

**LAPORAN PRAKTIKUM ALGORITMA  
DAN PEMROGRAMAN 2**

**MODUL 12**

**WHILE-LOOP**



**Disusun oleh:**

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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 int
    fmt.Scan(&n)
    if n == 0 {
        fmt.Println(1)
    } else {
        for i := n; i >= 1; i-- {
            fmt.Print(i)
            if i != 1 {
                fmt.Print("x")
            }
        }
    }
}
```

**Screenshoot program:**

The screenshot shows a code editor with a Go file named 'Guided1.go'. The code reads an integer 'n' from standard input and prints it if n == 0, or prints a factorial-like string otherwise. Below the editor is a terminal window showing the execution of the program and its output.

```
1 package main
2 import "fmt"
3
4 func main() {
5     var n int
6     fmt.Scan(&n)
7     if n == 0 {
8         fmt.Println(1)
9     } else {
10        for i := n; i >= 1; i-- {
11            fmt.Print(i)
12            if i != 1 {
13                fmt.Print("x")
14            }
15        }
16    }
17 }
```

Terminal Output:

```
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided1.go"
0
1
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided1.go"
5
5x4x3x2x1
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided1.go"
10
10x9x8x7x6x5x4x3x2x1
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> []
```

**Deskripsi program :** Program ini membaca input n. Jika n bernilai 0, langsung mencetak 1. Jika tidak, program mencetak deretan angka dari n sampai 1, dan setiap angka dipisahkan dengan tanda x, kecuali angka terakhir. Hasilnya menampilkan bentuk perkalian faktorial seperti  $5 \times 4 \times 3 \times 2 \times 1$ .

## 2. Guided 2

### Source Code

```
package main

import "fmt"

func main() {
    var password string
    passwordValid := "12345abcde"

    fmt.Scan(&password)

    for password != passwordValid {
```

```
    fmt.Scan(&password)

}

fmt.Println("Selamat Anda Berhasil Masuk" )

}
```

## ScreenshootProgram

The screenshot shows a code editor with a Go file named `Guided2.go`. The code defines a `main` package with a `main()` function. It includes a variable `passwordValid` set to `"12345abcde"`, a `fmt.Scan` statement to read input into `password`, and a `for` loop that continues until `password` matches `passwordValid`. If it does, it prints "Selamat Anda Berhasil Masuk". Below the code editor is a terminal window titled "namaprad" showing the execution of the program. The user inputs "nama:praditya putra zaeni" and "nim:109082530013", which are then printed back to the user. At the bottom of the terminal, the command `go run "c:\users\radit\onedrive\documents\alpro1\while-loop\guided2.go"` is shown. The terminal also displays several other test runs where the user inputs various passwords like "12345abcde", "Qwe12312", "231234", "13213", "12311jwe", and "12345abcde", and the program correctly identifies them as invalid.

```
1 package main
2
3 import "fmt"
4 func main() {
5     var password string
6     passwordValid := "12345abcde"
7
8     fmt.Scan(&password)
9
10    for password != passwordValid {
11        fmt.Scan(&password)
12    }
13    fmt.Println("Selamat Anda Berhasil Masuk")
14 }
15
```

```
nama:praditya putra zaeni
nim:109082530013

Ln 1, Col 26: 47 character Pain! 100% Wind UTF-8
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE POINTS + - × + - ×
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided2.go"
12345abcde
Welcome!
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided2.go"
Qwe12312
231234
13213
12311jwe
12345abcde
Selamat Anda Berhasil Masuk
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided2.go"
12345abcde
Selamat Anda Berhasil Masuk
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop>
```

**Deskripsi program :** Program ini meminta pengguna memasukkan password dan akan terus mengulang input selama password yang dimasukkan belum sama dengan "12345abcde". Jika password akhirnya cocok, program berhenti dan menampilkan pesan "Selamat Anda Berhasil Masuk".

### 3. Guided 3

#### Source Code

```
package main

import "fmt"

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

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

    for i = 0; i < n; i++ {
        fmt.Println(a, " ")
        a, b = b, a+b
    }
}
```

#### Screenshot program

The screenshot shows a Go code editor interface with a code editor window containing a Go file named `guided3.go`. The code defines a function `main()` that reads an integer `n` from standard input, initializes variables `a` and `b` to 0 and 1 respectively, and then prints the first `n` numbers of the Fibonacci sequence. Below the code editor is a terminal window showing the command `go run` being used to execute the program. The output of the program is displayed in a separate terminal window titled "namaprad". The output shows the user's name and NIM, followed by the generated Fibonacci sequence.

```
90 Guided3.go > main
1 package main
2
3 import "fmt"
4
5 func main() {
6     var n int
7     fmt.Scan(&n)
8
9     a, b := 0, 1
10    i := 0
11
12    for i = 0; i < n; i++ {
13        fmt.Println(a, "")
14        a, b = b, a+b
15    }
16 }
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE PORTS

```
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided3.go"
5
0 1 1 2 3
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided3.go"
10
0 1 1 2 3 5 8 13 21 34
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop\guided3.go"
7
0 1
```

nama:praditya putra zaeni  
nim:109082530013

**Deskripsi program** Program ini membaca input `n`, lalu mencetak deret Fibonacci sebanyak `n` angka. Nilai awal Fibonacci diset `a = 0` dan `b = 1`. Pada setiap perulangan, program mencetak nilai `a`, lalu memperbarui `a` dan `b` menjadi `b` dan `a + b`. Dengan cara ini, deret Fibonacci ditampilkan mulai dari 0 seterusnya hingga jumlah yang diminta.

## TUGAS

## 1. Tugas 1

### Source Code

```
package main

import "fmt"

func main() {
    const benarUser = "Admin"
    const benarPass = "Admin"

    var user, pass string
    percobaanGagal := 0

    for {
        fmt.Scan(&user, &pass)

        if user == benarUser && pass == benarPass {
            break
        } else {
            percobaanGagal++
        }
    }

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

### Screenshoot program

```
soal1.go:2:1: main
1 package main
2
3 import "fmt"
4
5 func main() {
6     const benarUser = "Admin"
7     const benarPass = "Admin"
8
9     var user, pass string
10    percobaanGagal := 0
11
12    for {
13        fmt.Scan(&user, &pass)
14
15        if user == benarUser && pass == benarPass {
16            break
17        } else {
18            percobaanGagal++
19        }
20    }
21
22    fmt.Printf("%d percobaan gagal login\n", percobaanGagal)
23
24 }
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE PORTS

```
PS C:\Users\Radit\OneDrive\Documents\VALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\VALPRO1\while-loop\soal1.go"
user123 user123
user Admin
Admin admin
Admin Admin123
Admin Admin
4 percobaan gagal login
PS C:\Users\Radit\OneDrive\Documents\VALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\VALPRO1\while-loop\soal1.go"
Admin Admin
0 percobaan gagal login
```

**Deskripsi program:** program memaksa pengguna memasukkan username & password berulang sampai cocok dengan kredensial yang telah ditetapkan, menghitung setiap kegagalan, dan setelah berhasil menampilkan berapa kali percobaan gagal terjadi.

## Tugas 2 .

### Source code

```
package main

import "fmt"

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

    for bilangan > 0 {
        digit := bilangan % 10
```

```

        fmt.Println(digit)
        bilangan = bilangan / 10
    }
}

```

### Screenshoot Code :

```

<-- soal2.go > ...
1 package main
2
3 import "fmt"
4
5 func main() {
6     var bilangan int
7     fmt.Scan(&bilangan)
8
9     for bilangan > 0 {
10         digit := bilangan % 10
11         fmt.Println(digit)
12         bilangan = bilangan / 10
13     }
14 }
15

```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE PORTS

PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\ALPRO1\while-loop\soal2.go"
2
2
PS C:\Users\Radit\OneDrive\Documents\ALPRO1\while-loop> go run "c:\users\Radit\OneDrive\Documents\ALPRO1\while-loop\soal2.go"
2544
4
4
5
2
go run "c:\users\Radit\OneDrive\Documents\ALPRO1\while-loop\soal2.go"
3423554654
4
5
6
4
5
5
3
2
4
3

File Edit View Help

nama:praditya putra zaeni  
nim:109982530813

Line 1, Col 26 42 character Plain text 100% Wed UTF-8

**Deskripsikan Program:** Program ini membaca sebuah bilangan, lalu selama bilangan masih lebih dari 0, program mengambil dan mencetak digit terakhir dengan bilangan % 10, kemudian menghapus digit tersebut dengan bilangan = bilangan / 10. Hasilnya, setiap digit ditampilkan satu per satu mulai dari digit paling belakang.

### Tugas 3.

#### Source code:

```
package main

import "fmt"

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

    hasil := 0

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

    fmt.Println(hasil)
}
```

### Screenshot program :

The screenshot shows a code editor interface with a dark theme. On the left is the code editor pane displaying a Go program named 'soal1.go'. The code defines a main function that reads two integers from the user, calculates their quotient using a while loop, and prints the result. The code editor has tabs for PROBLEMS, OUTPUT, TERMINAL, DEBUG CONSOLE, and PORTS. The TERMINAL tab is active, showing the command 'go run' followed by the path to the file. The output window shows the program's execution and the resulting quotient '5'. Below the terminal is a small text editor window titled 'namaprad' containing the student's name and ID.

```
soal1.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
11    for x >= y {
12        x = x - y
13        hasil++
14    }
15
16    fmt.Println(hasil)
17}
18
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE PORTS

```
PS C:\Users\Radity\OneDrive\Documents\ALPRO1\while-loop> go run "C:\Users\Radity\OneDrive\Documents\ALPRO1\while-loop\soal1.go"
5
PS C:\Users\Radity\OneDrive\Documents\ALPRO1\while-loop> go run "C:\Users\Radity\OneDrive\Documents\ALPRO1\while-loop\soal1.go"
5
PS C:\Users\Radity\OneDrive\Documents\ALPRO1\while-loop>
```

namaprad \* + - ×

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nama:praditya putra zaeni  
nim:109082530013

**Deskripsi program :** Program ini menghitung pembagian bulat tanpa memakai operator /. Caranya adalah terus mengurangi x dengan y sambil menghitung berapa kali pengurangan itu terjadi. Jumlah pengurangan tersebut kemudian menjadi hasil pembagian, dan itulah yang dicetak oleh program.