

LAPORAN PRAKTIKUM ALGORITMA

DAN PEMROGRAMAN 1

MODUL No.12

WHILE-LOOP



Disusun oleh:

Jimmy Harlindo

109082500097

S1IF-13-02

Asisten Praktikum

Adithana dharma putra

Alfin Ilham Berlianto

PROGRAM STUDI S1 INFORMATIKA

FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

2025

LATIHAN KELAS – GUIDED

1. Guided 1

Source Code

```
package main

import "fmt"

func main() {
    var n int

    fmt.Print("masukan bilangan:")
    fmt.Scan(&n)

    if n == 0 {
        fmt.Println("1")
        return
    }
    i := n
    for i > 0 {
        fmt.Print(i)
        if i > 1 {
            fmt.Print("x")
        }
        i--
    }
    fmt.Println()
}
```

Screenshot program

The screenshot shows a terminal window with a code editor overlay. The code editor displays a Go program named 'guided.go' with the following content:

```
no 1 guided.go
1 package main
2 import "fmt"
3
4 func main(){
5     var n int
6
7     fmt.Print("masukan bilangan:")
8     fmt.Scan(&n)
9
10    if n == 0{
11        fmt.Println("1")
12        return
13    }
14    i := n
15    for i > 0 {
16        fmt.Print(i)
17        if i > 1 {
18            fmt.Print("x")
```

The terminal window shows the output of running the program:

```
NAMA: JIMMY HARLINDO |
NIM :109082500097

Ln 1, Col 21 | 39 character | Plain t | 100% | Wind | UTF-8
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\no 1 guided.go"
masukan bilangan:0
1
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\no 1 guided.go"
masukan bilangan:5
5x4x3x2x1
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\no 1 guided.go"
masukan bilangan:10
10x9x8x7x6x5x4x3x2x1
```

Deskripsi program

Kode ini berfungsi untuk meminta memasukkan sebuah bilangan, kemudian mencetak deret angka dari bilangan tersebut turun hingga angka 1 dengan format dipisahkan tanda “x”. Jika memasukkan angka 0, program langsung menampilkan “1” dan berhenti. Untuk input lebih dari 0, program memakai perulangan menurun yang mencetak setiap angka, dan jika angka tersebut belum mencapai 1, program menambahkan tanda “x” di belakangnya. Dengan begitu, jika memasukkan 5, hasilnya menjadi “5x4x3x2x1”, dan jika memasukkan 10, hasilnya “10x9x8x7x6x5x4x3x2x1”.

2. Guided 2

Source Code

```
package main

import "fmt"

func main() {
    const tokenBenar = "12345abcde"
    var input string

    for {
        fmt.Print("Masukkan token: ")
        fmt.Scanln(&input)

        if input == tokenBenar {
            fmt.Println("Selamat Anda berhasil login")
            break
        }
    }
}
```

Screenshoot program

The screenshot shows a code editor interface with a dark theme. On the left, the code for a Go program named 'guided.go' is displayed. The code defines a main function that prints a welcome message, reads a token from the user, and checks if it matches a predefined token ('12345abcde'). If they match, it prints a success message and breaks out of the loop. The code editor has tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS, with the TERMINAL tab currently selected.

```
go run guided.go
1 package main
2
3 import "fmt"
4
5 func main(){
6     const tokenBenar = "12345abcde"
7     var input string
8
9     for {
10         fmt.Print("Masukkan token: ")
11         fmt.Scanln(&input)
12
13         if input == tokenBenar {
14             fmt.Println("Selamat Anda berhasil login")
15             break
16         }
17     }
18 }
```

The terminal window shows the execution of the program:

```
Masukkan token: 12345abcde
Selamat Anda berhasil login
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\guided.go"
Masukkan token: 12345abcde
Selamat Anda berhasil login
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12>
```

Deskripsi program

Program ini menyimpan token yang benar dalam variabel tokenBenar, kemudian memakai perulangan for tanpa batas untuk meminta input token. Jika token yang dimasukkan cocok, program menampilkan pesan berhasil dan menghentikan loop dengan break.

Guided 3
Source Code

```
package main

import "fmt"

func main() {
    var n int

    fmt.Print("Masukkan jumlah N: ")
    fmt.Scan(&n)

    a, b := 0, 1
    i := 0
    for i < n {
        fmt.Print(a, " ")
        a, b = b, a+b
        i++
    }
}
```

Screenshot program

The screenshot shows a code editor interface with a dark theme. On the left, a file named 'guided.go' is displayed with the following Go code:

```
-go run 3 guided.go
1 package main
2
3 import "fmt"
4
5 func main() {
6     var n int
7
8     fmt.Print("Masukkan jumlah N: ")
9     fmt.Scan(&n)
10
11    a, b := 0, 1
12    i := 0
13    for i < n {
14        fmt.Print(a, " ")
15        a, b = b, a+b
16        i++
17    }
18 }
19
```

To the right of the code editor is a terminal window showing the execution of the program. The terminal output is as follows:

```
praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\no 3 guided.go"
Masukkan jumlah N: 5
0 1 1 2 3
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\no 3 guided.go"
Masukkan jumlah N: 2
0 1
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12\no 3 guided.go"
Masukkan jumlah N: 10
0 1 1 2 3 5 8 13 21 34
PS C:\Users\Jimmy Harlindo\praktikum\Latihan semester 1\latihan modul 12>
```

A floating terminal window titled 'NA' displays the program's output: 'NAMA:JIMMY HARLINDO | NIM :109082500097'. The status bar at the bottom of the terminal window shows 'Ln 1, Col 21 | 39 characters | Plain text | 100% | Wind | UTF-8'.

Deskripsi program

Kode ini meminta pengguna memasukkan nilai N, lalu menggunakan sebuah perulangan while (for $i < n$) untuk mencetak N bilangan pertama deret Fibonacci. Dua nilai awal Fibonacci diset ke 0 dan 1, kemudian setiap iterasi mencetak nilai pertama (a) dan memperbarui nilainya dengan rumus $a, b = b, a+b$ sampai jumlah bilangan yang dicetak mencapai N.

TUGAS

1. Tugas 1

Source code

```
package main

import "fmt"

func main() {
    const userBenar = "Admin"
    const passBenar = "Admin"

    var user, pass string
    gagal := 0

    for {
        fmt.Print("Masukkan username: ")
        fmt.Scan(&user)
        fmt.Print("Masukkan password: ")
        fmt.Scan(&pass)

        if user == userBenar && pass == passBenar {
            break
        }

        gagal++
        fmt.Println("Username atau password salah, coba lagi.")
    }

    fmt.Printf("%d percobaan gagal login\n", gagal)
}
```

Screenshot program

The screenshot shows a terminal window with a code editor overlay. The code editor displays a Go program named 'no 1.go' with the following content:

```
-GO no 1.go
1 package main
2
3 import "fmt"
4
5 func main() {
6     const userBenar = "Admin"
7     const passBenar = "Admin"
8
9     var user, pass string
10    gagal := 0
11
12    for {
13        fmt.Print("Masukkan username: ")
14        fmt.Scan(&user)
15        fmt.Print("Masukkan password: ")
16        fmt.Scan(&pass)
17
18        if user == userBenar && pass == passBenar {
19            break
20        }
21 }
```

The terminal window shows the execution of the program and its interaction with the user:

```
PS C:\Users\Jimmy Harlindo\praktikum\tugas modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\tugas modul 12\no 1.go"
Masukkan username: user 123
Masukkan password: Username atau password salah, coba lagi.
Masukkan username: user admin
Masukkan password: Username atau password salah, coba lagi.
Masukkan username: admin admin
Masukkan password: Username atau password salah, coba lagi.
Masukkan username: admin admin 123
Masukkan password: Username atau password salah, coba lagi.
Masukkan username: Masukkan password: admin admin
Username atau password salah, coba lagi.
```

Deskripsi program

Program ini meminta username dan password berulang-ulang menggunakan while loop(for{}). Jika input salah, program menambah jumlah percobaan gagal. Jika username dan password benar (Admin, Admin), loop berhenti dan program menampilkan berapa kali login gagal sebelumnya.

2. Tugas 2

Source code

```
package main

import "fmt"

func main() {
    var n int
    fmt.Print("Masukkan bilangan positif: ")
    fmt.Scan(&n)

    for n > 0 {
        digit := n % 10
        fmt.Println(digit)
        n = n / 10
    }
}
```

Screenshot program

The screenshot shows a terminal window with a code editor interface. The code in the editor is:

```
-go run no 2.go
1 package main
2
3 import "fmt"
4
5
6 func main() {
7     var n int
8     fmt.Println("Masukkan bilangan positif: ")
9     fmt.Scan(&n)
10
11    for n > 0 {
12        digit := n % 10
13        fmt.Println(digit)
14        n = n / 10
15    }
16
17 }
```

To the right of the code editor is a terminal window showing the output of the program. The terminal window has a title bar with icons and a menu bar with options like File, Edit, View, and Help. The main area of the terminal shows the following text:

```
NAMA: JIMMY HARLINDO
NIM :109082500097
```

At the bottom of the terminal window, there is status information: Ln 1, Col 21 | 39 characters | Plain text | 100% | Wind | UTF-8.

Below the terminal window, the VS Code interface is visible with tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (which is currently selected), PORTS, and Code. The terminal tab shows command-line history:

```
PS C:\Users\Jimmy Harlindo\praktikum\tugas modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\tugas modul 12\no 2.go"
Masukkan bilangan positif: 2
2
PS C:\Users\Jimmy Harlindo\praktikum\tugas modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\tugas modul 12\no 2.go"
Masukkan bilangan positif: 2544
4
4
5
2
PS C:\Users\Jimmy Harlindo\praktikum\tugas modul 12> go run "c:\Users\Jimmy Harlindo\praktikum\tugas modul 12\no 2.go"
```

Deskripsi program

Program ini dibuat untuk membaca sebuah bilangan bulat positif, kemudian menampilkan setiap digit yang ada di dalam bilangan tersebut mulai dari digit paling kanan hingga digit paling kiri. Proses digit dilakukan menggunakan while-loop.

3. Tugas 3

Source code

```
package main

import "fmt"

func main() {
    var x, y int
    fmt.Print("Masukkan x dan y: ")
    fmt.Scan(&x, &y)

    hasil := 0
    for x >= y {
        x = x - y
        hasil++
    }

    fmt.Println(hasil)
}
```

Screenshoot program

The screenshot shows a Go development environment with the following components:

- Code Editor:** On the left, the file `no 3.go` is open, displaying the provided Go code.
- Terminal:** On the right, a terminal window shows the execution of the code. It starts with the command `go run "c:\Users\Jimmy Harlindo\praktikum\tugas modul 12\no 3.go"`. It then prompts for input: "Masukkan x dan y: 5 2". The output shows the result: "2".
- Output Window:** A modal window titled "Output" displays the results of the program execution:

```
NAMA:JIMMY HARLINDO
NIM :109082500097
```
- Bottom Bar:** The bottom bar includes tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, PORTS, and Code, along with other standard interface elements.

Deskripsi program

Program ini membaca dua bilangan positif, yaitu x dan y , lalu menghitung hasil pembagian bulat dari $x \div y$ tanpa menggunakan operator pembagian. Perhitungan dilakukan dengan cara mengurangi nilai x secara berulang-ulang dengan y menggunakan while loop