

TD 2

Exercise 1 :

Evaluate X, Y, and Z in the following complex expressions:

- 1- $X=(2+3*5)-(6/3+8)$
- 2- $Y=X+2*3$
- 3- $Y++;$
- 4- $X=++Y;$
- 5- $Z=(X<Y)\&\&(Y>3)$
- 6- $A=Z || !(X<Y)$
- 7- $B= !Z \text{ and } 3$ //(in algorithmic notation)
- 8- $B= !Z \&\& 3$ //(in C)
- 9- $C=(A || !Z\&\&1 || !(X !=Y))$
- 10- $D= (X>Y) ? 1 : 0 ;$

Exercise 2 :

Write an algorithm that allows swapping two numbers v1 and v2 without using an intermediate variable. Write in an algorithm execution trace table the values of the variables after the execution of each instruction. Draw the flowchart of the implemented algorithm.

Exercise 3 :

Using the minimum number of variables, write an algorithm that calculates the maximum of four numbers entered via the keyboard. Draw the flowchart of the implemented algorithm.

Exercise 4 :

Write an algorithm that calculates the sum of the odd numbers among 4 even and odd numbers entered via the keyboard.

Exercise 5 :

Write an algorithm that calculates the ideal weight based on the height of the person entered in centimeters using the following formula:

Ideal Weight (IW) = (height in cm - 100) - (height cm - 150)/f, where f = 4 for males, f = 2.5 for females.

Draw the flowchart of the implemented algorithm.

Exercise 6 :

Using the conditional structure 'switch', write an algorithm that allows reading the month number and displays the number of days it contains.