

ALGORITHM

algorithm is a set of mathematical and logical and sequential steps necessary to solve a problem. The algorithm is called by that name relative to the Muslim world Tahqnda original Abu Ja'far Muhammad ibn Musa al-Khwarizmi, who invented in the nineteenth century. Deployed in Latin America and the European languages the word is «algorithm» In the original meaning was limited to the algorithm to only three structures: the sequence and selection and repetition.

- 1 - Sequence: the algorithm is a set of sequential instructions, these instructions may be either simple or of the following two types.
- 2 - Selection: Some problems can not be solved by a simple sequence of instructions, you may need to test some of the conditions and look at the result of the test, if the result is correct track contains a sequential instructions, and if

the wrong track the last track of the various instructions. This method is called the decision or choice.

3 - Repetition: When you solve some of the problems it is necessary to reproduce the same sequence of steps a number of times. This so-called repetition.

And has proved to be no need for additional structures. The use of these three compositions algorithm is easy to understand and discover the errors contained therein and changed.

CHARACTERISTICS OF AN ALGORITHM:

- 1- Algorithms always have a definite starting point and an end point . these points are generally marked with the word like Start, Begin, End , Stop ,etc.
- 2- They consist of finite number of steps.
- 3- They always relate to a specific problem .
- 4- They serve as foundation stone for programming.

5- They are written in easy language.

Example

1- Write the Algorithm to compute the sum, average and product of three numbers ?

1 - start

2 – read value of x,y,z

3 – compute sum (s) as $x+y+z$

4 – compute Average (A) as $s/3$

5 – compute product (p) as $x*y*z$

6 – print the sum, Average, product

7- end

3- Write an algorithm which gets a value ,n, as its input and calculate odd numbers equal or less than n ?

1-start

2-read N

3- $I=1$

4- Print I

5- $I=I+2$

6- IF ($I \leq N$) goto 4

7- End

4- Write an algorithm for calculate and printing Factorial (!) of a given number ?

1- start

2 -- read a number a

3- Let $I=1$

4- Let Sum=1

5 -- Sum=Sum * I

6- $I=I+1$

7- IF I is not $> A$ perform 5,6,7

8- print Sum

9- End

5 - Write an algorithm to calculate the size of the ball, knowing that the
radius = 15 cm ?

1- start

2- let $r=15$

3- let $\pi=3.14$

4- $S=4/3*\pi*r^2$

5- print S

6- End

6 -Write an algorithm to convert the length in feet to centimeter?

- 1- START
- 2 -Input Length_in_ft
- 3 -Length_in_cm = Length_in_ft x 30
- 4 -Print Length_in_cm
- 5 - END

Write an algorithm to find the larger of the three given numbers ?