LAPORAN PRAKTIKUM

PEMROGRAMAN MOBILE

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PROGRAM STUDI D-IV REKAYASA PERANGKAT LUNAK

JURUSAN TEKNIK INFORMATIKA

POLITEKNIK NEGERI BENGKALIS

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1. Blog

```kotlin
package Modul1

ROLXML
fun main(args: Array<String>) {
    println("Hello, Ini Program Pertama Saya di Kotlin!")
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.ex
Hello, Ini Program Pertama Saya di Kotlin!

Process finished with exit code 0
```

2. Boolean Var

Bool berarti bernilai benar dan Int 1 karena angka integernya 1

```kotlin
package Modul1

ROLXML
fun main(args: Array<String>) {
    var varBool : Boolean = true
    if(varBool)
        println("varBool bernilai " + varBool)
    var varInt: Int = 1
    if (varInt != 0)  // Memeriksa apakah varInt tidak sama dengan 0
        println("varInt bernilai " + varInt)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.
varBool bernilai true
varInt bernilai 1

Process finished with exit code 0
```

3. Characters

Proses Perubahan karakter menjadi string

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    var charA : Char = 'A'
    //println(charA == 65)
    println(charA.isUpperCase())
    println(charA.isLowerCase())
    println(charA.isDigit())
    println(charA.toLowerCase())
    val strA: String = charA.toString()
    println("Kini charA sudah menjadi String = "+strA)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
true
false
false
a
Kini charA sudah menjadi String = A

Process finished with exit code 0
```

4. Fungsi Anggota pada string

```kotlin
fun main(args: Array<String>) {
    val s = "Rhinopotamus"
    println(s.startsWith( prefix: "rhin"))
    println(s.endsWith( suffix: "tamus"))
    println(s.contains( other: "pot"))
    println(s.contains( other: "lol"))
    //toUpperCase() and toLowerCase()
    var config = "Fullscreen shaDows autosave"
    config = config.toLowerCase()
    println("Will the game run in fullscreen?")
    println(config.contains( other: "fullscreen"))
    println("Will shadows be turned on?")
    println(config.contains( other: "shadows"))
    println("Will sound be turned off?")
    println(config.contains( other: "nosound"))
    println("Would the player like to use autosave?")
    println(config.contains( other: "autosave"))
    //replace()
    var strJava = "Java is the best!"
    strJava = strJava.replace( oldValue: "Java",  newValue: "Kotlin")
    println(s)
    println("$strJava is ${strJava.length} characters long.")
//substring()
    println("I would not banish all of these Internets.".substring(2, 7))
    //compareTo()
    println("alpha".compareTo("bravo"))
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-
false
true
true
false
Will the game run in fullscreen?
true
Will shadows be turned on?
true
Will sound be turned off?
false
Would the player like to use autosave?
true
Rhinopotamus
Kotlin is the best! is 19 characters long.
would
-1

Process finished with exit code 0
```

5. Int (ArrayOfCharachters)

Penggabungan karakter dan huruf

```
package Modul1

ROLXML
fun main(args: Array<String>) {
    val s = "abc" + 1
    println(s + "def")
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
abc1def

Process finished with exit code 0
```

6. Konversi Eksplisit

```
package Modul1

ROLXML
fun main(args: Array<String>) {
    //ASCII value
    var c: Char // character
    var i: Int // ordinal (ASCII) value of the character
    // conversion from text to ASCII value
    c = 'a'
    i = c.toInt()
    println("The character $c was converted to its ASCII value of $i")
    // conversion from an ASCII value to text
    i = 98
    c = i.toChar()
    println("The ASCII value of $i was converted to its textual value of $c")
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-javaagent:C:\Program
The character a was converted to its ASCII value of 97
The ASCII value of 98 was converted to its textual value of b

Process finished with exit code 0
```

7. Konversi Ekspilit

```
package Modul1

ROLXML
fun main(args: Array<String>) {
    val valInt: Int = 1
    val valSum: Long = 3L + valInt //konversi implisit
    println("Konversi variabel valInt secara implisit : " + valSum)
    val valLong: Long = valInt.toLong() // konversi eksplisit
    println("Konversi variabel valInt secara eksplisit : " + valLong)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-j
Konversi variabel valInt secara implisit : 4
Konversi variabel valInt secara eksplisit : 1

Process finished with exit code 0
```

8. Literal

```
ROLXML
fun main(args: Array<String>) {
    var intLiteral = 5
    var doubleLiteral = .02
    var stringLiteral = "Hello"
    var charLiteral = '1'
    var boolLiteral = true
    println("intLiteral = " + intLiteral)
    println("doubleLiteral = " + doubleLiteral)
    println("stringLiteral = " + stringLiteral)
    println("charLiteral = " + charLiteral)
    println("boolLiteral = " + boolLiteral)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
intLiteral = 5
doubleLiteral = 0.02
stringLiteral = Hello
charLiteral = 1
boolLiteral = true

Process finished with exit code 0
```

9. Literal Konstan

```
ROLXML
fun main(args: Array<String>) {
    val floatLiteral : Float = 178.95F //Literal Float
    println("Contoh Literal Float : " + floatLiteral)
    val oneBillion: Long = 1000000000L //Literal Long
    println("Contoh Literal Long : " + oneBillion)
    val valHeksa = 0x0F //Literal heksadesimal diawali dengan 0x
    println("Contoh Literal Heksadesimal : " + valHeksa)
    val valBinary = 0b00001011 //Literal binary diawali dengan 0b
    println("Contoh Literal Binary : " + valBinary)
    val notasiKonvensional = 123.5e10
    println("Contoh Literal Konvensional Floating Point Number : " + notasiKonvensional)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-javaagent:C:\Pro
Contoh Literal Float : 178.95
Contoh Literal Long : 1000000000
Contoh Literal Heksadesimal : 15
Contoh Literal Binary : 11
Contoh Literal Konvensional Floating Point Number : 1.235E12

Process finished with exit code 0
```

10. Menghapus Spasi Raw String

```
package Modul1

ROLXML
fun main(args: Array<String>) {
    var text = """
  |Tell me and I forget.
  |Teach me and I remember.
  |Involve me and I learn.
  |(Benjamin Franklin)
  """.trimMargin()
    println(text)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.
Tell me and I forget.
Teach me and I remember.
Involve me and I learn.
(Benjamin Franklin)

Process finished with exit code 0
```

11. Merubah Nilai String yang di kembalikan oleh Readline

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    //Doubler program parsing
    println("Enter a number and I'll double it: ")
    val input = readLine()!!
    var a = input.toInt() // eventually Double
    a = a * 2
    println(a)
    println("Enter a number, and I'll square it:")
    val number = readLine()!!.toInt()
    val square = number * number
    println("Result: " + square)
}
```

Output

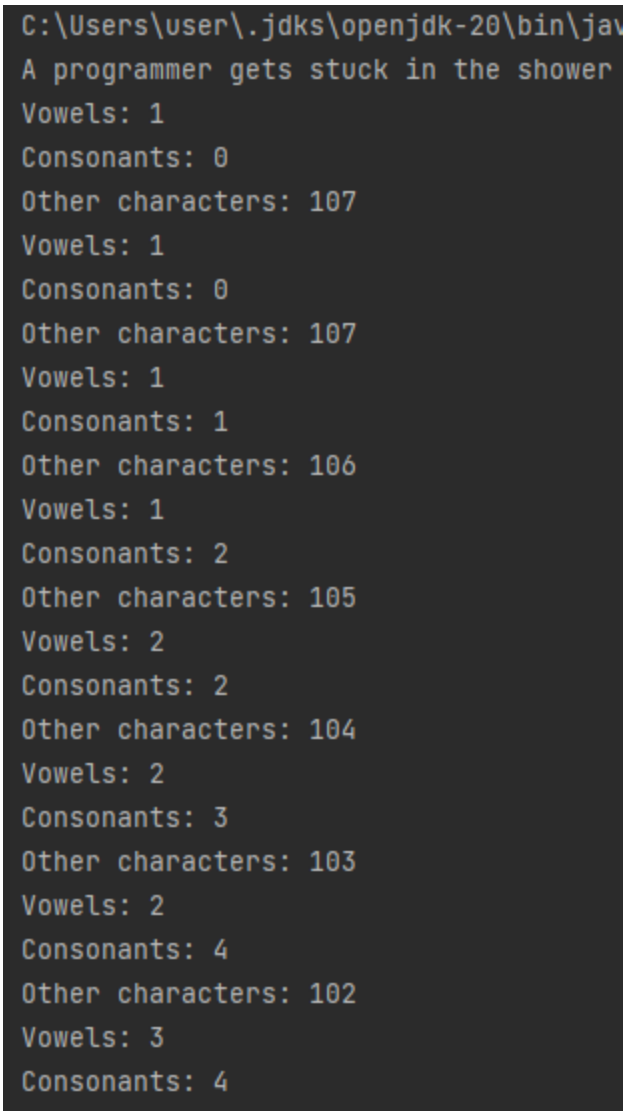
```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
Enter a number and I'll double it:
```

12. Penerapan String

ROLXML

```
fun main(args: Array<String>) {
    // Character occurrence in a sentence analysis
    // the string that we want to analyze
    var s = "A programmer gets stuck in the shower because the instructions on the
    println(s)
    s = s.toLowerCase()
    // counters initialization
    var vowelCount = 0
    var consonantCount = 0
    // definition of character groups
    val vowels = "aeiouy"
    val consonants = "bcdfghjklmnpqrstvwxz"
    // main loop
    for (c in s) {
        if (vowels.contains(c)) {
            vowelCount++
        } else if (consonants.contains(c)) {
            consonantCount++
        }
        println("Vowels: $vowelCount")
        println("Consonants: $consonantCount")
        println("Other characters: ${s.length - (vowelCount + consonantCount)}")
    }
}
```

Output



13. Perintah Masuk

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    //Parrot program
    println("Hi I'm Lora, the virtual parrot, and i love to repeat!");
    println("Type something in: ");
    var input: String
    input = readLine()!!
    var output: String
    output = input + ", " + input + "!"
    println(output)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-javaagent:C
Hi I'm Lora, the virtual parrot, and i love to repeat!
Type something in:
1
1, 1!

Process finished with exit code 0
```

14. Program Caesar Chiper

```
ROLXML
fun main(args: Array<String>) {
    //The Caesar cipher
    // variable initialization
    val s = "blackholesarewheregoddividedbyzero"
    println("Original message: $s")
    var message = ""
    var shift = 1
    // loop iterating over characters
    for (c in s) {
        var i = c.toInt()
        i += shift
        if (i > 'z'.toInt()) {
            i -= 26
        }
        val char = i.toChar()
        message += char
    }
    // printing
    println("Encrypted message: $message")
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-javaagent:C:
Original message: blackholesarewheregoddividedbyzero
Encrypted message: cmbdlipmftbsfxifsfhpeejwjefeczafsp

Process finished with exit code 0
```

15. Var

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    var varVariabel: Int
    varVariabel = 56 //assigning first value to varVariabel
    println("Pemberian nilai pertama pada varVariabel = "+varVariabel)
    varVariabel = 78 //assigning second value to varVariabel
    println("Pemberian nilai kedua pada varVariabel = "+varVariabel)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-ja
Pemberian nilai pertama pada varVariabel = 56
Pemberian nilai kedua pada varVariabel = 78

Process finished with exit code 0
```

16. Val

```
 ROLXML
fun main(args: Array<String>) {
    var varVariabel: Int
    varVariabel = 56 //assigning first value to varVariabel
    println("Pemberian nilai pertama pada varVariabel = "+varVariabel)
    varVariabel = 78 //assigning second value to varVariabel
    println("Pemberian nilai kedua pada varVariabel = "+varVariabel)
    var phi = 3.14
    phi = 2.5
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-
Pemberian nilai pertama pada varVariabel = 56
Pemberian nilai kedua pada varVariabel = 78

Process finished with exit code 0
```

17. Under Score Literal

```
package Modul1

ROLXML
fun main(args: Array<String>) {
    val oneMillion = 1_000_000
    val creditCardNumber = 1234_5678_9012_3456L
    val socialSecurityNumber = 999_99_9999L
    val hexBytes = 0xFF_EC_DE_5E
    val bytes = 0b11010010_01101001_10010100_10010010
    println("oneMillion = " + oneMillion)
    println("creditCardNumber = " + creditCardNumber)
    println("socialSecurityNumber = " + socialSecurityNumber)
    println("hexBytes = " + hexBytes)
    println("bytes = " + bytes)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
oneMillion = 1000000
creditCardNumber = 1234567890123456
socialSecurityNumber = 999999999
hexBytes = 4293713502
bytes = 3530134674

Process finished with exit code 0
```

18. Tipe Data

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    var dynamicVar = 2
    println("Contoh dynamic variabel = " + dynamicVar)

var staticVar: Char = 'A'
println("Contoh static variabel = " + staticVar)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
Contoh dynamic variabel = 2
Contoh static variabel = A

Process finished with exit code 0
```

19. Tipe Data Bulat

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    val minByte: Byte = -128
    val maxByte: Byte = 127 // 8bit
    val minShort: Short = -32768
    val maxShort: Short = 32767 // 16bit
    val minInt: Int = -2147483648
    val maxInt: Int = 2147483647 // 32bit
    val minLong: Long = -9223372036854775807
    val maxLong: Long = 9223372036854775807 // 64bit
    println("minByte:" + minByte)
    println("maxByte:" + maxByte)
    println("minShort:" + minShort)
    println("maxShort:" + maxShort)
    println("minInt:" + minInt)
    println("maxInt:" + maxInt)
    println("minLong:" + minLong)
    println("maxLong:" + maxLong)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
minByte:-128
maxByte:127
minShort:-32768
maxShort:32767
minInt:-2147483648
maxInt:2147483647
minLong:-9223372036854775807
maxLong:9223372036854775807

Process finished with exit code 0
```

20. Tipe Data Decimal

```kotlin
package Modul1

 ROLXML
fun main(args: Array<String>) {
    val maxFloat: Float = 9.123456789f
    val maxDouble: Double = 9.123456789
    println("maxFloat:" + maxFloat)
    println("maxDouble:" + maxDouble)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java
maxFloat:9.123457
maxDouble:9.123456789

Process finished with exit code 0
```

21. String Template

```kotlin
package Modul1

 ROLXML
fun main(args: Array<String>) {
    val a = 7
    val b = 8
    val c = a + b
    val s = "When we add $a and $b, we get $c"
    println(s)
    println("When we add $a and $b, we get ${a + b}")
    val price = """
 ${'$'}9.99
 """
    println(price)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.
When we add 7 and 8, we get 15
When we add 7 and 8, we get 15

 $9.99


Process finished with exit code 0
```

22. String (ArrayOfCharachters)

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    val myName: String = "Syahrul Ridwan"
    for(chr in myName){
        print(chr)
    }
    print('\n')
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.
Syahrul Ridwan

Process finished with exit code 0
```

23. Representasi

```
package Modul1                                                    ⚠6 ⚠1

 ROLXML
fun main(args: Array<String>) {
    val a: Int = 10000
    println("a apakah identik dengan a atau a === a : " + (a === a))
    val boxedA: Int? = a
    val anotherBoxedA: Int? = a
    println("boxedA apakah identik dengan anotherBoxedA atau boxedA === anotherBoxedA : " + (boxedA ===
            anotherBoxedA))
    println("boxedA apakah memiliki nilai yang sama dengan anotherBoxedA atau boxedA == anotherBoxedA : "
            + (boxedA == anotherBoxedA))
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA
a apakah identik dengan a atau a === a : true
boxedA apakah identik dengan anotherBoxedA atau boxedA === anotherBoxedA : false
boxedA apakah memiliki nilai yang sama dengan anotherBoxedA atau boxedA == anotherBoxedA : true

Process finished with exit code 0
```

24. Raw String

```
package Modul1

 ROLXML
fun main(args: Array<String>) {
    var text = """
 for (c in "foo")
 print(c)
 """
    println(text)
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe

 for (c in "foo")
 print(c)


Process finished with exit code 0
```

25. Program Sandi Morse

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe "-javaagent:C:
The original message: .. -.-. - ... --- -.-. .. .- .-..
The decoded message: ictsocial

Process finished with exit code 0
```

26. Program Kalkulator Sederhana

```kotlin
package Modul1

 ROLXML
fun main(args: Array<String>) {
    //Simple calculator
    println("Welcome to calculator")
    println("Enter the first number:")
    val a = readLine()!!.toDouble()
    println("Enter the second number:")
    val b = readLine()!!.toDouble()
    val sum = a + b
    val difference = a - b
    val product = a * b
    val quotient = a / b
    println("Sum: ${sum}")
    println("Difference: ${difference}")
    println("Product: ${product}")
    println("Quotient: ${quotient}")
    println("Thank you for using calculator.")
}
```

Output

```
C:\Users\user\.jdks\openjdk-20\bin\java.exe
Welcome to calculator
Enter the first number:
5
Enter the second number:
5
Sum: 10.0
Difference: 0.0
Product: 25.0
Quotient: 1.0
Thank you for using calculator.

Process finished with exit code 0
```