

LAPORAN PRAKTIKUM

Algoritma Pemrograman

MODUL 4

I/O, DATA TYPES & VARIABLES



Disusun oleh:

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S1IF-13-04

PROGRAM STUDI S1 INFORMATIKA

FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

2025

L

1. Guided 1

Source Code

```
package main
import
"fmt"
func
main() {
    var time, second, minute,
hour int

    fmt.Scan(&time)
        second = time % 60
minute = (time % 3600) /
60    hour = time / 3600
        fmt.Printf("%d jam %d menit %d detik", hour, minute,
second) }
```

Screenshot program

The screenshot shows a code editor interface with a dark theme. On the left, the code file `Guided1.go` is displayed:

```
1 package main
2
3 import "fmt"
4
5 func main() {
6
7     var time, second, minute, hour int
8
9     fmt.Scan(&time)
10
11    second = time % 60
12    minute = (time % 3600) / 60
13    hour = time / 3600
14
15    fmt.Printf("%d jam %d menit %d detik", hour, minute, second)
16 }
17
```

Below the code editor is a terminal window showing the execution of the program:

```
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided1.go"
3661
1 jam 1 menit 1 detik
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided1.go"
7322
2 jam 2 menit 2 detik
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided1.go"
3600
1 jam 0 menit 0 detik
PS C:\Code>
```

To the right of the terminal, the program's output is shown in a separate window:

<u>Nama</u>	: Cofa Xavier
<u>Marvel</u>	
<u>Nim</u>	: 109082500001
<u>Kelas</u>	: IF-13-04

Deskripsi program

This program calculates the amount of time in hours, minutes, and seconds.

This program finds the number of hours by dividing the amount of second by 3600 because there are 3600 seconds in a single hour.

The program finds the second count by the modulo of the seconds and 3600, finding the leftover seconds from calculating the hours, then divided by 60 as there are 60 seconds in a minute.

Then the seconds are found by the modulo of the number of seconds and 60,finding the left overs of the left overs out putting the seconds that did not make to the minutes or the hours.

It is the outputted using `fmt.Printf` allowing the printing of integers in conjunction of the string.

2. Guided 2

Source Code

```
package main
import
"fmt"
func main() {    var
in, p1, p2, p3 int
var out bool

fmt.Scan(&in)
    p1 = in % 10
p2 = (in / 10) % 10
p3 = in / 100

    fmt.Println(p3 < p2 && p2 < p1) }
```

Screenshoot program

```

package main

import "fmt"

func main() {
    var in, p1, p2, p3 int
    fmt.Scan(&in)
    p1 = in % 10
    p2 = (in / 10) % 10
    p3 = in / 100
    fmt.Println(p3 < p2 && p2 < p1)
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```

GoCode\Modul-4\Guided\Guided2.go:7:6: declared and not used: out
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided2.go"
# command-line arguments
GoCode\Modul-4\Guided\Guided2.go:7:6: declared and not used: out
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided2.go"
362
false
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided2.go"
256
true
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided2.go"
189
true
PS C:\Code>

```

<u>Nama</u>	: Cofa Xavier
<u>Marvel</u>	
<u>Nim</u>	: 109082500001
<u>Kelas</u>	: IF-13-04

Deskripsi program

This program first separates the number in a variable using modulo and division. All variables being integers allow the use of modulo and division.

Dividing 362 by 100 gets 3.

Dividing 362 by 10 gets 25 modulo by 10 gets 6.

Modulo 362 by 10 get 2.

By comparing the separated numbers using the [</>] greater/less than and the [&&] and operator.

Printing the result, that being a bool.

3. Guided 3

Source Code

```

package main

import "fmt"
func
main() {
    var bodyWeight, bodyHeight, bmi
    float64

    fmt.Scan(&bodyWeight, &bodyHeight)
    bmi = (bodyHeight * bodyHeight) /
bodyWeight

    fmt.Printf("%.2f", bmi)
}

```

Screenshot program

The screenshot shows a Go code editor interface. On the left, the code for `Guided3.go` is displayed:

```
1 package main
2
3 import "fmt"
4
5 func main() {
6     var bodyWeight, bodyHeight, bmi float64
7
8     fmt.Scan(&bodyWeight, &bodyHeight)
9
10    bmi = bodyWeight / (bodyHeight * bodyHeight)
11
12    fmt.Printf("%.2f", bmi)
13}
14
15
```

Below the code, the terminal window shows the execution of the program:

```
> go run "c:\Code\GoCode\Modul-4\Guided\Guided3.go"
70 1.75
22.86
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided3.go"
60 1.6
23.44
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Guided\Guided3.go"
80 1.8
24.69
PS C:\Code>
```

On the right, a text editor window displays student information:

<u>Nama</u>	: Cofa Xavier
<u>Marvel</u>	
<u>Nim</u>	: 109082500001
<u>Kelas</u>	: IF-13-04

Deskripsi program

Declare **bodyweight**, **bodyheight** and **bmi** as floats.

Scan and assign them.

Then calculate the **bmi** by using **weight / (height * height)**.

using **Printf** to print the float.

TUGAS

Tugas 1

Source code

```
package main
import
"fmt"
func
main() {
    var price, discount int
    //declares price and discount as intergers
    fmt.Scan(&price,
&discount)
    //Scans for them both

    fmt.Println(price - ((price * discount) / 100))
    //Print the result of the price being discounted by the discount

}
```

Screenshot program

```
package main
import "fmt"
func main() {
    var price, discount int
    //declares price and discount as intergers
    fmt.Scan(&price, &discount)
    //Scans for them both
    fmt.Println(price - ((price * discount) / 100))
    //Print the result of the price being discounted by the discount
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
24.69
PS C:\Code> go run "c:\Code\GoCode\Modules-4\Tugas\Tugas1.go"
100000
10
90000
PS C:\Code> go run "c:\Code\GoCode\Modules-4\Tugas\Tugas1.go"
200000
20
160000
PS C:\Code> go run "c:\Code\GoCode\Modules-4\Tugas\Tugas1.go"
150000
15
127500
PS C:\Code>
```

Nama : Cofa Xavier
Marvel
Nim : 109082500001
Kelas : IF-13-04

Deskripsi program

This program discounts the price variable using the equation.

$(\text{Price} - (\text{Price} * \text{discount}) / 100))$

The equation is contained in the Printline command.

Tugas 2

Source code

```
package main
import
"fmt"
func
main() {
    var bodyWeight, bodyHeight, bmi
float64

    fmt.Scan(&bmi, &bodyHeight)
    bodyWeight = bmi * (bodyHeight *
bodyHeight)
    fmt.Printf("%.f",
bodyWeight)

}
```

Screenshot program

The screenshot shows a code editor interface with several tabs at the top: Tugas1.go, Tugas2.go, Tugas3.go, PTCOFA1.go, PTCOFA2.go, and Guided3.go. The main pane displays the content of Tugas2.go:

```

1 package main
2
3 import "fmt"
4
5 func main() {
6
7     var bodyWeight, bodyHeight, bmi float64
8
9     fmt.Scan(&bmi, &bodyHeight)
10
11     bodyWeight = bmi * (bodyHeight * bodyHeight)
12
13     fmt.Printf("%.f", bodyWeight)
14
15 }

```

Below the code, the terminal window shows the execution of the program:

```

PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas2.go"
22.85 1.75
70
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas2.go"
23.43 1.6
60
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas2.go"
24.69 1.8
80
PS C:\Code>

```

On the right side of the screen, there is a notes section with the following information:

Nama	: Cofa Xavier
Marvel	
Nim	: 109082500001
Kelas	: IF-13-04

Deskripsi program

All variables are floats.

This program calculates bodyweight using the formula

$$\text{Weight} = \text{bmi} * (\text{height} * \text{height})$$

Then it prints the Weight using printf.

Tugas3

Source code

```

package main

import (
    "fmt"
    "math"
)

func main() {
    var x1, y1, x2, y2, x3, y3 float64

    fmt.Scanln(&x1, &y1)
    fmt.Scanln(&x2, &y2)
    fmt.Scanln(&x3, &y3)

    ab := math.Sqrt(math.Pow(x2-x1, 2) + math.Pow(y2-y1, 2))
    bc := math.Sqrt(math.Pow(x3-x2, 2) + math.Pow(y3-y2, 2))
    ca := math.Sqrt(math.Pow(x1-x3, 2) + math.Pow(y1-y3, 2))

    longest := ab
}

```

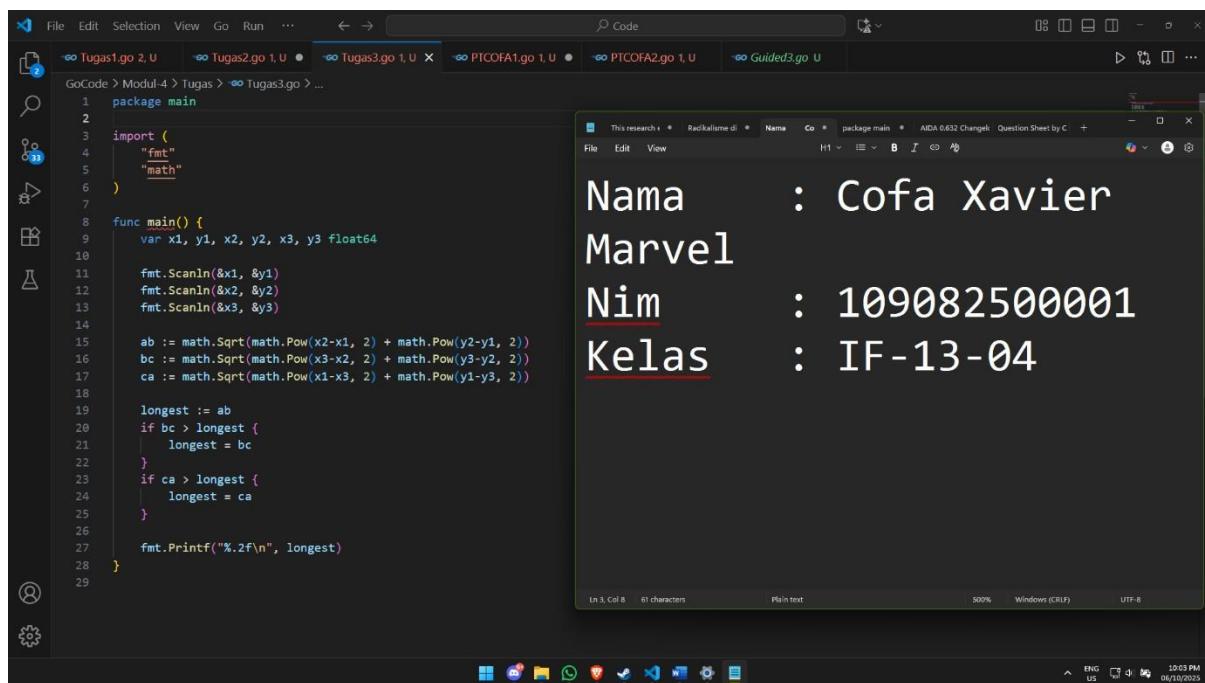
```

if bc > longest {
    longest = bc
}
if ca > longest {
    longest = ca
}

fmt.Printf("%.2f\n", longest)
}

```

Screenshot program



The screenshot shows a code editor interface with a dark theme. On the left, there is a sidebar with icons for file operations like Open, Save, and Find. The main area displays a Go program:

```

File Edit Selection View Go Run ... ⏪ ⏩ Code
GoCode > Modul-4 > Tugas > Tugas3.go > ...
Tugas1.go 2, U Tugas2.go 1, U Tugas3.go 1, U PTCOFA1.go 1, U PTCOFA2.go 1, U Guided3.go U
File Edit View This research ⓘ Radial menu ⓘ Name Co ⓘ AIDA 0.632 Changed Question Sheet by C ...
1 package main
2
3 import (
4     "fmt"
5     "math"
6 )
7
8 func main() {
9     var x1, y1, x2, y2, x3, y3 float64
10
11     fmt.Scanln(&x1)
12     fmt.Scanln(&x2)
13     fmt.Scanln(&y1)
14     fmt.Scanln(&y2)
15     ab := math.Sqrt(math.Pow(x2-x1, 2) + math.Pow(y2-y1, 2))
16     bc := math.Sqrt(math.Pow(x3-x2, 2) + math.Pow(y3-y2, 2))
17     ca := math.Sqrt(math.Pow(x1-x3, 2) + math.Pow(y1-y3, 2))
18
19     longest := ab
20     if bc > longest {
21         longest = bc
22     }
23     if ca > longest {
24         longest = ca
25     }
26
27     fmt.Printf("%.2f\n", longest)
28 }

```

The code calculates the hypotenuse of a triangle given three vertices. It uses the Pythagorean theorem to find the distance between each pair of points and then compares them to find the longest side.

On the right, there is a terminal window displaying student information:

<u>Nama</u>	: Cofa Xavier
<u>Marvel</u>	
<u>Nim</u>	: 109082500001
<u>Kelas</u>	: IF-13-04

The terminal also shows the path: GoCode > Modul-4 > Tugas > Tugas3.go > ...

File Edit Selection View < > Code

Tugas1.go, 2, U Tugas2.go, 1, U Tugas3.go, 1, U PTCOFA1.go, 1, U PTCOFA2.go, 1, U Guided3.go, U

GoCode > Modul-4 > Tugas > Tugas3.go > main

R func main() {

PROBLEMS 6 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas3.go"
1 1
4 1
1 5
5.00
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas3.go"
0 0
4 2
0 3
4.47
PS C:\Code>
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas3.go"
3 0
3 4
0 0
5.00
PS C:\Code> go run "c:\Code\GoCode\Modul-4\Tugas\Tugas3.go"
0 0
1 3
3 2
3.61
PS C:\Code> []
```

This is a screenshot of a Windows desktop environment. On the left, there is a Microsoft Visual Studio Code (VS Code) window. The title bar shows the file path: GoCode > Modul-4 > Tugas > Tugas3.go > main. The code editor displays a Go program with several print statements. The output pane shows the results of running the program multiple times with different inputs. On the right, there is a smaller, separate text editor window. This window contains student information: Name: Xavier Marvel, Nim: 109082500001, and Kelas: IF-13-04. The text is displayed in a large, bold font. The bottom of the screen shows the Windows taskbar with various pinned icons.

Deskripsi program

This program exists to calculate the lengths of the sides of the triangle formed from three points and determine the longest side of the triangle.

The input is formatted as three lines, each of which contains two real numbers representing the coordinates of points 1,2 and 3 in x-y format.

Ex: x1 y1

x2 y2

x3 y3

The program calculates the length using the formula.

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

d = length

**Using a brand new, never seen, if statement to compare and choose the longest side.
The chosen longest is then printed using fmt.Println.**

The output is a float stating the length of the longest side of the triangle formed by these points.