Dasar Pemrograman

Program Studi Informatika

Sesi 7 – Review Materi 1-6

Syahid Abdullah, S.Si, M.Kom

Outline Perkuliahan

- Quiz 1
- Quiz 2
- Quiz 3

Quiz 1

1. Tulis algoritma penjumlahan 5 bilangan. Telusuri algoritma jika diberikan bilangan 1, 3, 5, 7, dan 9.
2. Tulis algoritma untuk menghitung rata-rata dari 5 bilangan. Telusuri algoritma jika diberikan bilangan 1, 3, 5, 7, dan 9.
3. Tulis algoritma untuk mengalikan 3 bilangan. Telusuri algoritma jika diberikan bilangan 2, 9, dan 6.

Jawaban No. 1

```
NAME        : SUM5
GIVENS      : X1,X2,X3,X4,X5
RESULTS     : Total
DEFINITION: Total := SUM5(X1,X2,X3,X4,X5)
-------------------------
METHOD:
    DECLARE
    num X1
    num X2
    num X3
    num X4
    num X5
    num Total

    GET X1
    GET X2
    GET X3
    GET X4
    GET X5

    LET Total = X1 + X2 + X3 + X4 + X5

    GIVE Total
```

- Penelusuran Algoritma menggunakan bilangan 1, 3, 5, 7, 9

	METHOD	Line	X1	X2	X3	X4	X5	Total
(1)	GET X1	1	1					
(2)	GET X2	2		3				
(3)	GET X3	3			5			
(4)	GET X4	4				7		
(5)	GET X5	5					9	
(6)	LET Total = X1 + X2 + X3 + X4 + X5	6						25
(7)	GIVE Total	7 output 25						

Jawaban No. 2

```
NAME        : AVG5
GIVENS      : X1,X2,X3,X4,X5
RESULTS     : AVG
DEFINITION: AVG := AVG5(X1,X2,X3,X4,X5)
-------------------------
METHOD:
DECLARE
    num X1
    num X2
    num X3
    num X4
    num X5
    num AVG

    GET X1
    GET X2
    GET X3
    GET X4
    GET X5

    LET AVG = (X1 + X2 + X3 + X4 + X5) / 5

    GIVE AVG
```

- Penelusuran Algoritma menggunakan bilangan 1, 3, 5, 7, 9

	METHOD	Line	X1	X2	X3	X4	X5	AVG
(1)	GET X1	1	1					
(2)	GET X2	2		3				
(3)	GET X3	3			5			
(4)	GET X4	4				7		
(5)	GET X5	5					9	
(6)	LET AVG = (X1+X2+X3+X4 +X5)/5	6						5
(7)	GIVE AVG	7 output 5						

Jawaban No. 3

```
NAME       : PROD3
GIVENS     : X, Y, Z
RESULTS    : PRODUCT
DEFINITION: PRODUCT := PROD3(X, Y, Z)
-------------------------
METHOD:
    DECLARE
    num X
    num Y
    num Z
    num PRODUCT

    GET X
    GET Y
    GET Z

    LET PRODUCT = X * Y * Z

    GIVE PRODUCT
```

- Penelusuran Algoritma menggunakan bilangan 2, 9, 6

	METHOD	Line	X	Y	Z	PRODUCT
(1)	GET X	1	2			
(2)	GET Y	2		9		
(3)	GET Z	3			6	
(4)	LET PRODUCT = X * Y * Z	4				108
(5)	GIVE PRODUCT	5 output 108				

Quiz 2

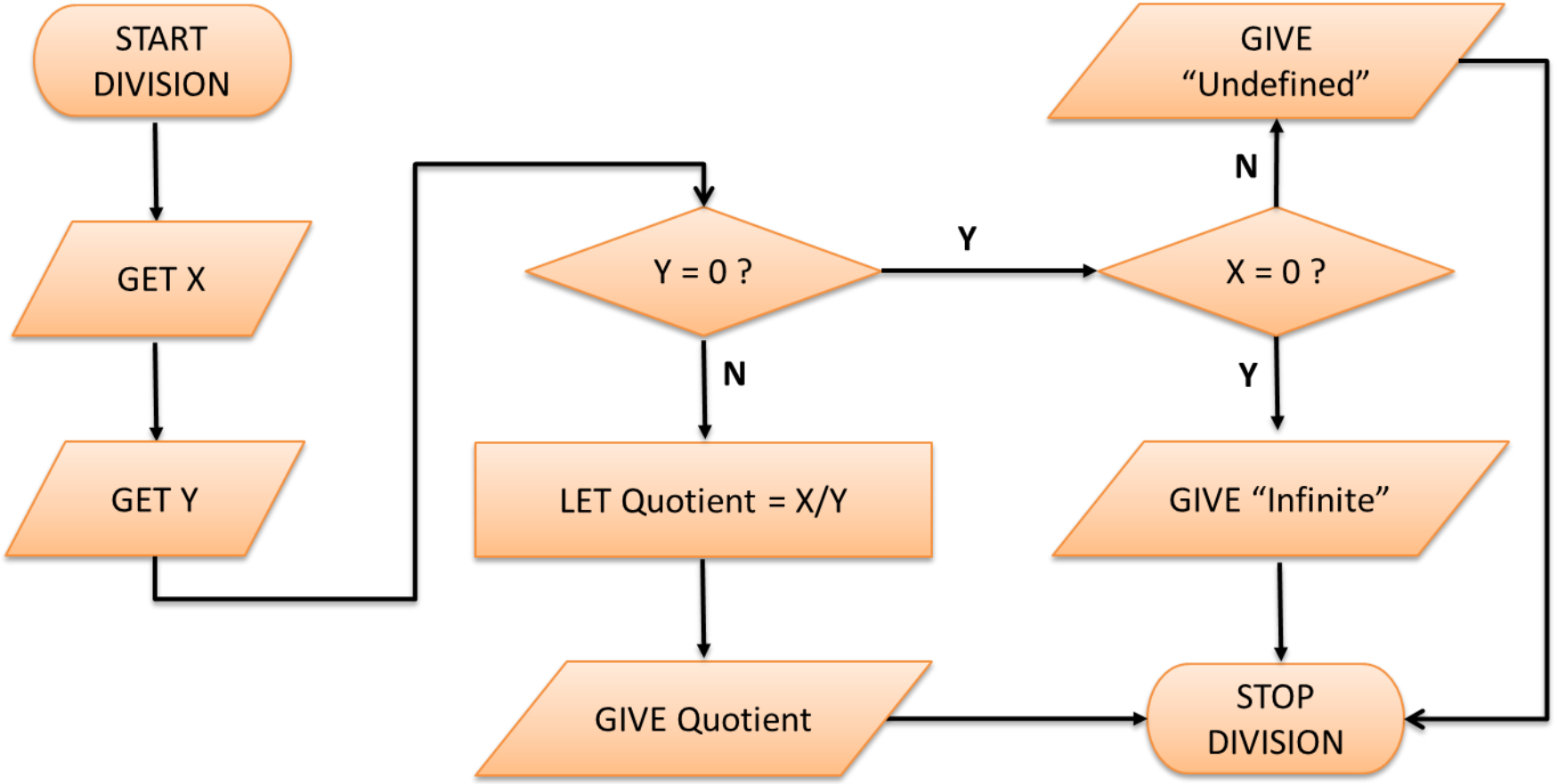
1. Modifikasi Algoritma 2 (Quotient=X/Y) dengan menambahkan kondisi:
   - Jika Y = 0 dan X = 0, maka Quotient “Infinite”
   - Jika Y = 0 dan X $\neq$ 0, maka Quotient “Undefined”
   - Selain dua kondisi di atas, tampilkan nilai Quotient
2. Buat flowchart yang merepresentasikan Algoritma pada soal No. 1

Jawaban No. 1

```
NAME    : Division
GIVENS  : X, Y
RESULTS : Quotient
DEFINITION: Quotient := Division(X,Y)
-------------------------
METHOD  :
  DECLARE
  num X
  num Y
  num Quotient

  GET X
  GET Y

  IF Y = 0
    IF X = 0
        GIVE "Undefined"
    ELSE
        GIVE "Infinite"
    END IF
```

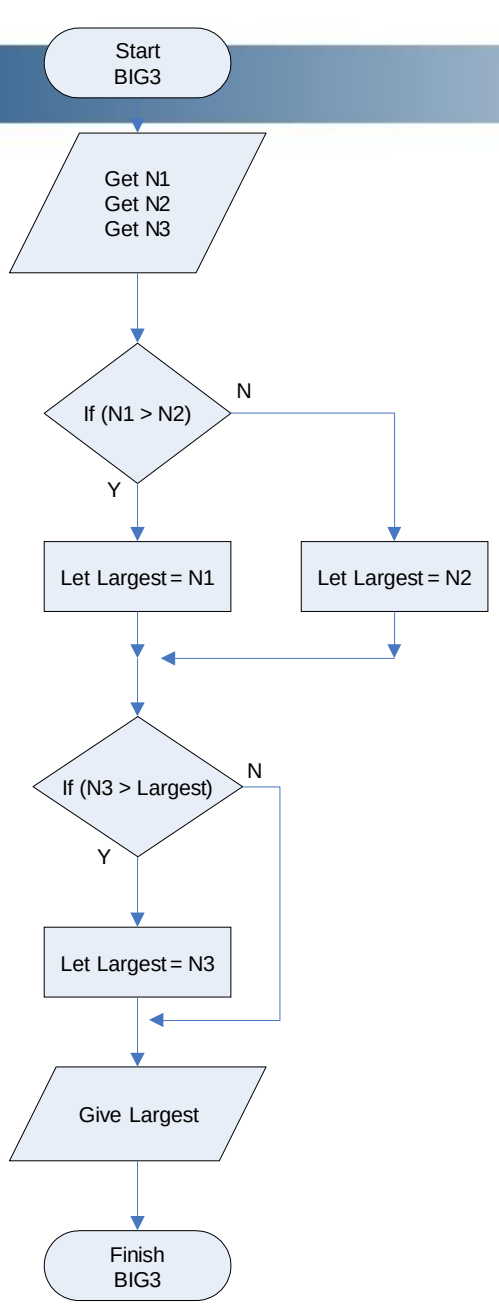
```
  ELSE
    LET Quotient = X/Y
  END IF

  GIVE Quotient
```

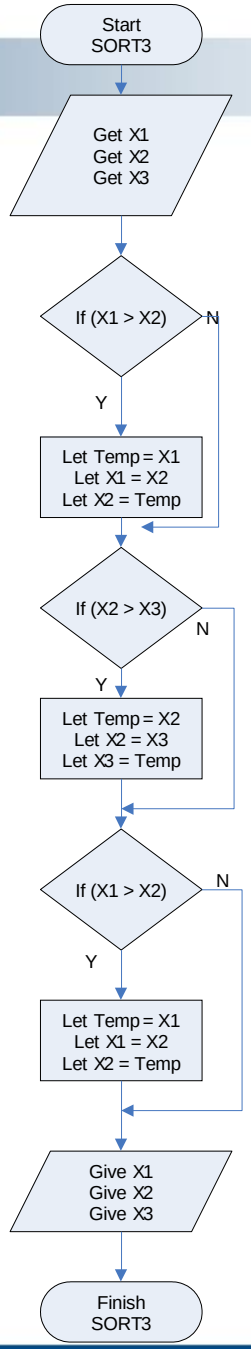
Jawaban No. 2

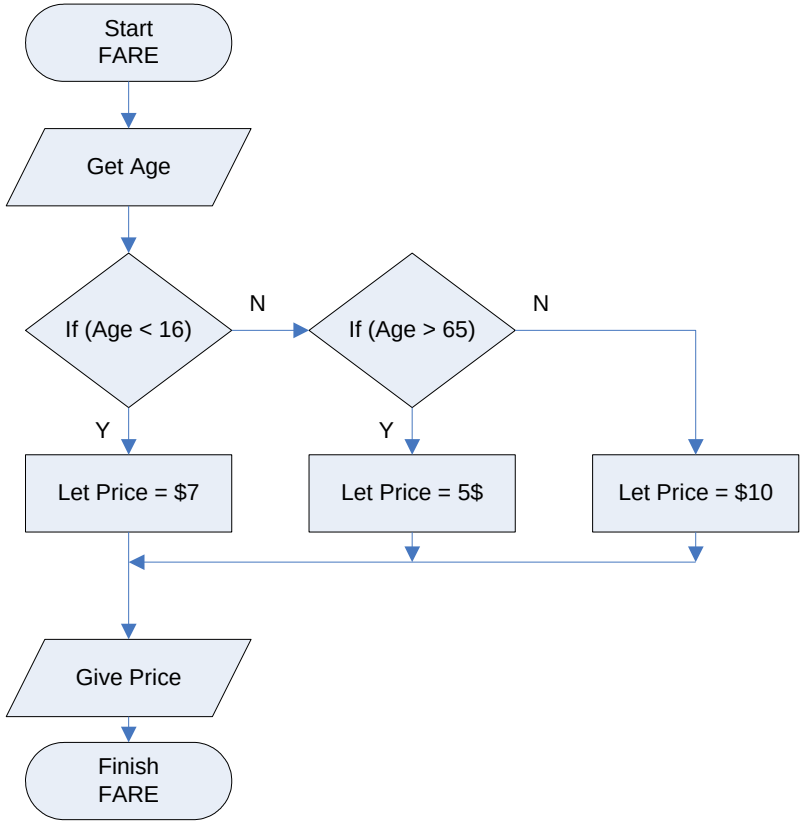

START DIVISION
GET X
GET Y
Y = 0 ?
Y
N
X = 0 ?
N
Y
GIVE "Undefined"
LET Quotient = X/Y
GIVE "Infinite"
GIVE Quotient
STOP DIVISION

Quiz 3

- Tulislah algoritma (deskripsi & method) berdasarkan flowchart dengan menerapkan aturan dalam penulisan pseudocode


Start
BIG3
Get N1
Get N2
Get N3
If (N1 > N2)
N
Y
Let Largest = N1
Let Largest = N2
If (N3 > Largest)
N
Y
Let Largest = N3
Give Largest
Finish
BIG3


Start
SORT3
Get X1
Get X2
Get X3
If (X1 > X2)
N
Y
Let Temp = X1
Let X1 = X2
Let X2 = Temp
If (X2 > X3)
N
Y
Let Temp = X2
Let X2 = X3
Let X3 = Temp
If (X1 > X2)
N
Y
Let Temp = X1
Let X1 = X2
Let X2 = Temp
Give X1
Give X2
Give X3
Finish
SORT3


Start
FARE
Get Age
If (Age < 16)
N
If (Age > 65)
N
Y
Let Price = $7
Y
Let Price = 5$
Let Price = $10
Give Price
Finish
FARE

Jawaban No. 1

```
NAME    : BIG3
GIVENS  : N1, N2, N3
RESULTS : Largest
DEFINITION: Largest := BIG3(N1,N2,N3)
-------------------------
METHOD  :
  DECLARE
  num N1
  num N2
  num N3
  num Largest

  GET N1
  GET N2
  GET N3

  IF N1 > N2
    LET Largest = N1
  ELSE
    LET Largest = N2
  END IF
```

```
  IF N3 > Largest
    LET Largest = N3
  END IF

  GIVE Largest
```

Jawaban 2

```
NAME    : SORT3
GIVENS  : X1, X2, X3
INTERMEDIATE: Temp
DEFINITION: SORT3(X1,X2,X3)
-------------------------
METHOD  :
  DECLARE
  num X1
  num X2
  num X3
  num Temp

  GET X1
  GET X2
  GET X3

  IF X1 > X2
    LET Temp = X1
    LET X1 = X2
    LET X2 = Temp
  END IF
```

```
  IF X2 > X3
    LET Temp = X2
    LET X2 = X3
    LET X3 = Temp
  END IF

  IF X1 > X2
    LET Temp = X1
    LET X1 = X2
    LET X2 = Temp
  END IF

  GIVE X1
  GIVE X2
  GIVE X3
```

Jawaban 3

```
NAME    : FARE
GIVENS  : Age
DEFINITION: FARE(Age)
-------------------------
METHOD  :
  DECLARE
  num Age
  string Price

  GET Age

  IF Age < 16
    LET Price = '$7'
  ELSE IF Age > 65
    LET Price = '$5'
  ELSE
    LET Price = '$10'
  END IF

  GIVE Price
```

Terima Kasih