Mobile App Development Lab Assignment 1 - Execute Kotlin Programs

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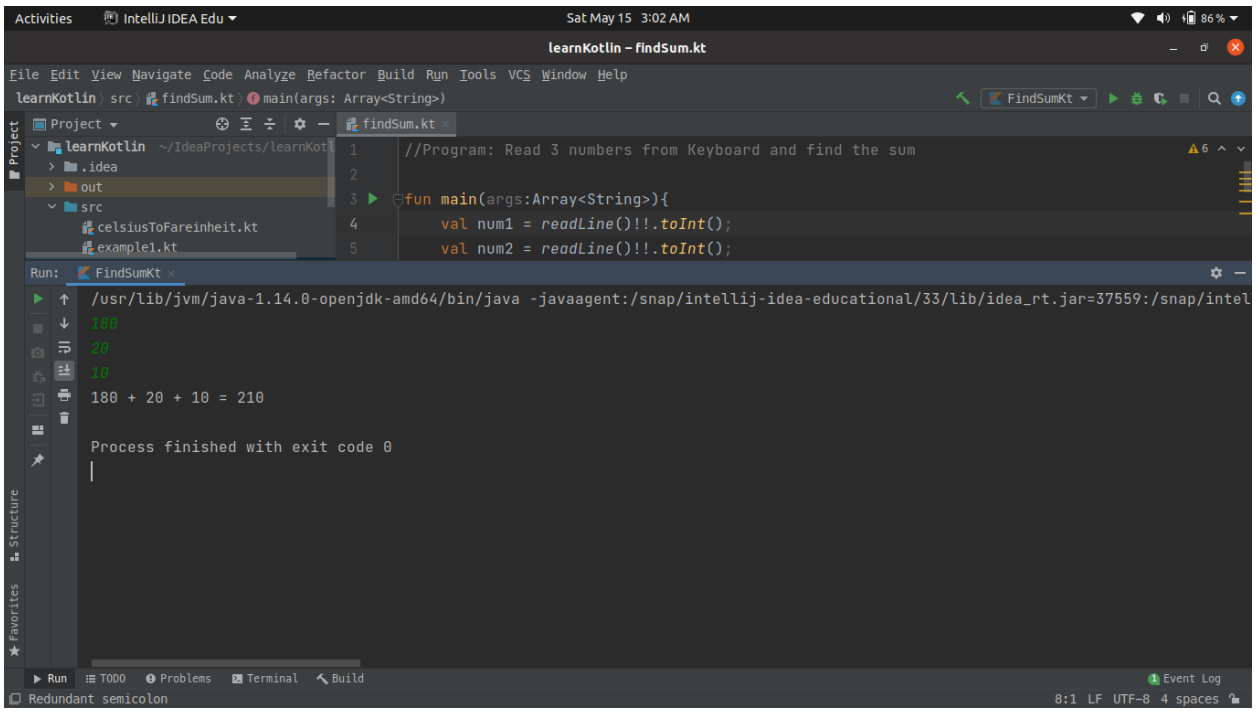
All the code can be found here:

(Link url: https://github.com/nk4456542/learnKotlin/tree/main/src)

1. Program: Read 3 numbers from Keyboard and find the sum

```
//Program: Read 3 numbers from Keyboard and find the sum
fun main(args:Array<String>){
    val num1 = readLine()!!.toInt();
    val num2 = readLine()!!.toInt();
    val num3 = readLine()!!.toInt();
    val sum = num1 +  num2 + num3;
    println("$num1 + $num2 + $num3 = $sum");
}
```

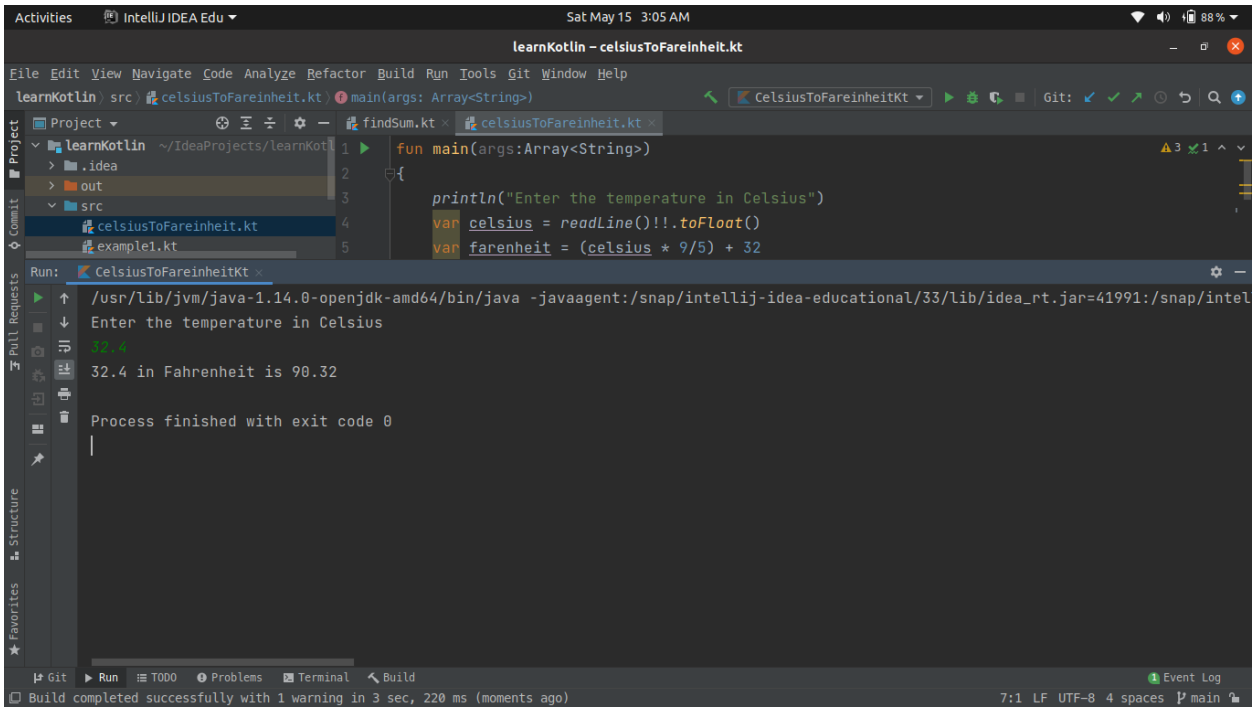
Output:



2. Program: Read temperature in Celsius and convert to Fahrenheit

```
//Program: Read temperature in Celsius and convert to Fahrenheit
fun main(args:Array<String>)
{
    println("Enter the temperature in Celsius")
    var celsius = readLine()!!.toFloat()
    var fahrenheit = (celsius * 9/5) + 32
    println("$celsius in Fahrenheit is $fahrenheit")
}
```

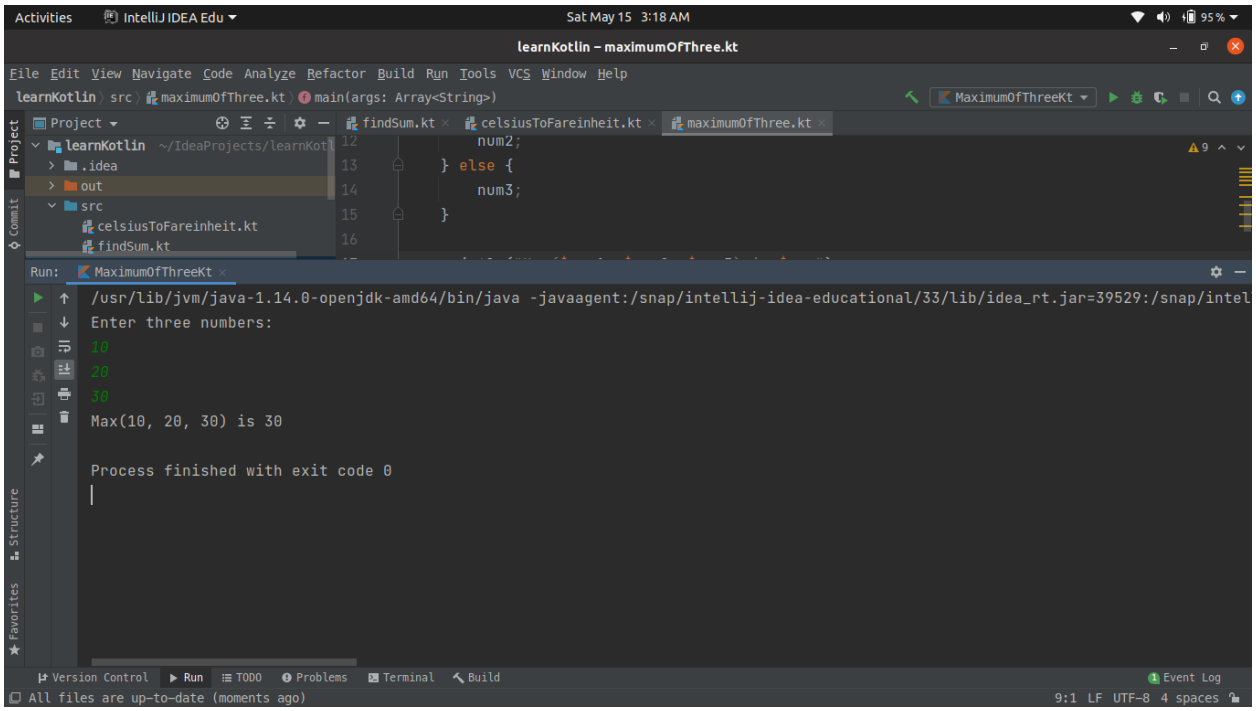
Output:



3. Program: Find maximum of 3 numbers

```
//Program: Find maximum of 3 numbers
fun main(args:Array<String>){
    println("Enter three numbers:");
    val num1:Int = readLine()!!.toInt();
    val num2:Int = readLine()!!.toInt();
    val num3:Int = readLine()!!.toInt();
    val max = if(num1 > num2 && num1 > num3){
        num1;
    } else if(num2 > num1 && num2 > num3){
        num2;
    } else {
        num3;
    }
    println("Max($num1, $num2, $num3) is $max");
}
```

Output:



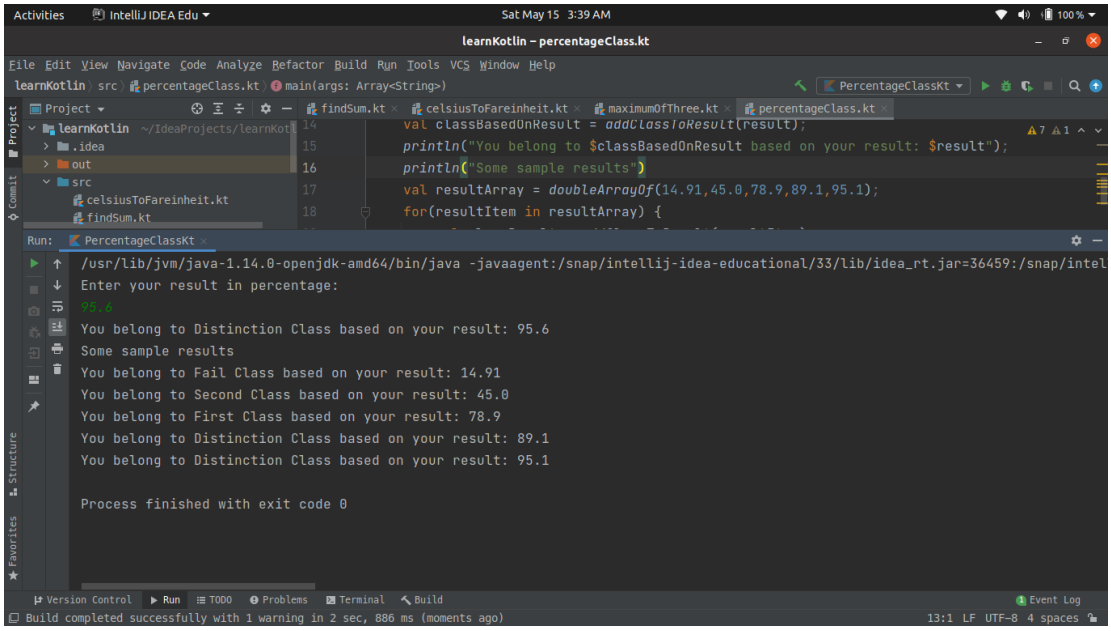
4. Program: Print class based on result percentage

```
//Program: Print class based on result percentage
fun addClassToResult(result:Double):String{
    val classBasedOnResult = when (result) {
        in 85.00..100.00 -> "Distinction Class"
        in 65.00..84.99 -> "First Class"
        in 35.00..64.99 -> "Second Class"
        else -> "Fail Class"
    }
    return classBasedOnResult;
}

fun main(args:Array<String>) {
    println("Enter your result in percentage:")
    val result:Double = readLine()!!.toDouble();
    val classBasedOnResult = addClassToResult(result);
    println("You belong to $classBasedOnResult based on your
result: $result");

    println("Some sample results")
    val resultArray = doubleArrayOf(14.91,45.0,78.9,89.1,95.1);
    for(resultItem in resultArray) {
        val classResult = addClassToResult(resultItem)
        println("You belong to $classResult based on your
result: $resultItem");
    }
}
```

Output:

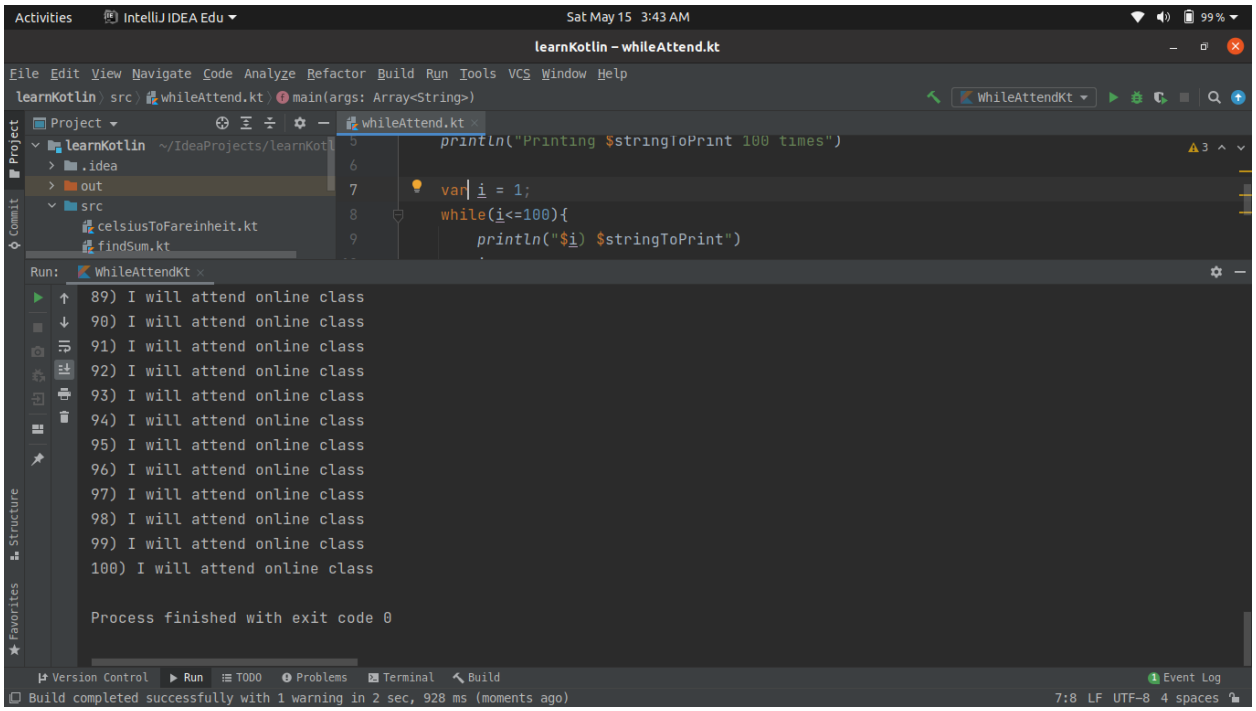

Activities
IntelliJ IDEA Edu
Sat May 15 3:39 AM
learnKotlin – percentageClass.kt
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
learnKotlin src percentageClass.kt main(args: Array<String>)
PercentageClassKt
Project
learnKotlin ~/IdeaProjects/learnKotl
.idea
out
src
celsiusToFareinheit.kt
findSum.kt
findSum.kt
celsiusToFareinheit.kt
maximumOfThree.kt
percentageClass.kt
val classBasedOnResult = addClassToResult(result);
println("You belong to $classBasedOnResult based on your result: $result");
println("Some sample results")
val resultArray = doubleArrayOf(14.91,45.0,78.9,89.1,95.1);
for(resultItem in resultArray) {
Run: PercentageClassKt
/usr/lib/jvm/java-1.14.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-educational/33/lib/idea_rt.jar=36459:/snap/intel
Enter your result in percentage:
95.6
You belong to Distinction Class based on your result: 95.6
Some sample results
You belong to Fail Class based on your result: 14.91
You belong to Second Class based on your result: 45.0
You belong to First Class based on your result: 78.9
You belong to Distinction Class based on your result: 89.1
You belong to Distinction Class based on your result: 95.1
Process finished with exit code 0
Version Control
Run
TODO
Problems
Terminal
Build
Event Log
Build completed successfully with 1 warning in 2 sec, 886 ms (moments ago)
13:1 LF UTF-8 4 spaces

5. Program: Print "I will attend online class" 100 times

```
//Program: Print "I will attend online class" 100 times
fun main(args:Array<String>){
    val stringToPrint = "I will attend online class"
    println("Printing $stringToPrint 100 times")

    var i = 1;
    while(i<=100){
        println("$i) $stringToPrint")
        i++;
    }
}
```

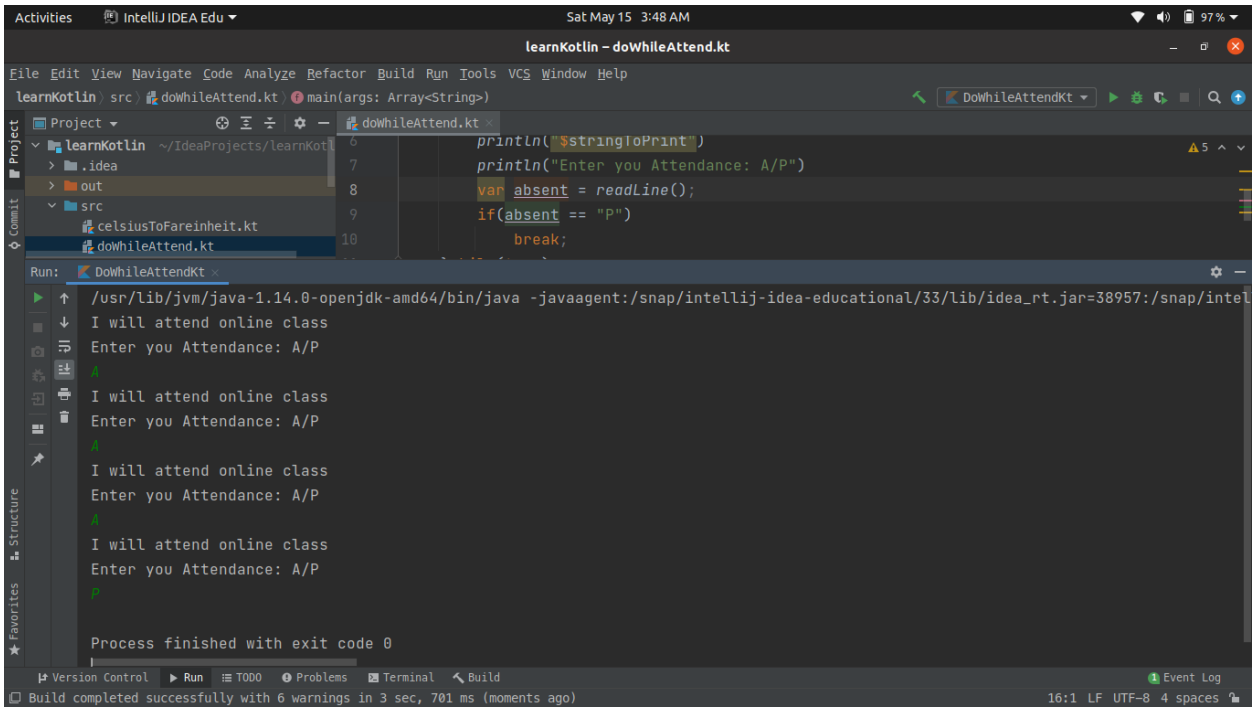
Output:



6. Program: Print "I will attend online class" until you attend

```
//Program: Print "I will attend online class" until you attend
fun main(args:Array<String>){
    val stringToPrint = "I will attend online class"
    do {
        println("$stringToPrint")
        println("Enter you Attendance: A/P")
        var absent = readLine();
        if(absent == "P")
            break;
    }while(true)
}
```

Output:

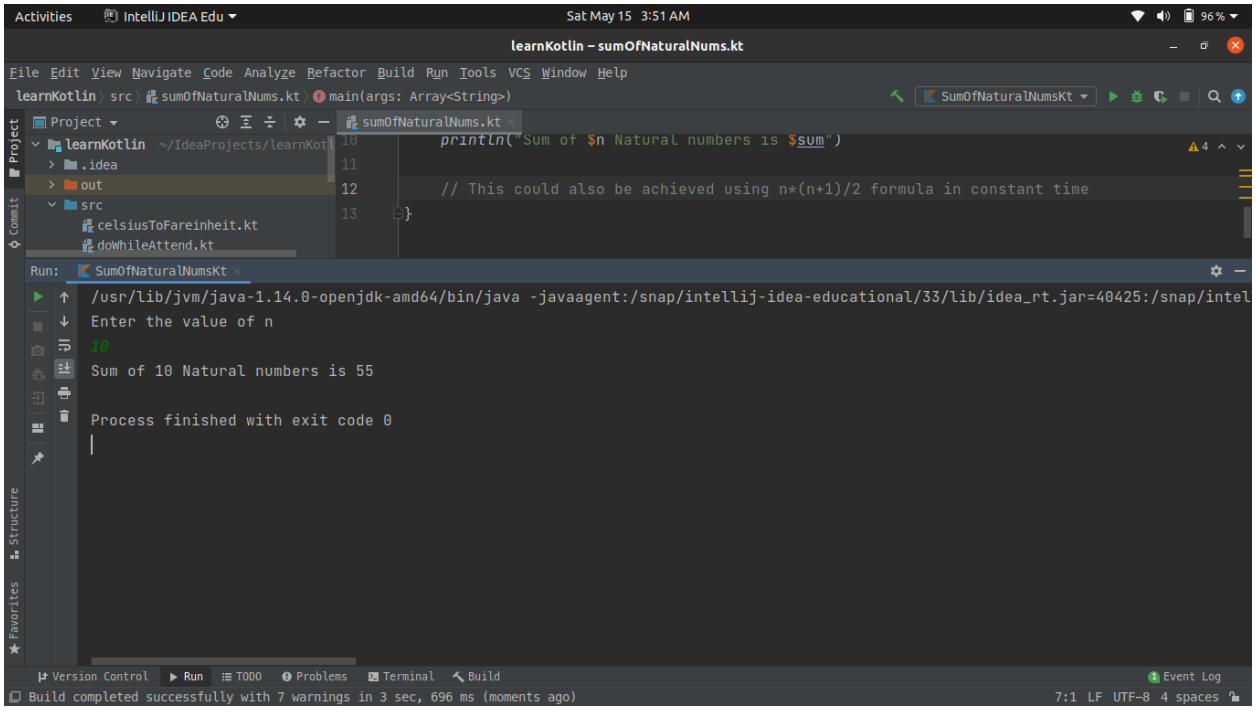


7. Program: Find sum of n natural numbers

```
//Program: Find sum of n natural numbers
fun main(args:Array<String>){
    println("Enter the value of n");
    val n:Int = readLine()!!.toInt()
    var sum = 0;
    for(i in 1..n){
        sum += i;
    }
    println("Sum of $n Natural numbers is $sum")

    // This could also be achieved using n*(n+1)/2 formula in
constant time
}
```

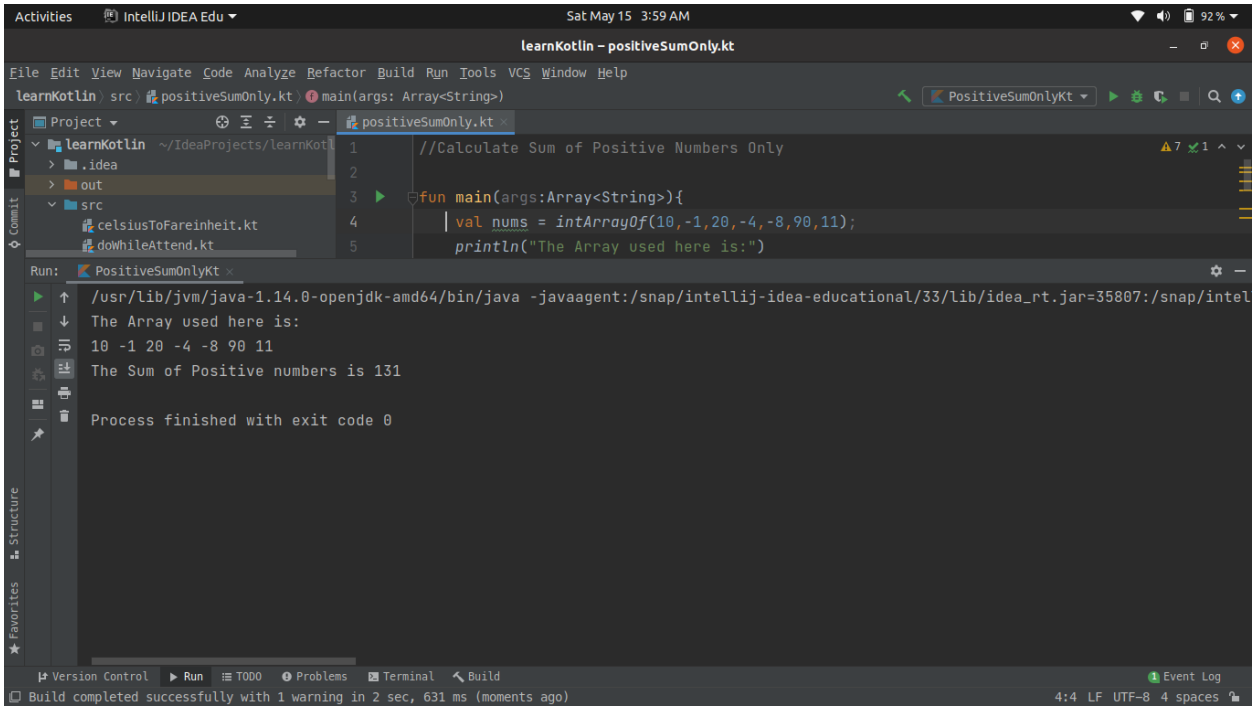
Output:



8. Example: Calculate Sum of Positive Numbers Only

```
//Calculate Sum of Positive Numbers Only
fun main(args:Array<String>){
    val nums = intArrayOf(10,-1,20,-4,-8,90,11);
    println("The Array used here is:")
    var sum:Int = 0;
    for(num in nums) {
        print("$num ");
        if (num <= 0) {
            continue
        }
        sum += num;
    }
    println("\nThe Sum of Positive numbers is $sum");
}
```

Output:



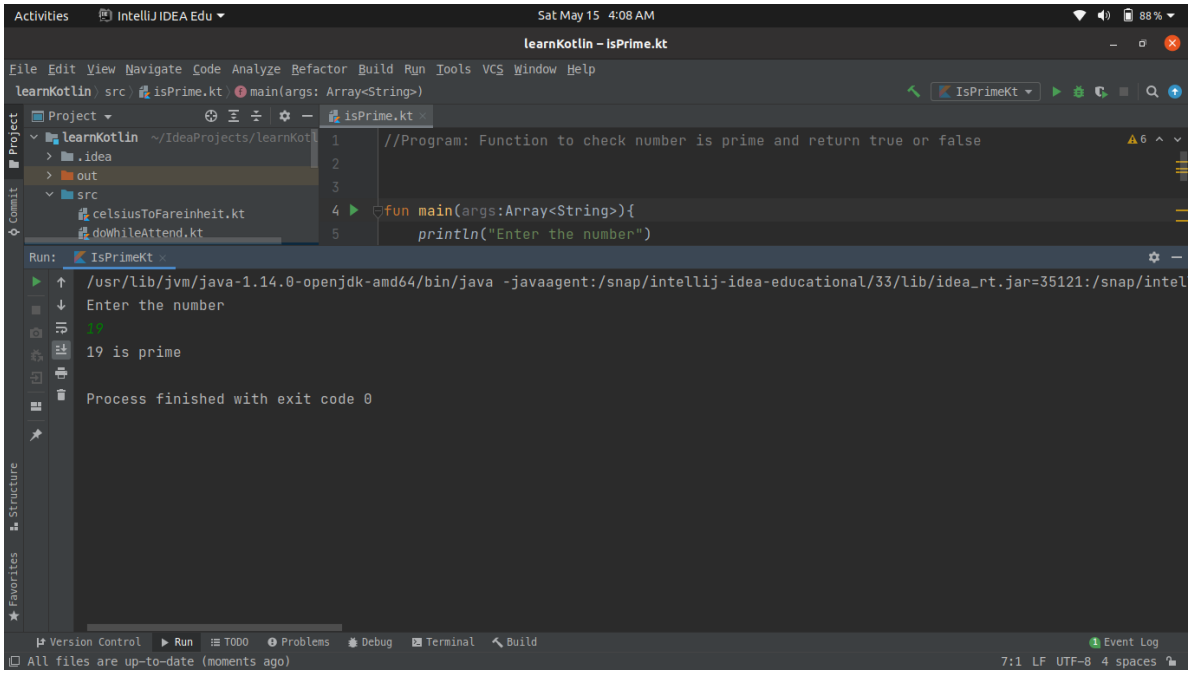
9. Program: Function to check number is prime and return true or false

```
//Program: Function to check number is prime and return true or
false

fun isPrime(num:Int):Boolean{
    for(i in 2..num/2){
        if(num%i == 0){
            return false;
        }
    }
    return true;
}

fun main(args:Array<String>){
    println("Enter the number")
    val num:Int = readLine()!!.toInt();
    var result:Boolean = isPrime(num);
    if(result) {
        println("$num is prime")
    }else {
        println("$num is not prime")
    }
}
```

Output:


Activities
IntelliJ IDEA Edu
Sat May 15 4:08 AM
learnKotlin – isPrime.kt
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
learnKotlin src isPrime.kt main(args: Array<String>)
IsPrimeKt
Project
learnKotlin ~/IdeaProjects/learnKotl
.idea
out
src
celsiusToFareinheit.kt
doWhileAttend.kt
isPrime.kt
1 //Program: Function to check number is prime and return true or false
2
3
4 fun main(args:Array<String>){
5 println("Enter the number")
Run: IsPrimeKt
/usr/lib/jvm/java-1.14.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-educational/33/lib/idea_rt.jar=35121:/snap/intel
Enter the number
19
19 is prime
Process finished with exit code 0
Version Control
Run
TODO
Problems
Debug
Terminal
Build
Event Log
All files are up-to-date (moments ago)
7:1 LF UTF-8 4 spaces

10. Program to demonstrate primary constructors

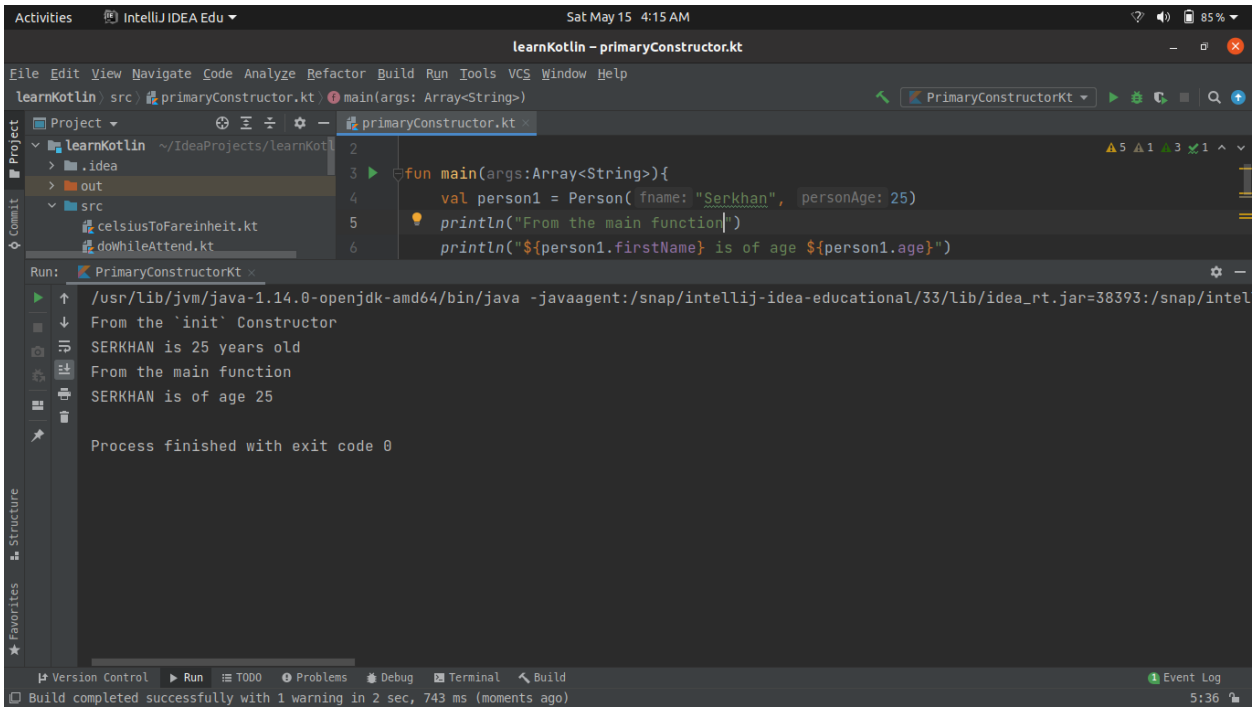
```
//Program to demonstrate primary constructors

fun main(args:Array<String>){
    val person1 = Person("Serkhan", 25)
    println("From the main function")
    println("${person1.firstName} is of age ${person1.age}")
}

class Person(val fname:String, var personAge:Int){
    val firstName:String
    val age:Int

    init {
        firstName = fname.uppercase();
        age = personAge;
        println("From the `init` Constructor")
        println("$firstName is $age years old")
    }
}
```

Output:


Activities
IntelliJ IDEA Edu
Sat May 15 4:15 AM
learnKotlin – primaryConstructor.kt
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
learnKotlin src primaryConstructor.kt main(args: Array<String>)
PrimaryConstructorKt
Project
learnKotlin ~/IdeaProjects/learnKotl
.idea
out
src
celsiusToFareinheit.kt
doWhileAttend.kt
primaryConstructor.kt
fun main(args:Array<String>){
val person1 = Person(fname: "Serkhan", personAge: 25)
println("From the main function")
println("${person1.firstName} is of age ${person1.age}")
Run: PrimaryConstructorKt
/usr/lib/jvm/java-1.14.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-educational/33/lib/idea_rt.jar=38393:/snap/intel
From the `init` Constructor
SERKHAN is 25 years old
From the main function
SERKHAN is of age 25
Process finished with exit code 0
Version Control
Run
TODO
Problems
Debug
Terminal
Build
Event Log
Build completed successfully with 1 warning in 2 sec, 743 ms (moments ago)
5:36

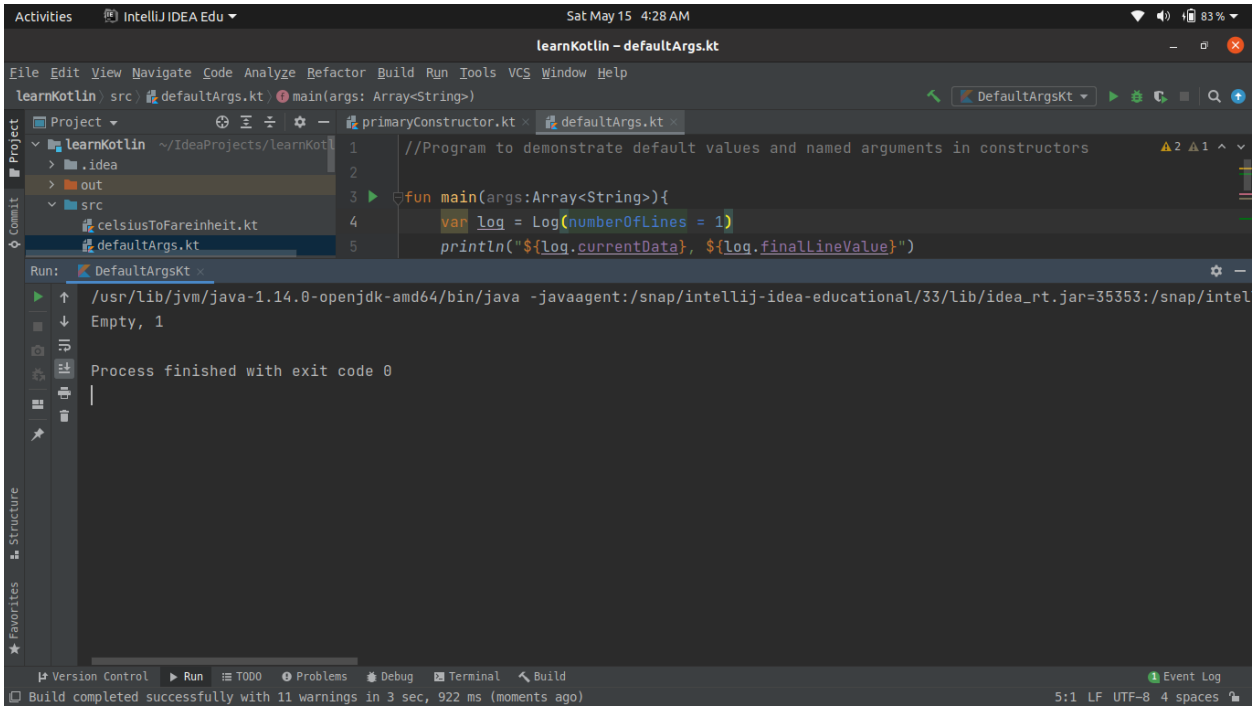
11. Program to demonstrate default values and named arguments in constructors

```
//Program to demonstrate default values and named arguments in
constructors

fun main(args:Array<String>){
    var log = Log(numberOfLines = 1)
    println("${log.currentData}, ${log.finalLineValue}")
}

class Log(data:String="Empty",numberOfLines:Int=0){
    var currentData:String
    var finalLineValue:Int
    init {
        currentData = data
        finalLineValue = numberOfLines
    }
}
```

Output:



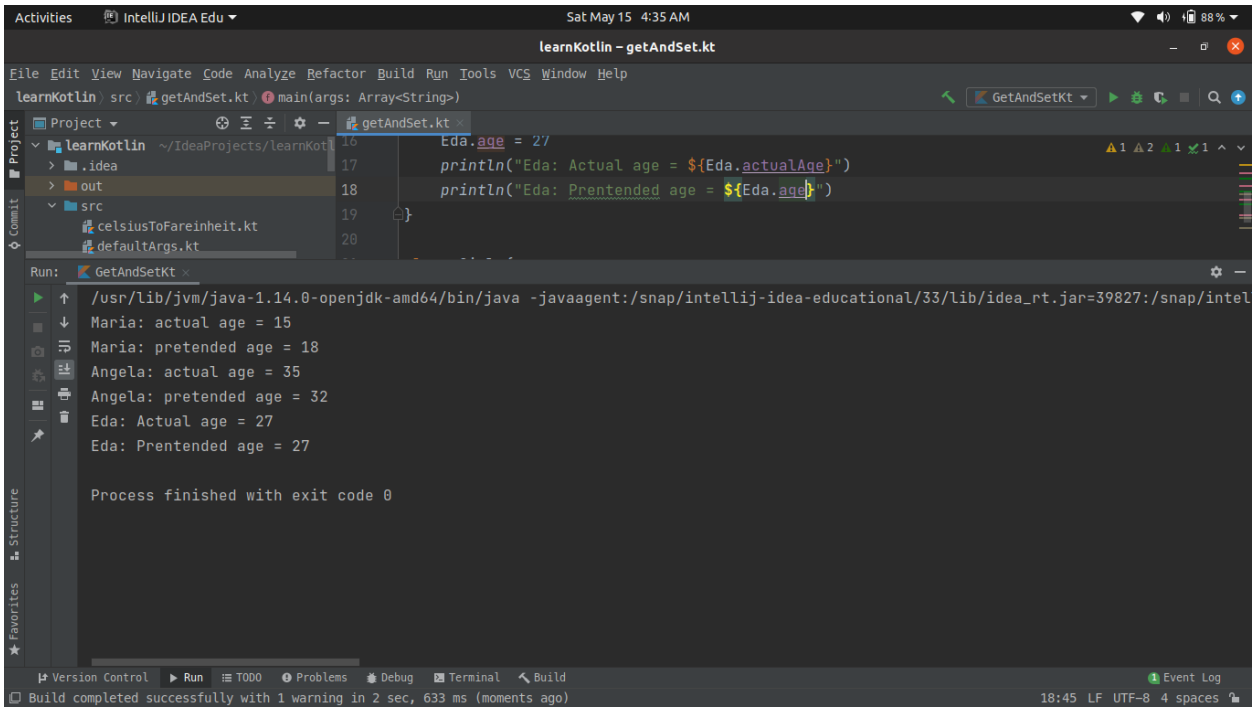
12. Program to demonstrate the use of getters and setters

```
//Program to demonstrate the use of getters and setters

fun main(args: Array<String>) {
    val maria = Girl()
    maria.actualAge = 15
    maria.age = 15
    println("Maria: actual age = ${maria.actualAge}")
    println("Maria: pretended age = ${maria.age}")
    val angela = Girl()
    angela.actualAge = 35
    angela.age = 35
    println("Angela: actual age = ${angela.actualAge}")
    println("Angela: pretended age = ${angela.age}")
    val Eda = Girl()
    Eda.actualAge = 27
    Eda.age = 27
    println("Eda: Actual age = ${Eda.actualAge}")
    println("Eda: Pretended age = ${Eda.age}")
}

class Girl {
    var age: Int = 0
        get() = field
        set(value) {
            field = if (value < 18)
                18
            else if (value >= 18 && value <= 30)
                value
            else
                value - 3
        }
    var actualAge: Int = 0
}
```

Output:


Activities
IntelliJ IDEA Edu
Sat May 15 4:35 AM
learnKotlin – getAndSet.kt
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
learnKotlin src getAndSet.kt main(args: Array<String>)
GetAndSetKt
Project
learnKotlin ~/IdeaProjects/learnKotl
.idea
out
src
celsiusToFareinheit.kt
defaultArgs.kt
getAndSet.kt
Eda.age = 27
println("Eda: Actual age = ${Eda.actualAge}")
println("Eda: Prentended age = ${Eda.age}")
}
Run: GetAndSetKt
/usr/lib/jvm/java-1.14.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-educational/33/lib/idea_rt.jar=39827:/snap/intel
Maria: actual age = 15
Maria: pretended age = 18
Angela: actual age = 35
Angela: pretended age = 32
Eda: Actual age = 27
Eda: Prentended age = 27
Process finished with exit code 0
Version Control
Run
TODO
Problems
Debug
Terminal
Build
Event Log
Build completed successfully with 1 warning in 2 sec, 633 ms (moments ago)
18:45 LF UTF-8 4 spaces

13. Program to illustrate the use of Nested Inner class

```
//Program to illustrate the use of Nested Inner class
class Outer {
    val a = "Outside Nested class."
    inner class Inner {
        fun callMe() = a
    }
}

fun main(args: Array<String>) {
    val outer = Outer()
    println("Using outer object: ${outer.Inner().callMe()}")
    val inner = Outer().Inner()
    println("Using inner object: ${inner.callMe()}")
}
```

Output: