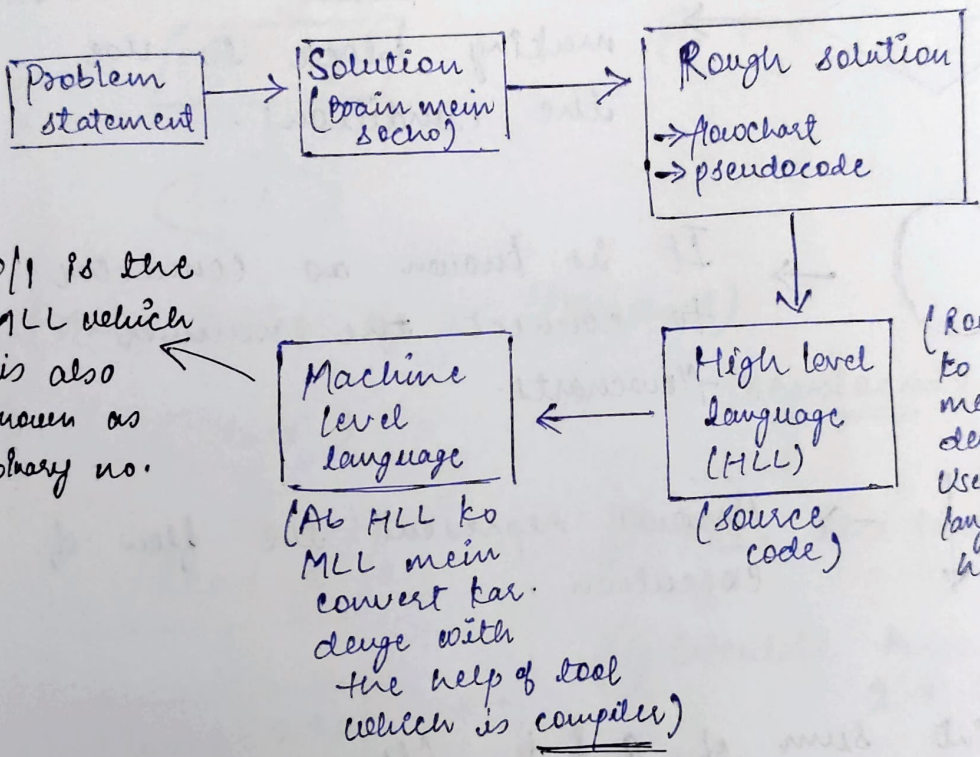
DAY-2 : (Lec-1) 23.08.23

Introduction to programming :-

* **Thought process to approach a problem :-**

(i) Understand the problem
(ii) Input values
(iii) Create logic / find out the algorithm.



* **Flowchart :** A diagramatic representation to express the algorithm.

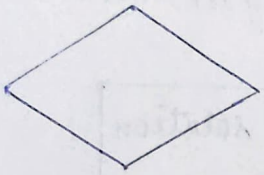
* **Algorithm :** A sequence of steps to solve a particular problem statement.

Flowchart components :

Start/End → It represents the start/end of the algorithm known as terminator.

Input / Output → It is known as I/P / O/P block to read & print the output.

Process block → To calculate, declaration of variable & initialization.

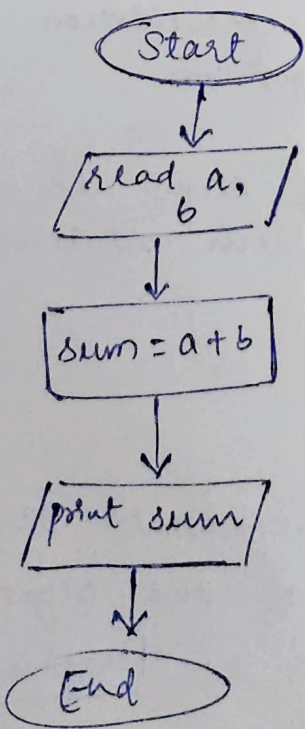
 → It is known as decision making block to use the conditions.

 → It is known as connector to connect the number flowcharts.

 → Arrows represent the flow of execution.

Q: Print sum of a & b (flowchart)

Soln

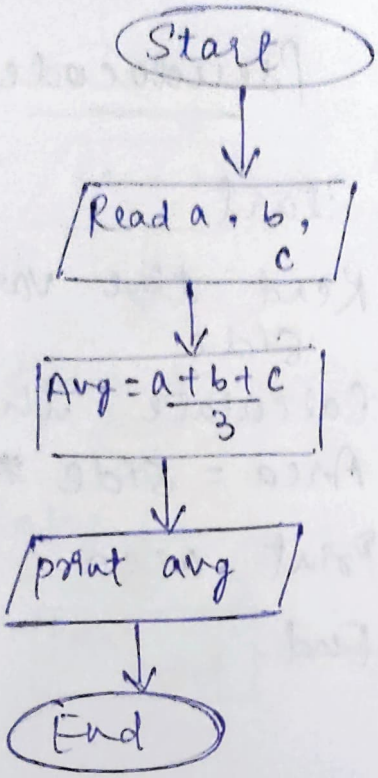


Pseudocode

(i) Start
(ii) Read / take input
(iii) Calculate sum = a + b
(iv) Print sum
(v) End

Q. Print of a, b, c average (flowchart)

Soln:

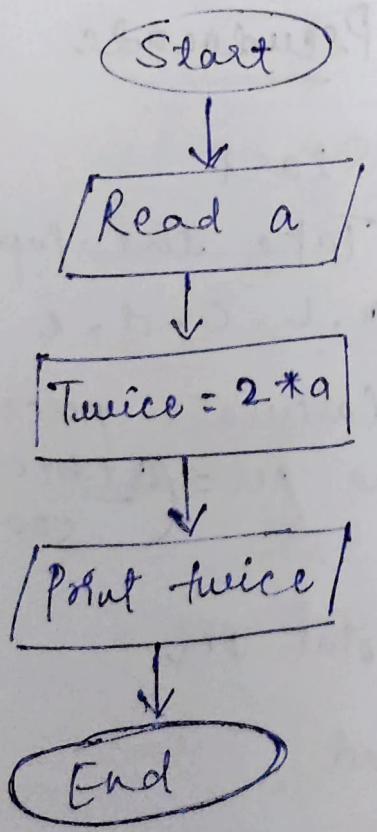


Pseudocode

(i) Start
(ii) Read the variable a, b, c
(iii) Calculate the avg as = $\frac{a+b+c}{3}$
(iv) Print the avg
(v) End

Q. Print twice of a. (flowchart)

Soln:



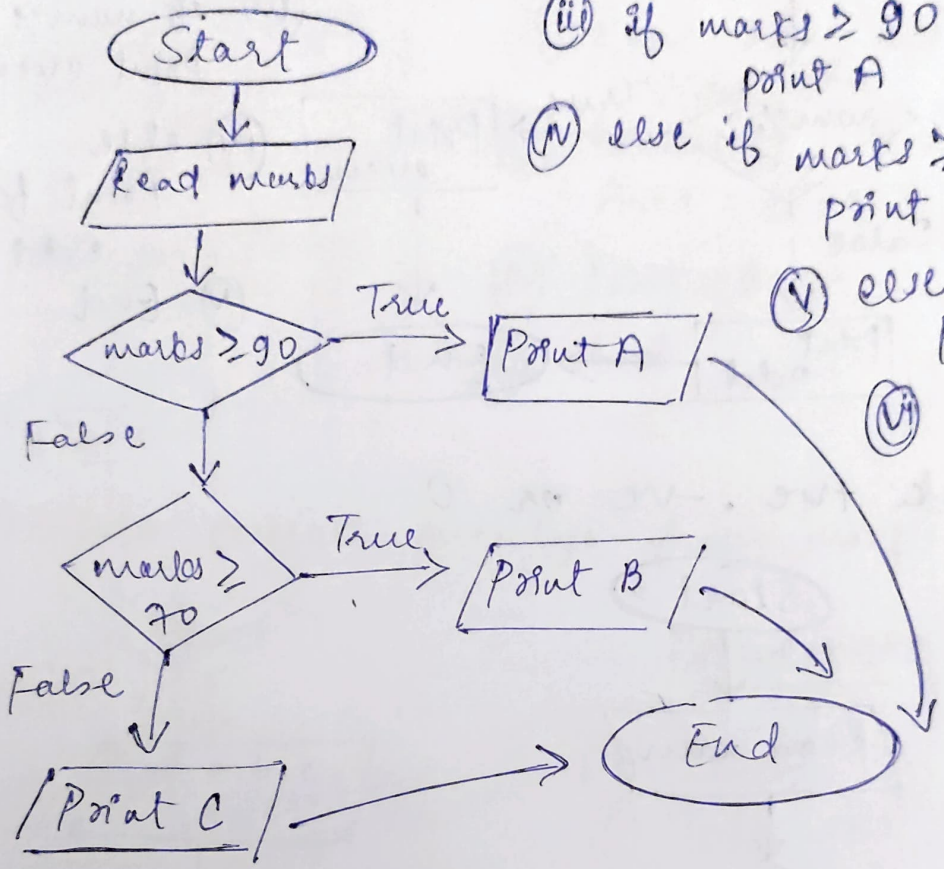
Pseudocode

(i) Start
(ii) Read the input a
(iii) Calculate twice = 2 * a
(iv) Print the twice
(v) End

Q. Student & Grade flowchart

A ≥ 90
B ≥ 70
C ≤ 50

Soln

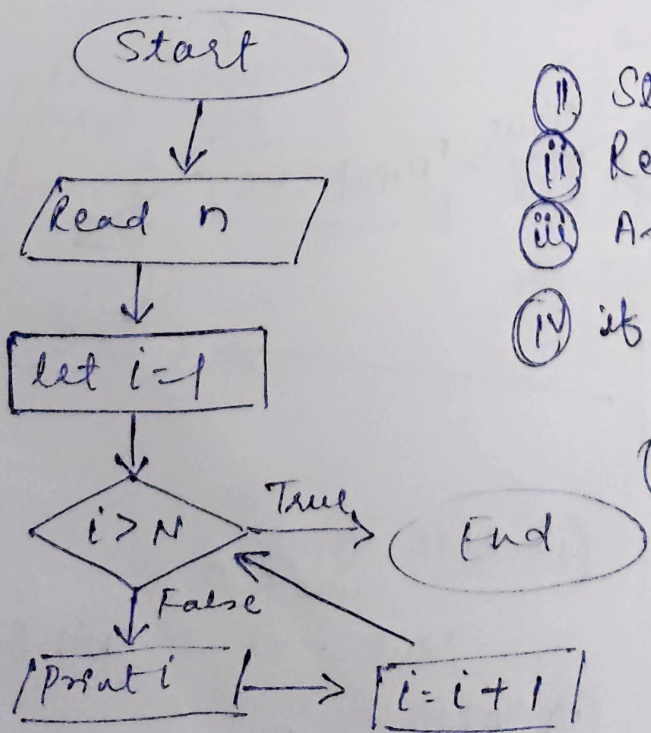


Pseudocode

(i) Start
(ii) Read the variable marks
(iii) if marks ≥ 90 print A
(iv) else if marks ≥ 70 print B
(v) else print C
(vi) End

Q. Print 1 to N (flowchart)

Soln

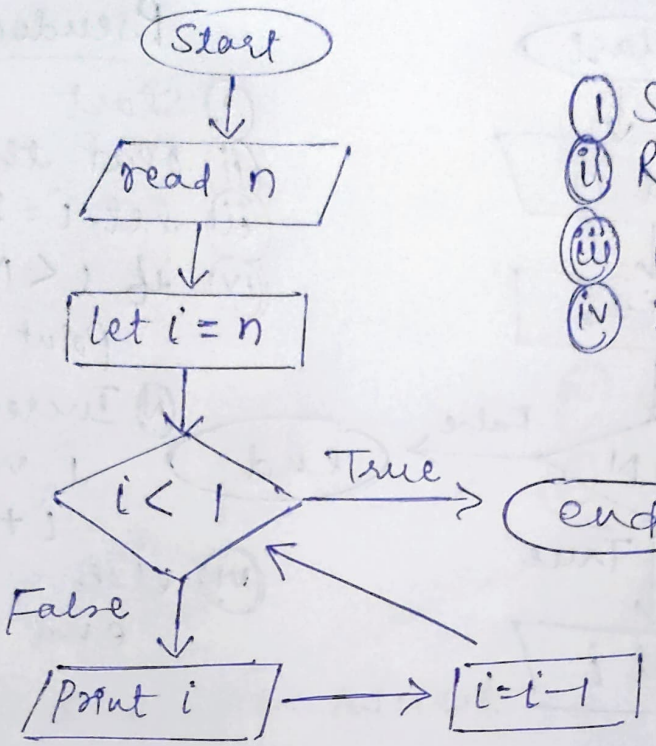


Pseudocode

(i) Start
(ii) Read the value n
(iii) Assum the value i = 1
(iv) if i < N Print i
(v) Else end

Q: Print counting N to 1 (flowchart)

Soln

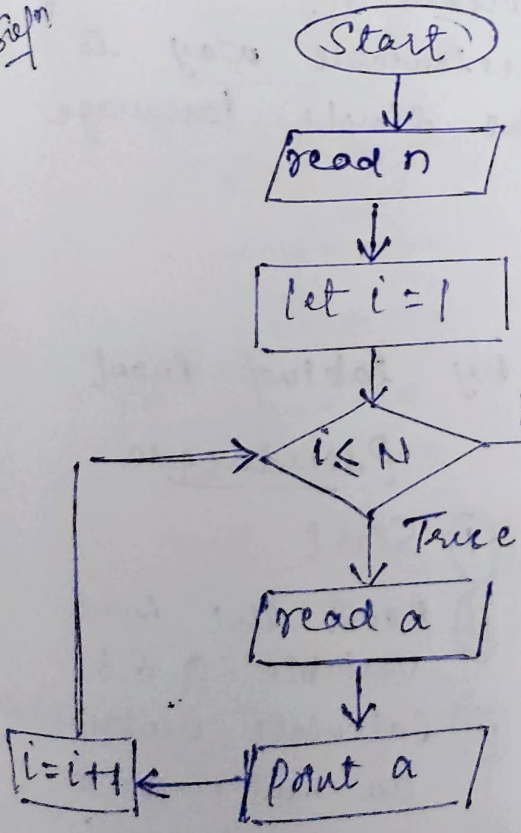


Pseudocode

(i) Start
(ii) Read the n variable
(iii) let i = n
(iv) if i < 1
Print i
(v) Decrement the i value as i = i - 1
(vi) else
End

Q: Multiply N from user.

Soln

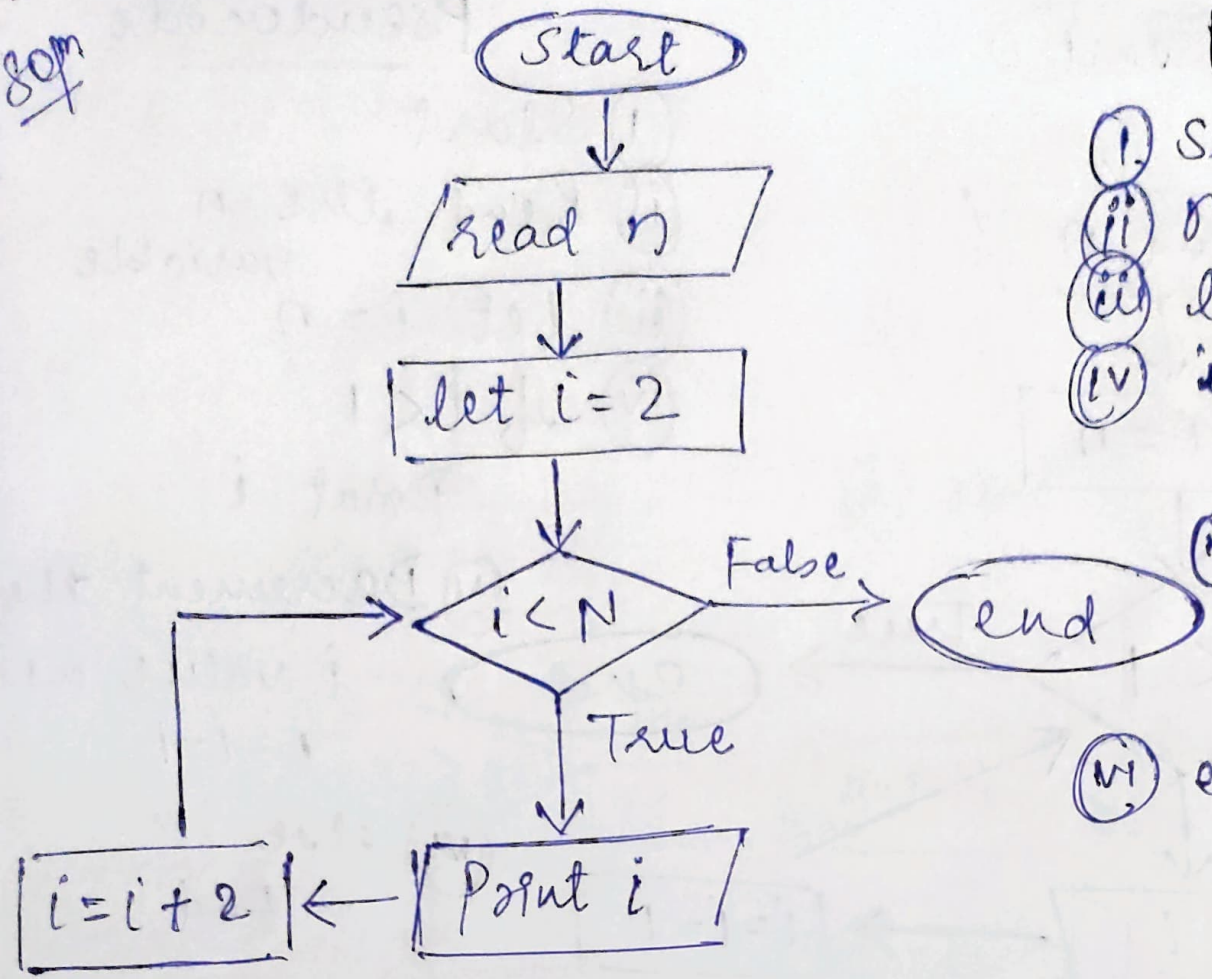


Pseudocode

(i) Start
(ii) Read n value
(iii) Assume i = 1
(iv) if i ≤ N
(v) read a
(vi) Print a
(vii) Increment the i value as i+1
(viii) else
end

Q: Print 1 to N . but only even number

Soln



Pseudocode

(i) Start
(ii) read the n
(iii) let i = 2
(iv) if i < N
Print i
(v) Increment th
i value as
i + 2
(vi) else
end

(*) **Pseudocode:** It means 'fake code'. It does not follow any rules of code. It just a understandable way to write the code in the simple language