

Episod 1 : Introduction to VBA programming

EXERCISE 1

1. What is the value displayed by the algorithm below ?
2. Translate this algorithm into Visual Basic then run it (we can check that the displayed value corresponds to that expected...).

Algorithme 1

Début de l'algorithme

Variables : Integers : X, Y

$X \leftarrow 1$

$Y \leftarrow X + 2$

$X \leftarrow X - 1$

Display $X + Y$

Fin de l'algorithme

EXERCISE 2

1. Write a program allowing the entry of a note and its display.
2. Modify the program so that it displays the message "Adjourned" if the grade is below average.
3. Add to the previous program a grade check (number between 0 and 20). A note incorrect must not be displayed (message "Input error").

EXERCISE 3

1. Write a program allowing the entry of two notes then display the smaller of the two.
2. Same question with ten marks.

EXERCISE 4

1. Translate into a "While" loop below the "For" loop.
2. Translate the two algorithms into Visual Basic then run them...

Algorithme 2

Début de l'algorithme

Variables : Integer : i

For $i=0$ To 10 Do

Display "Hi"

End For

Fin de l'algorithme

EXERCISE 5

1. Translate the "While" loop of the following algorithm into a "Do Loop Until" loop.
2. Translate the two algorithms into Visual Basic then run them...

Algorithm 3

Début de l'algorithme

Variables : Integer : i

$i \leftarrow 1$

While $i < 10$

 Display "I've been there i times"

$i \leftarrow i + 1$

End While

Fin de l'algorithme

EXERCISE 6

1. Write a program that allows you to type not notes (not is known and fixed).
2. Add to the previous program the calculation of the average of the marks.
3. Same exercise, but do not take incorrect scores into account in the calculation.
4. Same exercise, but we do not know in advance the number not, the program continues as long as a note incorrect entry was not entered.

EXERCISE 7

1. Add to the functions already present in Excel a function allowing to calculate the largest between two values. Your function should be declared as follows : function pg(a, b).
2. Same question for three values.

EXERCISE 8

Write a "Price including tax" function.

Signature of the function : Public Function MonTTC(pht As Double) As Double

Input : pht (real number)

Output : Price including tax (real number)

Calculation : Price including tax = $pht * 1.2$

EXERCISE 9

Write a "Final capital" function.

Signature of the function : Public Function MonKF(IK As Double, i As Double, duree As Long) As Double

Input : IK (real number), i (real number), duree (real number)

Output : Final capital

Calculation : Final capital = $IK * (1 + i)^{duree}$

EXERCISE 10

Write a function "Price including tax with condition".

Signature of the function : Public Function MonTTCBis(pht As Double, cat As String) As Double

Input : pht(real number), cat(string)

Sortie : pttc (real number)

Calculation :

If (cat = " luxe ")

Then pttc = pht * 1.33

Else pttc = pht * 1.2

EXERCISE 11

Write a function "Vehicle rental-version 1".

Signature of the function :

Public Function MaLocation1(day As Long, km As Double, cat As String) As Double

Input : day(integer), km(real number), cat(string)

Output : Rental price(real number)

Calculation :

If (day > 30)

Then price = 75 * day

Else

If (cat = "luxe")

Then price = 80 * day + 0.2 * km

Else price = 70 * day + 0.15 * km

EXERCISE 12

Write a function "Vehicle rental-version 2".

Signature of the function : Public Function MaLocation2(day As Long, km As Double, fuel As String) As Double

Input : day(integer), km(real number), fuel(string)

Output : Rental price(real number)

Calculation :

1. If (day > 30)

Then price = 80 * day + 0.2 * km

Else price = 75 * day + 0.1 * km

2. If (fuel = "diesel")

Then the price calculated above must be divided by 2.

EXERCISE 13

Write a function "Salary calculation for sales representatives".

Signature of the function : Public Function MonSalaire(ca As Double, status As String) As Double

Input : ca (real number), status (string)

Output : salary (real number)

Calculation :

1. salary = 0.75 * ca

In 2 situations :

(a) status = "junior"

(b) status = "senior" and (ca > 100)

2. In all over situations : salary = 0.25 * ca.