

LAPORAN PRAKTIKUM
Algoritma Pemrograman

MODUL 12
WHILE – LOOP



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PROGRAM STUDI S1 INFORMATIKA
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1. Guided Laprak Modul 12

Source code

```
package main

import "fmt"

func main() {

    var n, j int

    fmt.Scan(&n)

    j = n

    for j > 1 {

        fmt.Print(j, " x ")

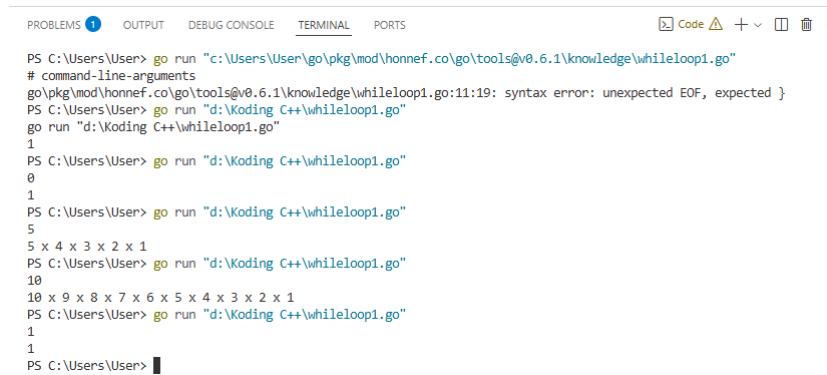
        j = j - 1
    }

    fmt.Println(1)
}
```

Screenshot program



```
D: > Koding C++ > -eo whileloop1.go > ...
1 package main
2
3 import "fmt"
4
5 func main() {
6     var n, j int
7     fmt.Scan(&n)
8     j = n
9     for j > 1 {
10         fmt.Print(j, " x ")
11         j = j - 1
12     }
13     fmt.Println(1)
14 }
15
```



```
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Code ▲ + × ☰ ·
PS C:\Users\User> go run "c:\Users\User\go\pkg\mod\honnef.co\go\tools@v0.6.1\knowledge\whileloop1.go"
# command-line-arguments
go/pkg/mod/honnef.co/go/tools@v0.6.1\knowledge\whileloop1.go:11:19: syntax error: unexpected EOF, expected }
PS C:\Users\User> go run "d:\Koding C++\whileloop1.go"
go run "d:\Koding C++\whileloop1.go"
1
PS C:\Users\User> go run "d:\Koding C++\whileloop1.go"
0
1
PS C:\Users\User> go run "d:\Koding C++\whileloop1.go"
5
5 x 4 x 3 x 2 x 1
PS C:\Users\User> go run "d:\Koding C++\whileloop1.go"
10
10 x 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1
PS C:\Users\User> go run "d:\Koding C++\whileloop1.go"
1
1
PS C:\Users\User>
```

Deskripsi program

Program di atas merupakan program sederhana yang berfungsi untuk menampilkan deret perkalian / factorial dari suatu bilangan bulat positif. Program bekerja dengan cara membaca satu input berupa bilangan integer, lalu menghasilkan keluaran berupa rangkaian perkalian angka dari nilai input tersebut.

2. Guided Laprak Modul 12

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")
}
```

Screenshoot program

The screenshot shows a code editor interface with a Go file named `Login.go`. The code defines a `main` package with a `main` function. This function reads tokens from the user until it finds one that matches "12345abcde". Once a match is found, it prints a success message.

```
D: > Koding C++ > ~ Login.go > main
1 package main
2
3 import "fmt"
4
5 func main() {
6     var token string
7     fmt.Scan(&token)
8     for token != "12345abcde" {
9         fmt.Scan(&token)
10    }
11    fmt.Println("Selamat Anda berhasil login")
12 }
```

Below the code editor is a terminal window showing the execution of the program. It prompts for tokens and prints them back. When the correct token "12345abcde" is entered, it outputs "Selamat Anda berhasil login".

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\User> go run "d:\Koding C++\Login.go"
Qwe12312
231234
13213
12311jwe
12345abcde
Selamat Anda berhasil login
PS C:\Users\User> go run "d:\Koding C++\Login.go"
12345abcde
Selamat Anda berhasil login
PS C:\Users\User>
```

Deskripsi program

Program ini digunakan untuk melakukan proses login menggunakan sebuah token. Program akan terus meminta input token dari pengguna sampai pengguna memasukkan token yang benar. Jika token yang dimasukkan tidak sesuai, program akan mengulang dan meminta token kembali. Setelah token yang benar berhasil dimasukkan, program akan menampilkan pesan bahwa login berhasil.

3. Guided Laprak Modul 12

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 code editor and a terminal window. The code editor displays a Go program named `Fibonaci.go` with the following content:

```
D: > Koding C++ > Fibonaci.go > main
1 package main
2
3 import "fmt"
4
5 func main() {
6     var N, s1, s2, j, temp int
7     fmt.Scan(&N)
8     s1 = 0
9     s2 = 1
10    j = 0
11    for j < N {
12        fmt.Println(s1, " ")
13        temp = s1 + s2
14        s1 = s2
15        s2 = temp
16        j = j + 1
17    }
18 }
```

The terminal window below shows the execution of the program and its output:

```
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\User> go run "d:\Koding C++\Fibonaci.go"
5
0 1 1 2 3
PS C:\Users\User> go run "d:\Koding C++\Fibonaci.go"
2
0 1
PS C:\Users\User> go run "d:\Koding C++\Fibonaci.go"
10
0 1 1 2 3 5 8 13 21 34
PS C:\Users\User>
```

Deskripsi Program

Program ini merupakan implementasi sederhana dari deret Fibonacci. Deret Fibonacci adalah urutan bilangan di mana setiap suku merupakan hasil penjumlahan dari dua suku sebelumnya.

Program meminta input berupa bilangan bulat N yang menyatakan berapa banyak suku Fibonacci yang ingin ditampilkan. Setelah menerima input, program mencetak N suku pertama dari deret Fibonacci secara berurutan.

1. Soal Latihan Modul 12

Source code

```
package main

import "fmt"

func main() {
    var user, pass string
    salah := 0

    for {
        fmt.Scan(&user, &pass)
        if user == "Admin" && pass == "Admin" {
            break
        } else {
            salah++
        }
    }

    fmt.Println(salah, "percobaan gagal login")
}
```

Screenshot Program

The screenshot shows a code editor with a Go file named Latsol 2.go. The code defines a main package with a main function. It uses the fmt package for input and output. The main function contains a loop that reads user and pass strings from the user. If both are "Admin", it breaks the loop. Otherwise, it increments a salah counter. After the loop, it prints the value of salah followed by the message "percobaan gagal login". Below the code editor is a terminal window showing the execution of the program. It runs "go run d:\Koding C++\Latsol 2.go" and provides several sets of user and pass inputs. In each set, the first input is rejected ("User123 user123") and the second is accepted ("Admin admin"). The terminal then prints the total number of failed attempts (4 or 0) and the final message.

```
D:\> Koding C++ > go run "d:\Koding C++\Latsol 2.go"
1 package main
2
3 import "fmt"
4
5 func main() {
6     var user, pass string
7     salah := 0
8
9     for {
10         fmt.Scan(&user, &pass)
11         if user == "Admin" && pass == "Admin" {
12             break
13         } else {
14             salah++
15         }
16     }
17 }
18
19 fmt.Println(salah, "percobaan gagal login")
20
21
```

PROBLEMS 5 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\User> go run "d:\Koding C++\Latsol 2.go"
User123 user123
User admin
Admin admin
Admin Admin123
Admin Admin
4 percobaan gagal login
PS C:\Users\User> go run "d:\Koding C++\Latsol 2.go"
Admin Admin
0 percobaan gagal login
PS C:\Users\User>
```

Deskripsi Program

Program ini meminta user memasukkan username dan password.

Selama input masih salah, program tidak menampilkan pesan apa pun, hanya menghitung berapa kali user gagal login.

Begitu user memasukkan username dan password yang benar, program langsung menampilkan jumlah total percobaan gagal login.

Program memakai perulangan infinite loop dan berhenti hanya ketika login benar.

2. Soal Latihan Modul 12

Source Code

```
package main

import "fmt"

func main() {
    var n int
    fmt.Scan(&n)

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

Screenshot Program

The screenshot shows a code editor with a Go file named Latsol 2.go. The code reads a number from the user, then prints its digits in reverse order (from right to left). Below the code editor is a terminal window showing the execution of the program and its output.

```
D: > Koding C++ > -o Latsol 2.go > ...
1 package main
2
3 import "fmt"
4
5 func main() {
6     var n int
7     fmt.Scan(&n)
8
9     for n > 0 {
10         fmt.Println(n % 10)
11         n /= 10
12     }
13 }
```

```
PROBLEMS 5 OUTPUT DEBUG CONSOLE TERMINAL PORTS [x]
PS C:\Users\User>
PS C:\Users\User> go run "d:\Koding C++\Latsol 2.go"
2
2
PS C:\Users\User> go run "d:\Koding C++\Latsol 2.go"
2544
4
4
5
2
PS C:\Users\User> go run "d:\Koding C++\Latsol 2.go"
3423554654
4
5
6
4
5
5
3
2
4
3
PS C:\Users\User>
```

Deskripsi Program

Program ini membaca sebuah bilangan bulat, lalu menampilkan setiap digitnya mulai dari digit paling kanan.

Prosesnya dilakukan dengan operasi

$n \% 10 \rightarrow$ mengambil digit terakhir

$n /= 10 \rightarrow$ membuang digit terakhir

Program terus berjalan sampai bilangan habis menjadi nol.

Tujuannya untuk memisahkan angka secara terbalik.

3. Soal Latihan Modul 12

Source Code

```
package main

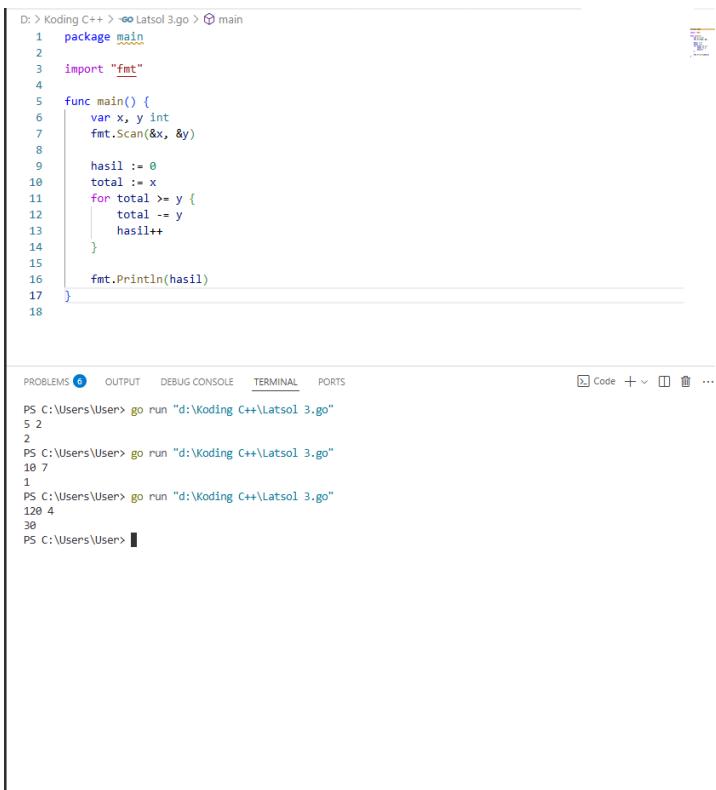
import "fmt"

func main() {
    var x, y int
    fmt.Scan(&x, &y)

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

    fmt.Println(hasil)
}
```

Screenshot Program



The screenshot shows a code editor interface with a terminal window below it. The code editor displays a Go program named 'main.go' with the following content:

```
D:\> Koding C++ > go Latsol 3.go > main
1 package main
2
3 import "fmt"
4
5 func main() {
6     var x, y int
7     fmt.Scan(&x, &y)
8
9     hasil := 0
10    total := x
11    for total >= y {
12        total -= y
13        hasil++
14    }
15
16    fmt.Println(hasil)
17 }
```

The terminal window below shows the output of running the program with input values 5 and 2, resulting in an output of 1. It also shows the command used to run the program.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\User> go run "d:\Koding C++\Latsol 3.go"
5 2
2
PS C:\Users\User> go run "d:\Koding C++\Latsol 3.go"
10 7
1
PS C:\Users\User> go run "d:\Koding C++\Latsol 3.go"
120 4
30
PS C:\Users\User>
```

Deskripsi Program

Program ini digunakan untuk menghitung berapa kali suatu bilangan y bisa dikurangi dari bilangan x sebelum hasilnya menjadi kurang dari y. Dengan kata lain, program ini melakukan operasi pembagian bilangan bulat secara manual tanpa menggunakan operator /.