

**LAPORAN PRAKTIKUM ALGORITMA
DAN PEMROGRAMAN 1**

MODUL [12]

WHILE LOOP



Disusun oleh:

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**PROGRAM STUDI S1 INFORMATIKA
FAKULTAS INFORMATIKA
TELKOM UNIVERSITY PURWOKERTO
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LATIHAN KELAS – GUIDED

1. Guided 1 Source Code

```
package main

import "fmt"

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

    j = n

    for j > 1 {
        fmt.Print(j, " x ")
        j = j - 1
    }
    fmt.Println(1)
}
```

Screenshot program

The screenshot shows a Go code editor interface with several tabs open. The current tab displays the following Go code:

```
package main

import "fmt"

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

    j = n

    for j > 1 {
        fmt.Print(j, " x ")
        j = j - 1
    }
    fmt.Println(1)
}
```

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

```
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM> go run "c:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM\guide1.go"
Masukkan angka: 0
1
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM> go run "c:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM\guide1.go"
Masukkan angka: 1
5 x 4 x 3 x 2 x 1
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM> go run "c:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM\guide1.go"
Masukkan angka: 10
10 x 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM> go run "c:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM\guide1.go"
Masukkan angka: 1
```

Deskripsi Program

Program Go ini meminta memasukkan angka. Kemudian, program mencetak angka tersebut, diikuti oleh "x", lalu angka yang lebih kecil berikutnya, diikuti oleh "x", dan seterusnya, hingga menghasilkan "2 x". Terakhir, program mencetak "1" pada baris baru. Ini seperti mencetak deret faktorial tetapi berhenti di angka 1 dan menggunakan "x" sebagai pemisah.

2. Guided 2 Source Code

```
package main

import "fmt"

func main() {

    var token string

    validToken := "12345abcde"

    for {

        fmt.Print("Masukkan token: ")

        fmt.Scanln(&token)

        if token == validToken {

            fmt.Println("Selamat Anda berhasil

login")

            break

        }

    }

}
```

Screenshot program

The screenshot shows a Windows desktop with the Visual Studio Code application open. The interface includes:

- EXPLORER** sidebar: Shows a tree view of project folders: TUGAS LAPRAK 9, TUGAS LAPRAK 10, and TUGAS LAPRAK 11, each containing several Go files (soal1.go, soal2.go, soal3.go).
- CODE** pane: Displays the content of `guide2.go` in the TUGAS LAPRAK 12 folder. The code defines a package `main` that prints a welcome message if the input token matches a valid one ("12345abcde").
- TERMINAL** pane: Shows the command `go run "c:/Users/.../TUGAS LAPRAK 12/guide2.go"` being run, followed by the output: "Masukkan token: 12345abcde" and "Selamat Anda berhasil login".
- OUTPUT** pane: Shows the command and its execution.
- PROBLEMS** pane: Shows 10 errors, likely related to other files in the project.
- STATUS BAR**: Shows the current line (Ln 2, Col 17), character count (40 karakter), and encoding (UTF-8).

Deskripsi Program

Program Go ini mensimulasikan proses masuk. Program ini terus-menerus meminta pengguna untuk memasukkan token. Jika token yang dimasukkan cocok dengan token valid yang telah ditentukan ("12345abcde"), program akan menampilkan "Selamat Anda berhasil masuk" (yang berarti "Selamat, Anda telah berhasil masuk") dan kemudian keluar dari loop. Jika token salah, program akan meminta pengguna lagi.

3. Guided 3 Source Code

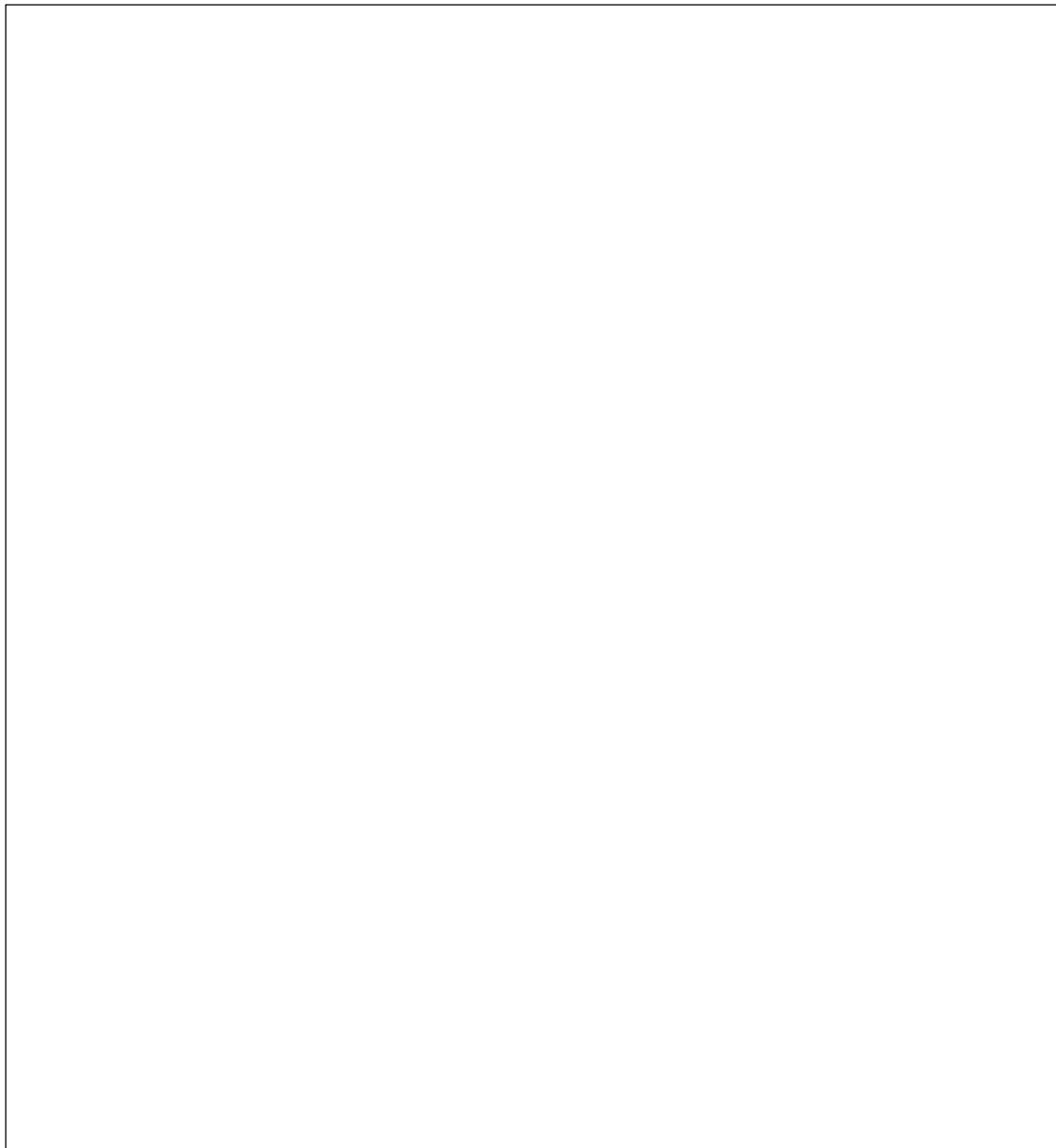
```
package main

import "fmt"

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

    a,b := 0,1
    i := 1

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



Screenshot program

The screenshot shows a code editor with multiple tabs open, each containing a Go program. The tabs are:

- guide1.go (TUGAS LAPRAK 12)
- guide2.go (TUGAS LAPRAK 12)
- guide3.go (TUGAS LAPRAK 12)
- soal1.go (TUGAS LAPRAK 12)
- soal2.go (TUGAS LAPRAK 12)

The guide3.go tab is active, displaying the following Go code:

```
package main
import "fmt"
func main() {
    var n int
    fmt.Print("Masukkan N: ")
    fmt.Scan(&n)
    a,b := 0,1
    i := 0
    for i < n {
        fmt.Print(a, " ")
        a,b = b, a+b
        i++
    }
}
```

The terminal below the code editor shows the execution of the guide3.go program:

```
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM> go run "c:\User
Masukkan N: 5
0 1 1 2 3
```

A separate terminal window titled "NAMA" is also visible, showing the user's name and ID:

```
NAMA: RASYA PUTRA WIBOWO
NIM: 109082500132
```

The bottom status bar indicates the file is saved with the name "LAPRAK 12\guide3.go".

Deskripsi Program

Program Go ini menghitung dan mencetak deret Fibonacci hingga jumlah suku tertentu. Pertama, program meminta pengguna untuk memasukkan jumlah suku (N). Kemudian, program menginisialisasi dua angka Fibonacci pertama (0 dan 1). Terakhir, program mengulangi proses N kali, mencetak setiap angka Fibonacci dan memperbarui nilainya untuk menghitung angka berikutnya.

TUGAS

1. Tugas 1

Source code

```
package main

import "fmt"

func main() {
    var username, password string
    failedAttempts := 0
    correctUsername := "Admin"
    correctPassword := "Admin"

    for username != correctUsername || password != correctPassword {
        fmt.Println("Masukkan username: ")
        fmt.Scanln(&username)
        fmt.Println("Masukkan password: ")
        fmt.Scanln(&password)

        if username != correctUsername || password != correctPassword {
            failedAttempts++
        }
    }

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

Screenshot program

The screenshot shows a Go code editor interface with several tabs open. The active tab contains the following Go code:

```
guide1.go TUGAS LAPRAK 12 5 guide2.go TUGAS LAPRAK 12 1 guide3.go TUGAS LAPRAK 12 1 soal1.go TUGAS LAPRAK 12 1 X soal2.go TUGAS LAPRAK 12 1 BLACKBOX ...  
File Edit Selection View Go Run Terminal Help ← → TUGAS LAPORAN PRAKTIKUM  
EXPLORER TUGAS LAPRAK 9  
TUGAS LAPRAK 9  
soal1.go  
soal1modul.go  
soal2.go  
soal2modul.go  
soal3.go  
soal3modul.go  
TUGAS LAPRAK 10  
guide1.go  
guide2.go  
guide3.go  
soal1.go  
soal2.go  
soal3.go  
TUGAS LAPRAK 11  
guide1.go  
guide2.go  
guide3.go  
soal1.go  
soal2.go  
soal3.go  
TUGAS LAPRAK 12  
guide1.go 5  
guide2.go 1  
guide3.go 1  
soal1.go 1  
soal2.go 1  
soal3.go 1  
OUTLINE  
TIMELINE  
GO  
PACKAGE OUTLINE  
File Edit Lihat H1 ...  
PROBLEMS 10 OUTPUT DEBUG CONSOLE TERMINAL PORTS  
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM> go run "c:/User  
Masukkan username: Admin  
Masukkan password: Admin  
0 percobaan gagal login  
PS C:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM>  
NAMA:RASYA PUTRA WIBOWO  
NIM:109082500132  
APRAK 12\soal1.go"  
Ln 2, Col 17 | 40 karakter Teks b | 100% Window | UTF-8
```

The terminal window shows the output of running the program, which asks for a username and password, and then prints the number of failed attempts.

Deskripsi Program

Program Go ini mensimulasikan penghitung percobaan login. Program ini meminta nama pengguna dan kata sandi pengguna, membandingkannya dengan kredensial yang benar ("Admin" untuk keduanya), dan menambahkan penghitung failedAttempts jika salah satu salah. Program ini terus meminta hingga *nama* pengguna dan kata sandi benar. Terakhir, program ini mencetak jumlah total percobaan login yang gagal.

2. Tugas 2

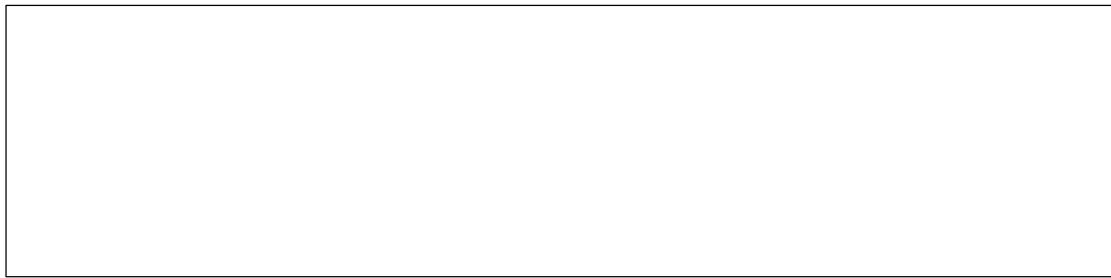
Source code

```
package main

import "fmt"

func main() {
    var number int
    fmt.Print("Masukkan bilangan bulat positif: ")
    fmt.Scanln(&number)

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



Screenshoot program

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

- File Explorer:** Shows a tree view of files across three projects:
 - TUGAS LAPRAK 9: soal1.go, soal1modul.go, soal2.go, soal2modul.go, soal3.go, soal3modul.go
 - TUGAS LAPRAK 10: guide1.go, guide2.go, guide3.go, soal1.go, soal2.go, soal3.go
 - TUGAS LAPRAK 11: guide1.go, guide2.go, guide3.go, soal1.go, soal2.go, soal3.go
 - TUGAS LAPRAK 12: guide1.go, guide2.go, guide3.go, soal1.go, soal2.go, soal3.go
- Code Editor:** The main editor window displays the content of `soal2.go` (TUGAS LAPRAK 12). The code reads a positive integer from the user, prints each digit on a new line, and then prints the entire number again.

```
1 package main
2
3 import "fmt"
4
5 func main() {
6     var number int
7     fmt.Println("Masukkan bilangan bulat positif: ")
8     fmt.Scanln(&number)
9
10    for number > 0 {
11        digit := number % 10
12        fmt.Println(digit)
13        number /= 10
14    }
15    fmt.Println()
16 }
```
- Terminal:** The terminal window shows the command `go run "c:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM\soal2.go"` being run, followed by the user input "Masukkan bilangan bulat positif: 2544" and the program's output showing each digit on a new line.

Deskripsi Program

Program Go ini mengambil bilangan bulat positif sebagai masukan dan mencetak setiap digitnya pada baris terpisah, dimulai dari digit paling tidak penting (paling kanan) dan berlanjut ke digit paling penting (paling kiri).

3. Tugas 3

Source code

```
package main

import "fmt"

func main() {
    var x, y int

    fmt.Scan(&x, &y)

    hasil := 0
    temp := x

    for temp >= y {
        temp = temp - y
        hasil++
    }

    fmt.Println(hasil)
}
```

Screenshot program

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

- File Explorer:** Shows a tree view of files across four projects: TUGAS LAPRAK 9, TUGAS LAPRAK 10, TUGAS LAPRAK 11, and TUGAS LAPRAK 12. Each project contains multiple Go files (soal1.go, soal2.go, soal3.go, guide1.go, guide2.go, guide3.go).
- Terminal:** Displays the command `go run "c:\Users\ACER\OneDrive\Documents\TUGAS LAPORAN PRAKTIKUM"`.
- Output:** Shows the results of the program execution:

```
NAMA: RASYA PUTRA WIBOWO
NIM: 109082500132
```
- Problems:** Shows 10 problems related to the code.
- Outline:** Shows the outline of the current file (soal3.go).
- Timeline:** Shows the timeline of changes.
- Go:** Shows the Go version information.
- Package Outline:** Shows the package outline.

Deskripsi Program

Program Go ini menghitung pembagian bilangan bulat (hasil bagi) dari dua bilangan (x dan y) tanpa menggunakan operator pembagian. Program ini menerima dua masukan bilangan bulat, x dan y. Kemudian, program ini berulang kali mengurangi y dari x hingga x kurang dari y. Banyaknya pengurangan yang dilakukan merupakan hasil bagi, yang kemudian dicetak.