

**LAPORAN PRAKTIKUM ALGORITMA
DAN PEMROGRAMAN 1**

MODUL 12

WHILE-LOOP



Disusun oleh:

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Asisten Praktikum

Adithana dharma putra

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**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, j int
    fmt.Scan(&n)
    j = n
    for j > 1 {
        fmt.Println(j, " x ")
        j = j - 1
    }
    fmt.Println(1)
}
```

Screenshot program

The screenshot shows a Windows desktop environment with a Microsoft Visual Studio Code (VS Code) window open. The VS Code interface includes:

- EXPLORER** sidebar: Shows a folder named "TUGAS" containing files: ".vscode", "cons1", "cons2", "cons3", "cons4", "cons5", "cons6", "cons7", "cons8", and "c9_1.go".
- Editor Area**: Displays the Go code for "c9_1.go".
- Terminal**: Shows command-line output from running the code.
- Output**: Shows the results of the execution.

The terminal output is as follows:

```
PS C:\tugas> go run "c:\tugas\c9_1.go"
0
1
5
5 x 4 x 3 x 2 x 1
PS C:\tugas> go run "c:\tugas\c9_1.go"
5
10
10 x 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1
PS C:\tugas>
```

A separate terminal window titled "Nama Fari" is also visible, showing:

```
Nama : Farrasya Lazuardi
NIM : 109082500040
```

The system tray at the bottom right shows the date and time as 25/12/2025 and 15:32.

Deskripsi program

Program ini menampilkan deret angka menurun dari nilai input yang kita masukkan. Setelah kita masukkan angka n , program menyimpan nilai tersebut ke variabel j . Selanjutnya dilakukan perulangan menggunakan syarat $j > 1$, sehingga angka akan dicetak mulai dari n hingga angka 2. Setiap angka dicetak disertai tanda x di belakangnya. Setelah perulangan selesai, program mencetak angka terakhir yaitu **1** sebagai penutup deret.

2. Guided 2

Source Code

```
package main

import "fmt"

func main() {
    var token string
    fmt.Scan(&token)
    for token != "12345abcde" {
        fmt.Scan(&token)
    }
    fmt.Println("Selamat Anda berhasil login")
}
```

Screenshot program

The screenshot shows a Microsoft Windows desktop environment. In the foreground, a terminal window titled "Nama Fari" is open, displaying the command "go run "c:\tugas\cons9\c9_2.go"" followed by the output "12345abcde", "123", and "Selamat Anda berhasil login". Below the terminal is a standard Windows taskbar with various icons. In the background, a Microsoft Visual Studio Code (VS Code) instance is running. The VS Code interface includes:

- EXPLORER** sidebar showing files like ".vscode", "cons1", "cons2", etc., and a folder "cons9" containing "c9_1.go" through "c9_8.go".
- CODE EDITOR** pane showing a Go file named "c9_2.go" with the following code:

```
1 package main
2 import "fmt"
3
4 func main() {
5     var token string
6     fmt.Scan(&token)
7     for token != "12345ABCDE" {
8         fmt.Scan(&token)
9     }
10    fmt.Println("Selamat Anda berhasil login")
11 }
```

- TERMINAL** tab showing the command "PS C:\tugas> go run "c:\tugas\cons9\c9_2.go"" and its output.
- STATUS BAR** at the bottom showing "Ln 3, Col 1 | 45 character| Plain t | 100% | Wind | UTF-8".

Deskripsi program

Program ini sebenarnya cuma ngecek apakah kita masukin token yang benar atau belum. Pertama kita disuruh ngisi sebuah kode. Kalau kode yang kita masukin masih salah dan bukan 12345ABCDE, program bakal nyuruh kita buat ngisi ulang terus-menerus. Jadi selama kita ngisi kode yang salah, program nggak bakal lanjut. Begitu kita akhirnya masukin token yang benar, barulah program nge-print tulisan "Selamat Anda berhasil login" sebagai tanda kalau kita sudah berhasil masuk.

3. Guided 3

Source Code

```
package main

import "fmt"

func main() {
    var N, s1, s2, j, temp int
    fmt.Scan(&N)
    s1 = 0
    s2 = 1
    j = 0
    for j < N {
        fmt.Println(s1, " ")
        temp = s1 + s2
        s1 = s2
        s2 = temp
        j = j + 1
    }
}
```

Screenshot program

The screenshot shows a Windows desktop environment. In the center is a Microsoft Visual Studio Code (VS Code) window. The title bar says "tugas". The left sidebar shows a file tree with a folder named "TUGAS" containing several Go files: c9_1.go, c9_2.go, c9_3.go, c9_4.go, c9_5.go, c9_6.go, c9_7.go, and c9_8.go. The file "c9_3.go" is currently selected and its code is displayed in the main editor area:

```
cons9 > c9_3.go > ...
1 package main
2 import "fmt"
3
4 func main() {
5     var N, s1, s2, j, temp int
6     fmt.Scan(&N)
7     s1 = 0
8     s2 = 1
9     j = 0
10
11    for j < N {
12        fmt.Println(s1, " ")
13        temp = s1 + s2
14        s1 = s2
15        s2 = temp
16        j = j + 1
17    }
18
19    0 1 1 2 3
20 PS C:\tugas> go run "c:\tugas\cons9\c9_3.go"
21
22    0 1
23 PS C:\tugas> go run "c:\tugas\cons9\c9_3.go"
24
25    0 1 1 2 3 5 8 13 21 34
26 PS C:\tugas> 
```

The status bar at the bottom of VS Code indicates "Ln 3, Col 1 | 45 character Plain t | 100% Wind: UTF-8". Below the VS Code window is a taskbar with various icons for common Windows applications like File Explorer, Task View, and the Start button.

To the right of the VS Code window is a small browser window titled "Nama Far". It displays the following text:

```
Nama : Farrasya Lazuardi
NIM : 109082500040
```

The browser's status bar shows "Ln 3, Col 1 | 45 character Plain t | 100% Wind: UTF-8". The system tray at the bottom right shows the date and time as "25/12/2025 15:38".

Deskripsi program

Program ini sebenarnya dipakai untuk menampilkan deret Fibonacci sebanyak jumlah yang kamu masukkan. Jadi waktu kamu ngisi angka N, program bakal ngeluarin N angka pertama dari deret Fibonacci.

TUGAS

1. Tugas 1

Source code

```
package main

import "fmt"

func main() {
    var gagal int
    var username string
    var password string
    gagal = 0

    for {
        fmt.Print("Masukkan username dan password: ")
        fmt.Scan(&username, &password)

        if username == "Admin" && password == "Admin" {
            break
        } else {
            gagal += 1
        }
    }
    fmt.Println(gagal, "percobaan gagal login")
}
```

Screenshot program

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer (Left):** Shows a tree view of files under "TUGAS". The file "c9_4.go" is currently selected.
- Code Editor (Top Center):** Displays the Go code for a login application. It includes imports for "fmt", a main function with a variable "gagal" initialized to 0, and a loop that prints a login prompt, scans for username and password, and increments "gagal" if the credentials are incorrect (not Admin/Admin).
- Terminal (Bottom Left):** Shows the command "PS C:\tugas> go run "c:\tugas\cons9\c9_4.go"" followed by several login attempts and their results.
- Output (Bottom Left):** Shows the output of the terminal commands.
- Search Bar (Top):** Contains the text "tugas".
- Status Bar (Bottom):** Shows file paths like "c:\tugas\c9_4.go", line numbers (14, 10), character counts (45, 1251), and encoding (UTF-8). It also includes icons for file operations and a date/time stamp "25/12/2023 15:51".

Deskripsi program

Program ini meminta pengguna memasukkan username dan password. Jika yang dimasukkan bukan "Admin", program akan mengulang dan menambah jumlah percobaan gagal. Perulangan berhenti ketika username dan password benar. Setelah itu, program menampilkan berapa kali pengguna salah memasukkan data sebelum berhasil login.

2. Tugas 2

Source code

```
package main

import "fmt"

func main() {
    var n, urut int
    fmt.Println("Masukkan angka: ")
    fmt.Scan(&n)

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

Screenshoot program

The screenshot shows a Visual Studio Code (VS Code) interface. The left sidebar displays a file tree under 'TUGAS' containing several Go files: c9_1.go, c9_2.go, c9_3.go, c9_4.go, c9_5.go, c9_6.go, c9_7.go, and c9_8.go. The 'c9_5.go' file is open in the main editor area, showing the following Go code:

```
func main() {
    var n, urut int
    fmt.Print("Masukkan angka: ")
    fmt.Scan(&n)

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

The terminal at the bottom shows the output of running the program:

```
PS C:\tugas> go run "c:\tugas\cons9\c9_5.go"
Masukkan angka: 4633
3
3
6
4
```

The status bar at the bottom right indicates the current time is 15:53 and the date is 25/12/2025.

Deskripsi program

Program ini digunakan untuk menampilkan setiap digit dari angka yang dimasukkan oleh pengguna, dimulai dari digit paling belakang. Setelah pengguna memasukkan sebuah angka, program mengambil digit terakhir dengan operasi $n \% 10$, kemudian mencetak digit tersebut. Setelah itu, angka diperkecil dengan membaginya ke 10 agar digit berikutnya bisa diambil. Proses ini berulang terus selama nilai n masih lebih besar dari nol. Hasil akhirnya adalah deretan angka yang ditampilkan satu per satu dari belakang ke depan.

3. Tugas 3

Source code

```
package main

import "fmt"

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

    hasil = 0

    for x >= y {
        x = x - y
        hasil++
    }
    fmt.Print(hasil)
}
```

Screenshoot program

The screenshot shows a Windows desktop environment. In the center is a Microsoft Visual Studio Code (VS Code) window. The title bar says "File Edit Selection View Go Run ...". The search bar at the top right contains the text "Q tugas". The left sidebar shows a file tree under "TUGAS" with files like ".vscode", "cons1", "cons2", "cons3", "cons4", "cons5", "cons6", "cons7", "cons8", and "c9_1.go" through "c9_8.go". The main editor area displays a Go language program named "c9_6.go". The code prints a number, reads it, and then checks if it's divisible by 10 or 5. The terminal window below shows the execution of the program with user input and output. To the right of the terminal is a small window titled "Nama Fari" containing student information. The taskbar at the bottom has icons for various applications like File Explorer, Task Manager, and browser tabs. The system tray shows the date and time as "25/12/2025 16:01".

```
import "fmt"

func main() {
    var num, hasil int

    fmt.Println("Masukkan bilangan: ")
    fmt.Scan(&num)

    switch {
        case num%10 == 0:
            hasil = num / 10
            fmt.Println("Kategori: Bilangan Kelipatan 10")
            fmt.Printf("Hasil pembagian antara %d / 10 = %d\n", num, hasil)

        case num%5 == 0:
            hasil = num * num
            fmt.Println("Kategori: Bilangan Kelipatan 5")
    }
}
```

```
Hasil kuadrat dari 25 ^ 2 = 625
PS C:\tugas> go run "c:\tugas\c9_6.go"
Masukkan bilangan: 8
Kategori: Bilangan Genap
Hasil perkalian dengan bilangan berikutnya 8 * 9 = 72
PS C:\tugas> go run "c:\tugas\c9_6.go"
Masukkan bilangan: 20
Kategori: Bilangan Kelipatan 10
Hasil pembagian antara 20 / 10 = 2
PS C:\tugas> 
```

Nama : Farrasya Lazuardi
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Deskripsi program

Program ini bekerja dengan meminta dua angka, lalu mengurangi angka pertama dengan angka kedua berulang-ulang. Setiap pengurangan dihitung, dan totalnya menjadi hasil pembagian. Contoh di terminal menunjukkan bahwa cara tersebut berjalan dengan benar, seperti 5 dibagi 2 menghasilkan 2 karena bisa dikurangi dua kali.

