GROUP 32

Assignment #2

You are required to find the factorial of a positive integer, N.

(a) Describe in detail, the steps that you would use to get the job done [20 Marks]

(b) Draw a flowchart to implement your steps [15 Marks]

(c) Test your flowchart with N = 6 and N=8 [5 Marks]

A. The steps that you would use to get the job done

Step 0: Problem well understood.

Step 1: Problem restatement; To determine the factorial of a positive integer N.

Step 2: Background support; Mathematical formulation n!

Step 3: Knowns Vs. Unknowns

Knowns/Inputs: positive integer, N

Unknowns/ Outputs: factorial of a positive integer, fact

Internal: counter, i

Step 4: Bookkeeping

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Name | Type | Validation |
| inputs | N | integer | >= 0 |
| internal | i | integer | >= 0 |
| output | fact | integer | >= 1 |

Step 5: Algorithm/Pseudocode/Flowchart

0. Begin / Start

1. Declare N, i, fact as integer

2. Initialize i = 1, fact = 1

3. Input N

4. Repeat the loop

5. if i <= N

6. fact = fact \* i

7. i = i++

8. else

9. fact = 1

10. End loop

11. End repetition

12. Display fact

13. End

B. Flowchart to implement the steps

Flowgorithm file

C. Testing the flowchart with N = 6 and N = 8

Text file

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