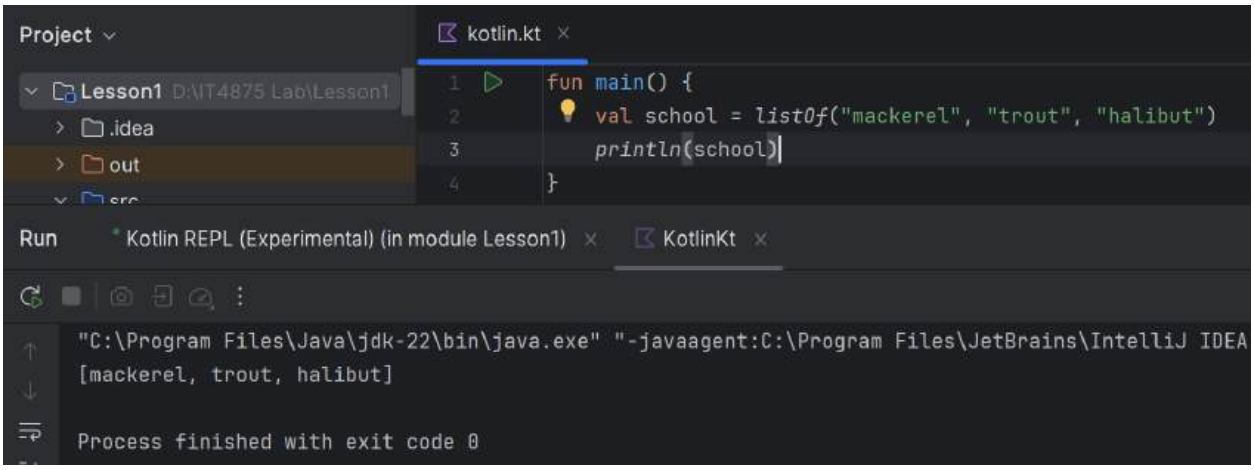

Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
kotlin.kt
fun main() {
val fish = 50
if (fish in 1 ≤ .. ≤ 100) {
println(fish)
}
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program File
50
Process finished with exit code 0

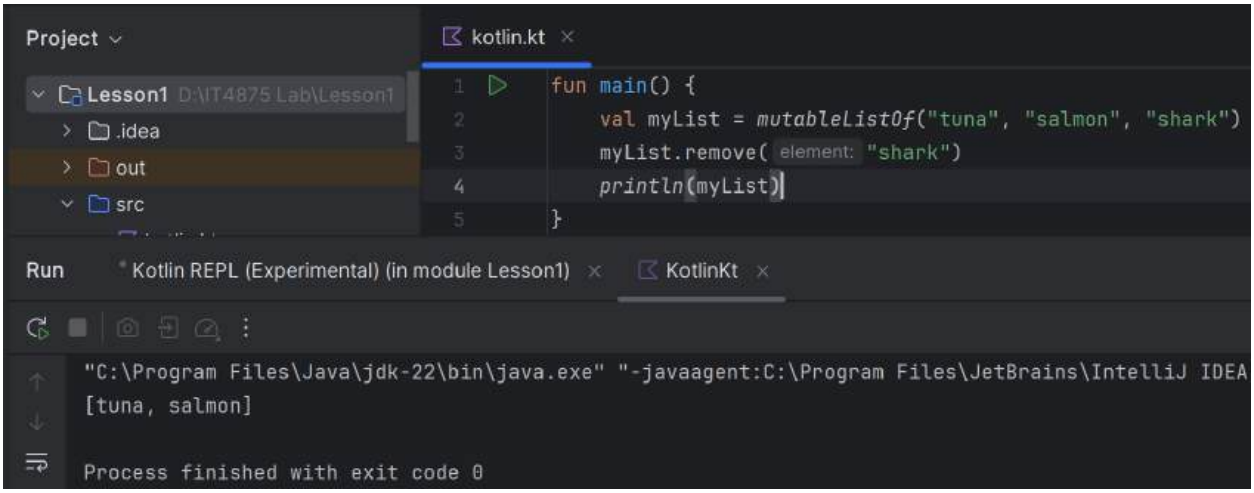


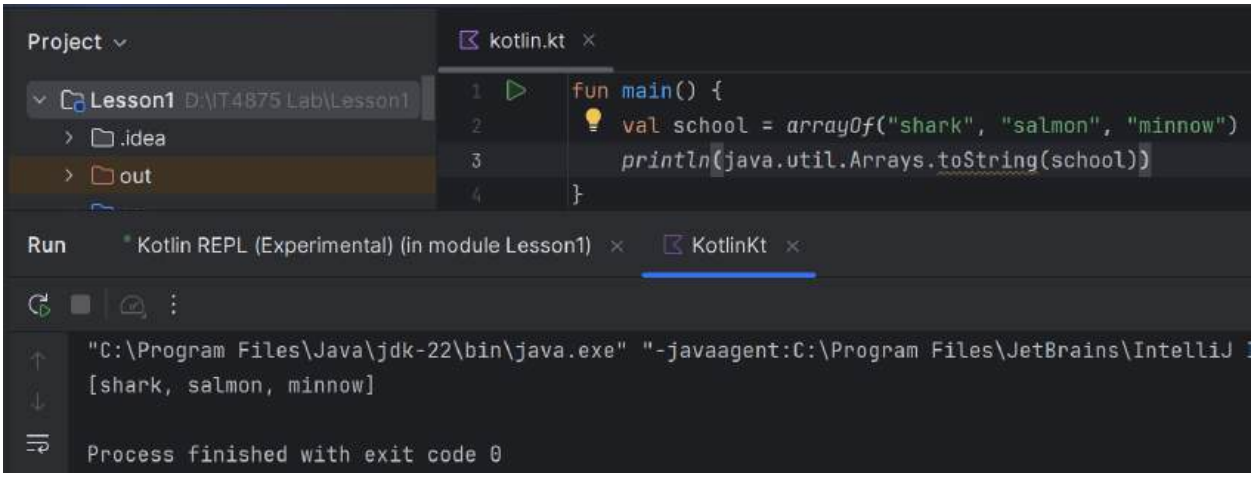
4. Learn about nullability

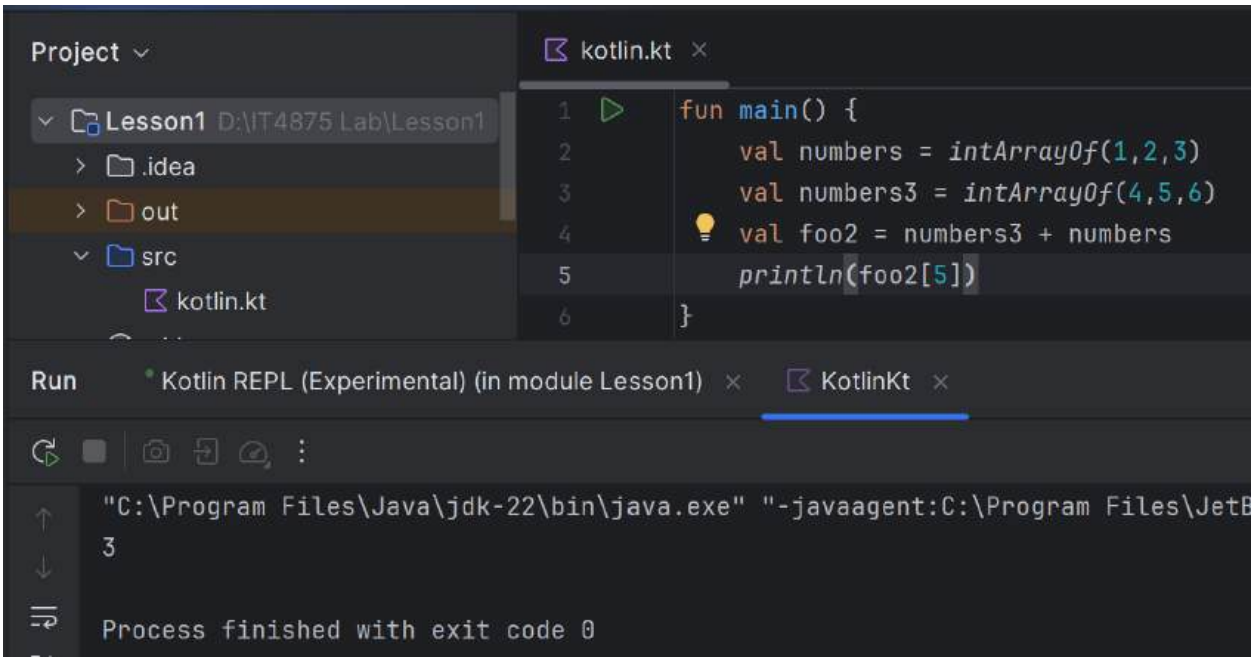


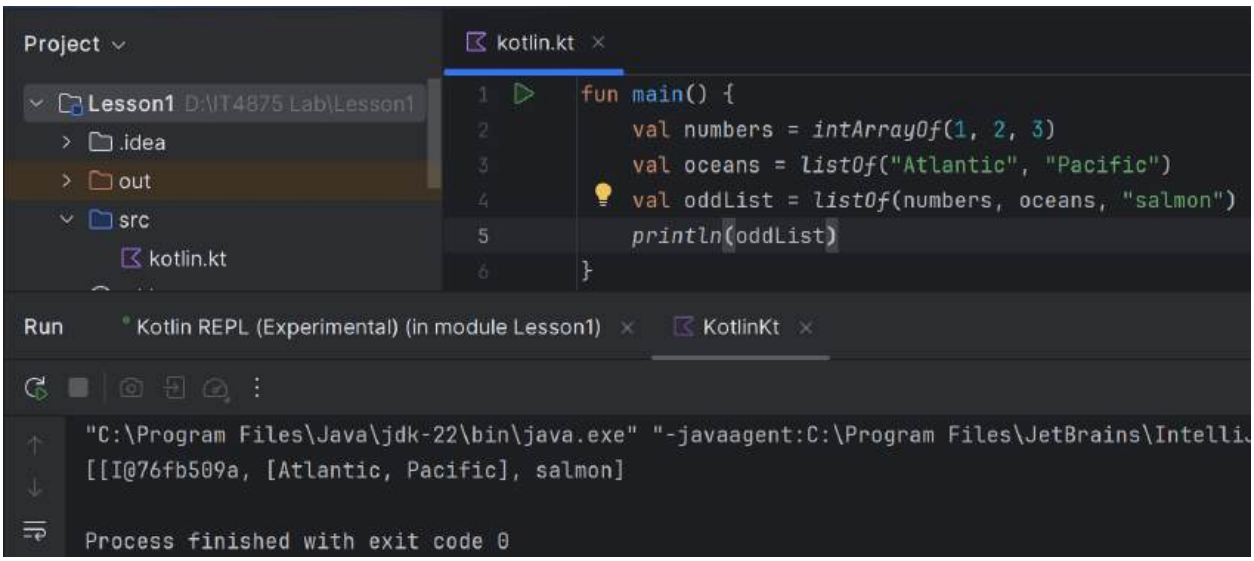
5. Explore arrays, lists, and loops

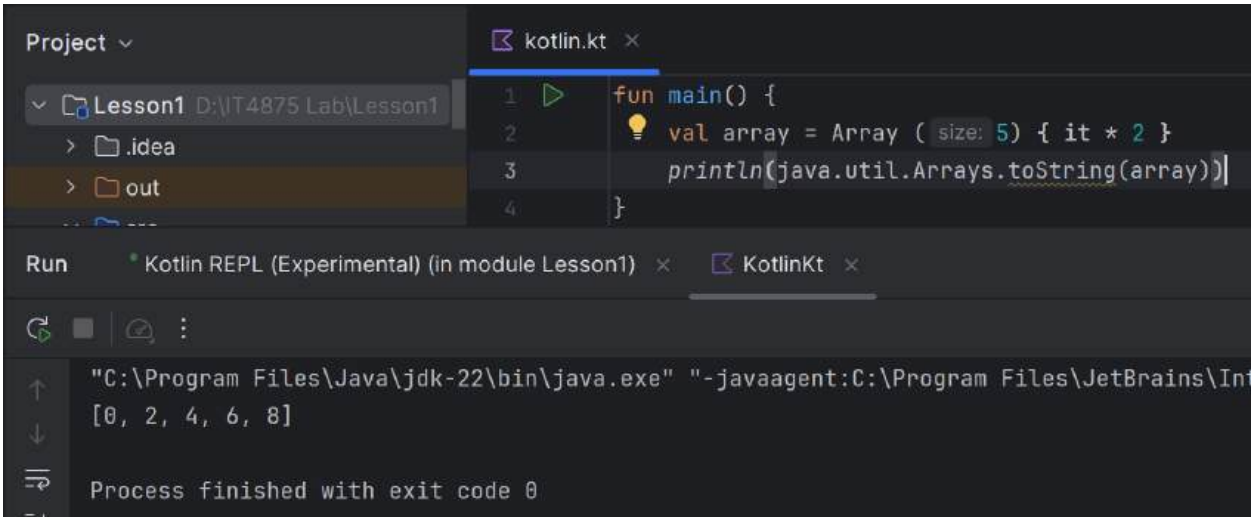

Project
kotlin.kt
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
fun main() {
val school = listOf("mackerel", "trout", "halibut")
println(school)
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA
[mackerel, trout, halibut]
Process finished with exit code 0

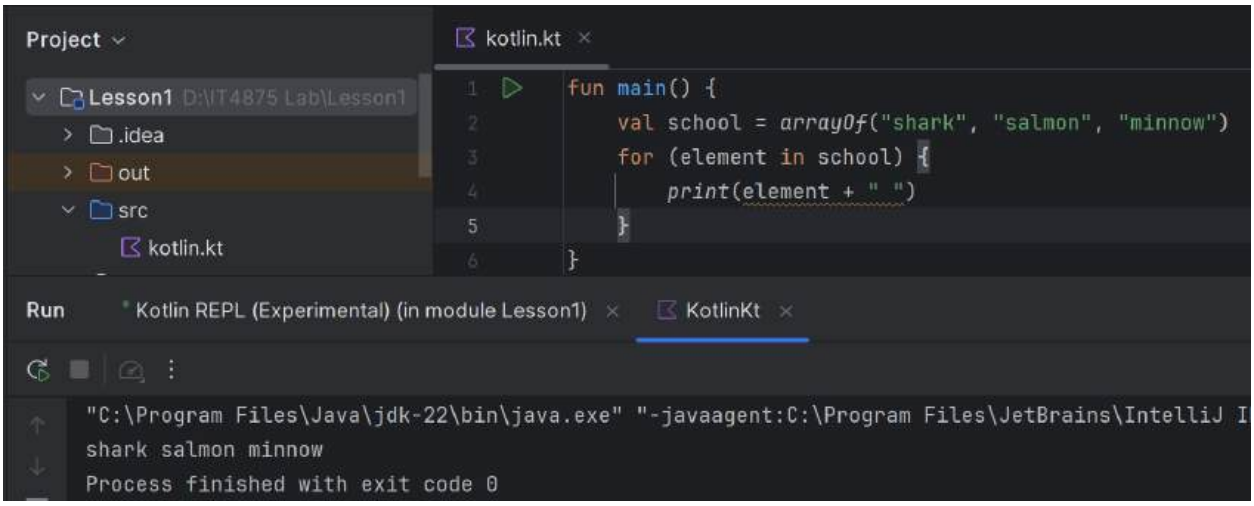

Project
kotlin.kt
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
fun main() {
val myList = mutableListOf("tuna", "salmon", "shark")
myList.remove(element: "shark")
println(myList)
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA
[tuna, salmon]
Process finished with exit code 0

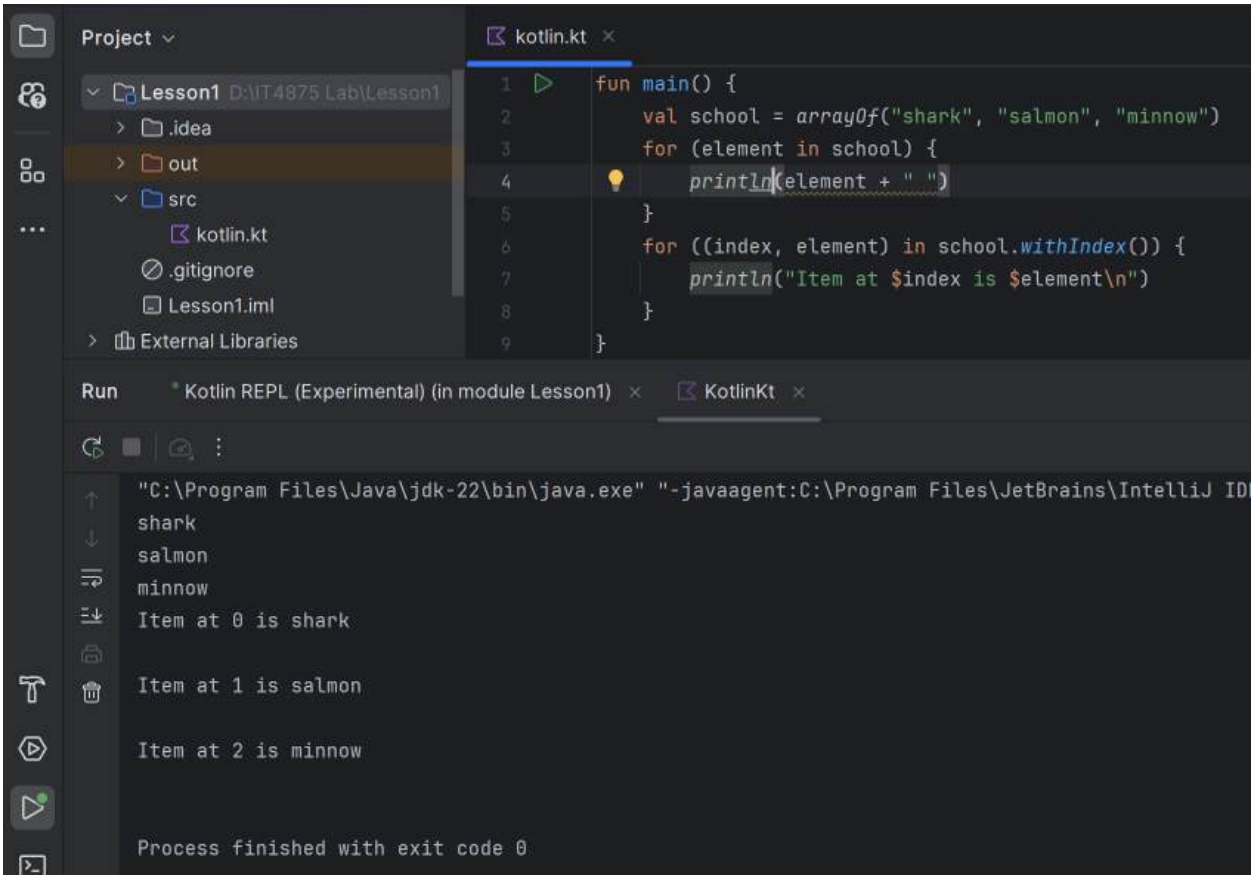

Project
kotlin.kt
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
fun main() {
val school = arrayOf("shark", "salmon", "minnow")
println(java.util.Arrays.toString(school))
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ
[shark, salmon, minnow]
Process finished with exit code 0

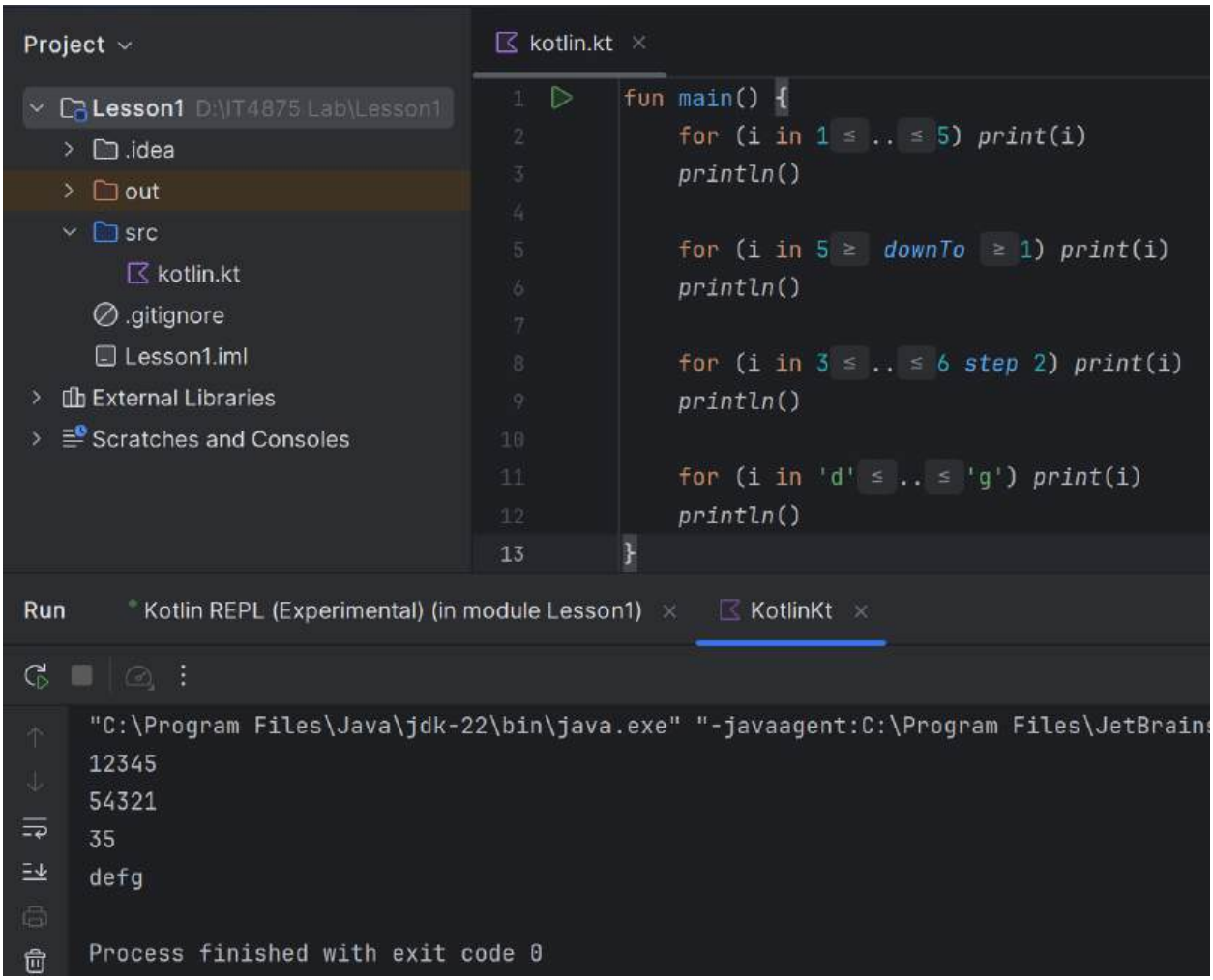

Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
kotlin.kt
fun main() {
val numbers = intArrayOf(1,2,3)
val numbers3 = intArrayOf(4,5,6)
val foo2 = numbers3 + numbers
println(foo2[5])
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetB
3
Process finished with exit code 0

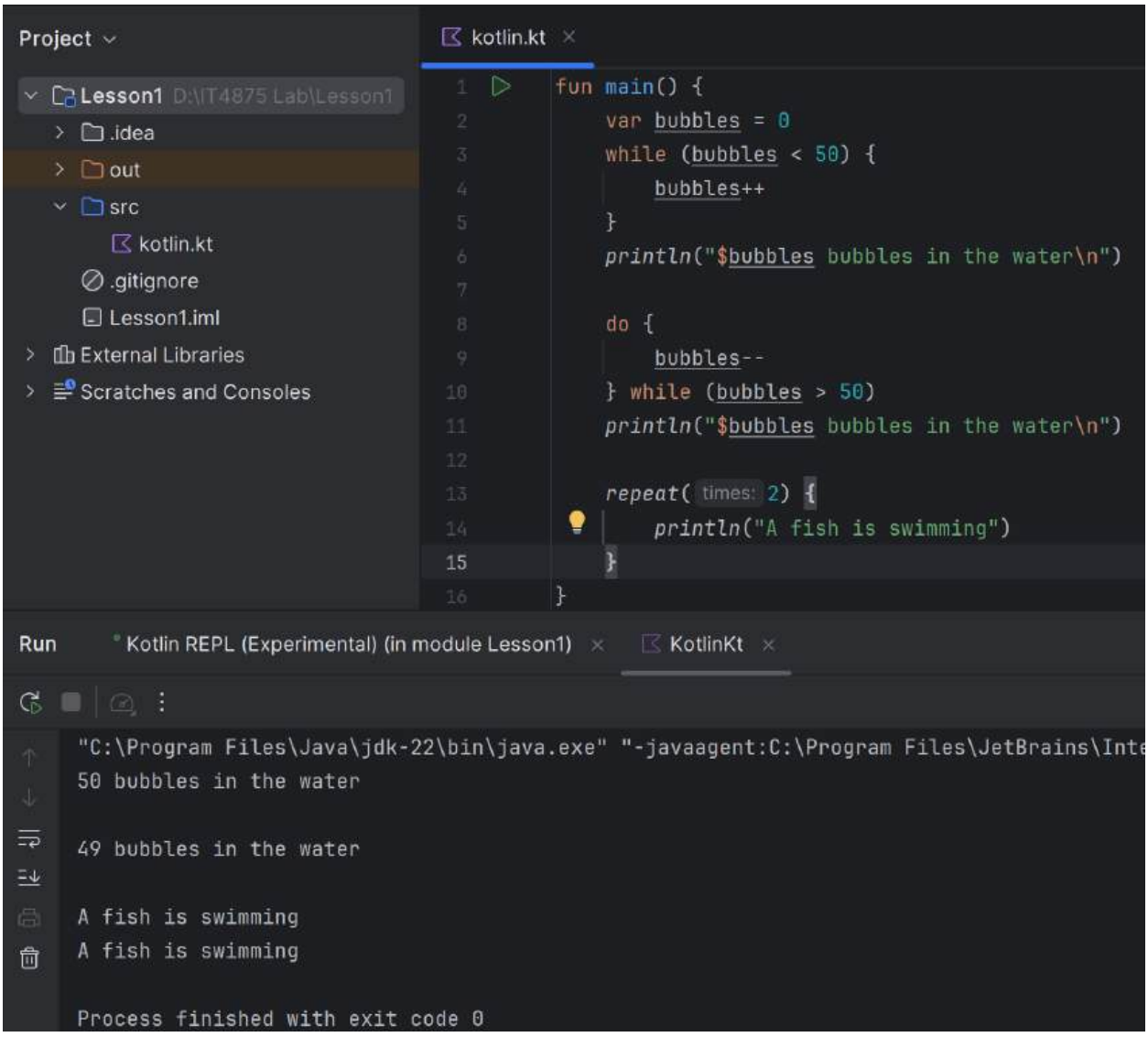

Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
kotlin.kt
fun main() {
val numbers = intArrayOf(1, 2, 3)
val oceans = listOf("Atlantic", "Pacific")
val oddList = listOf(numbers, oceans, "salmon")
println(oddList)
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\Intelli
[[I@76fb509a, [Atlantic, Pacific], salmon]
Process finished with exit code 0


Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
kotlin.kt
fun main() {
val array = Array (size: 5) { it * 2 }
println(java.util.Arrays.toString(array))
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\Int
[0, 2, 4, 6, 8]
Process finished with exit code 0


Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
kotlin.kt
fun main() {
val school = arrayOf("shark", "salmon", "minnow")
for (element in school) {
print(element + " ")
}
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ I
shark salmon minnow
Process finished with exit code 0


Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
.gitignore
Lesson1.iml
External Libraries
kotlin.kt
fun main() {
val school = arrayOf("shark", "salmon", "minnow")
for (element in school) {
println(element + " ")
}
for ((index, element) in school.withIndex()) {
println("Item at $index is $element\n")
}
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ ID
shark
salmon
minnow
Item at 0 is shark
Item at 1 is salmon
Item at 2 is minnow
Process finished with exit code 0


Project
Lesson1 D:\IT4875 Lab\Lesson1
.idea
out
src
kotlin.kt
.gitignore
Lesson1.iml
External Libraries
Scratches and Consoles
kotlin.kt
fun main() {
for (i in 1 ≤ .. ≤ 5) print(i)
println()
for (i in 5 ≥ downTo ≥ 1) print(i)
println()
for (i in 3 ≤ .. ≤ 6 step 2) print(i)
println()
for (i in 'd' ≤ .. ≤ 'g') print(i)
println()
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains
12345
54321
35
defg
Process finished with exit code 0


Project
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out
src
kotlin.kt
.gitignore
Lesson1.iml
External Libraries
Scratches and Consoles
kotlin.kt
fun main() {
var bubbles = 0
while (bubbles < 50) {
bubbles++
}
println("$bubbles bubbles in the water\n")
do {
bubbles--
} while (bubbles > 50)
println("$bubbles bubbles in the water\n")
repeat(times: 2) {
println("A fish is swimming")
}
}
Run
Kotlin REPL (Experimental) (in module Lesson1)
KotlinKt
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\Inte
50 bubbles in the water
49 bubbles in the water
A fish is swimming
A fish is swimming
Process finished with exit code 0