



Level: 1st year of computer science  
Course: ADS1

series: TD/TP N°: 02

Academic year:2023/2024  
Chapter 2 : Variables

**Exercise 1 :**

Determine the error if it exists for each identifier  
5TD, \_3, bonne chance, TP, mathématiques, Δ, D-A,  
end, TP

**Exercise 2:**

Give the type and result of the following expressions, in  
algorithm and in C language.

- $5-3.*2+2$
- $10/5*5$
- $(7+6) \bmod 5$
- $12 \operatorname{div} 2 > 17 \bmod 5 *2$
- $1380 \operatorname{div} 60 \bmod 60$
- 'h'>'Q' and  $17>5$
- non ('h'>'Q')

Rewrite previous expressions in C language.

**Exercise 3:**

Give the values of the variables after the execution of  
each instruction of this algorithm.

**Algorithm** Exo3

var A, B: integer

begin

```
A ← 7
B ← A-4
A ← A-1
B ← A+5
```

end

**Exercise 4:**

Give the values of the variables after execution.

**Algorithm** Exo4

var A, B: integer

begin

```
A ← 7
B ← 5
A ← B
B ← A
```

end

- Does this algorithm allow to exchange the values of A and B?
- Propose changes to exchange the values of A and B

**Exercise 5:**

Let's consider the following algorithm:

**Algorithm** Exo5

var a, b: integer

begin

```
a ← 7
b ← 5
a ← a * b
b ← a/b
a ← a/b
```

end

- What does this algorithm do?

**Exercise 6:** (at home) Run this algorithm:

**Algorithm** assignment

Variables a, b, c, x, y, z : integer

d, e, f, g : Boolean

h, i : character

begin

```
a ← 2
h ← 'c'
b ← 3 * a
c ← 10
i ← 'r'
d ← (b - c) = a
e ← Not d
c ← b - c - a
f ← (c ≠ 12) and ( e )
y ← c
x ← b
g ← h > i
```

end

TP

**Exercise 1:**

- Create a new project
- Declare a variable x of integer type.
- Initialize x to 100
- Display x in octal, decimal, hexadecimal, and as a character.
- Display its square and its cube

**Exercise 2:**

Using the printf display instruction, write a program that displays the result of each expression from **Exercise 2** of the TD.

**Exercise 3:**

- Translate the algorithm for exercise 3 of TD in C.
- Add the instruction that displays the result.