

**Example 12:**

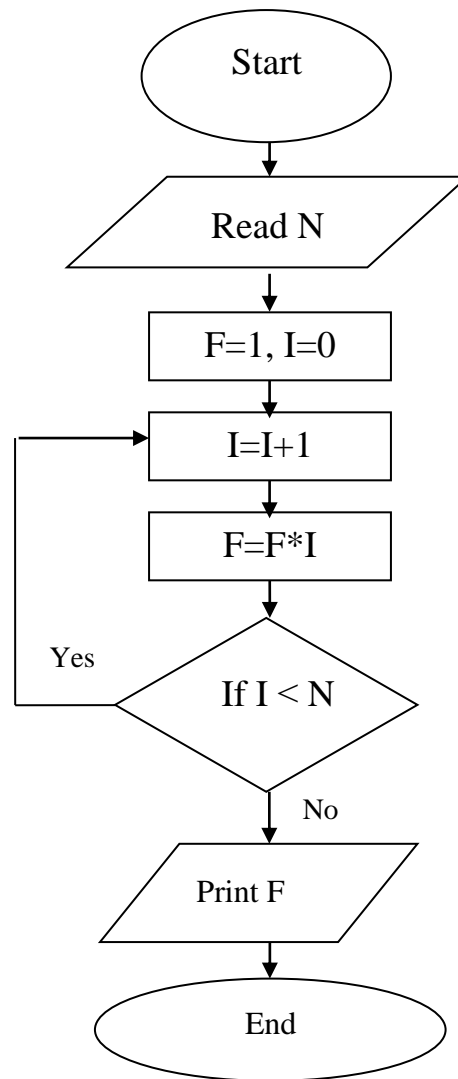
**Write an Algorithm to find the factorial of N where N is any Positive number.**

$$N! = 1*2*3*4*5.....N.$$

Solution:

- 1- Start.
- 2- Read the value of N.
- 3- Let the initial value of the factorial (F) equals to one (F=1).
- 4- Let the initial value of the counter equals to zero (I=0).
- 5- Increase the value of the counter by one (I=I+1).
- 6-F=F\*I
- 7- If the counter (I) is less than N return to step 5.
- 8- Print F.
- 9-End

The flowchart of example 12 is shown below:



**Example 13: Write an Algorithm to evaluate the following equation:**

$$Y = \frac{1}{A} + \frac{1+2}{2A} + \frac{1+2+3}{3A} + \frac{1+2+3+4}{4A} \dots \dots \dots N \text{ Terms}$$

Where: A is a variable.

Solution:

1- Start

2- Read A, N

3-  $Y = 0, I = 0, S = 0$

4-  $I=I+1$

5-  $S=S+I$

6-  $Y=Y + \frac{S}{A*I}$

7- If  $I < N$  go to step 4

8- Print the value of Y

9- End

The flowchart of example 13 is:

