

ALGORITHMS and FLOWCHARTS

Assignment :-

Q1 = Define algorithm. explain its importance in problem solving with one simple example.

Algorithm :-

Step by step solution of problems by computer in sequence is called algorithm.

Importance :-

It is very important in problem solving like in c++ programming we need algorithm to solve a program sequentially if we don't put algorithm the program may not run perfectly or the problem may not solve.

Example:-

I will make a simple algorithm for example :-

Print a your name and age in algorithm :-

Step 1 :- Start

Step 2 :- Print "Muhammad Salman"

Step 3 :- Then print "Age : 18"

Step 4 :- End



Q2 = Define Flowchart. Explain its advantages in representing algorithms.

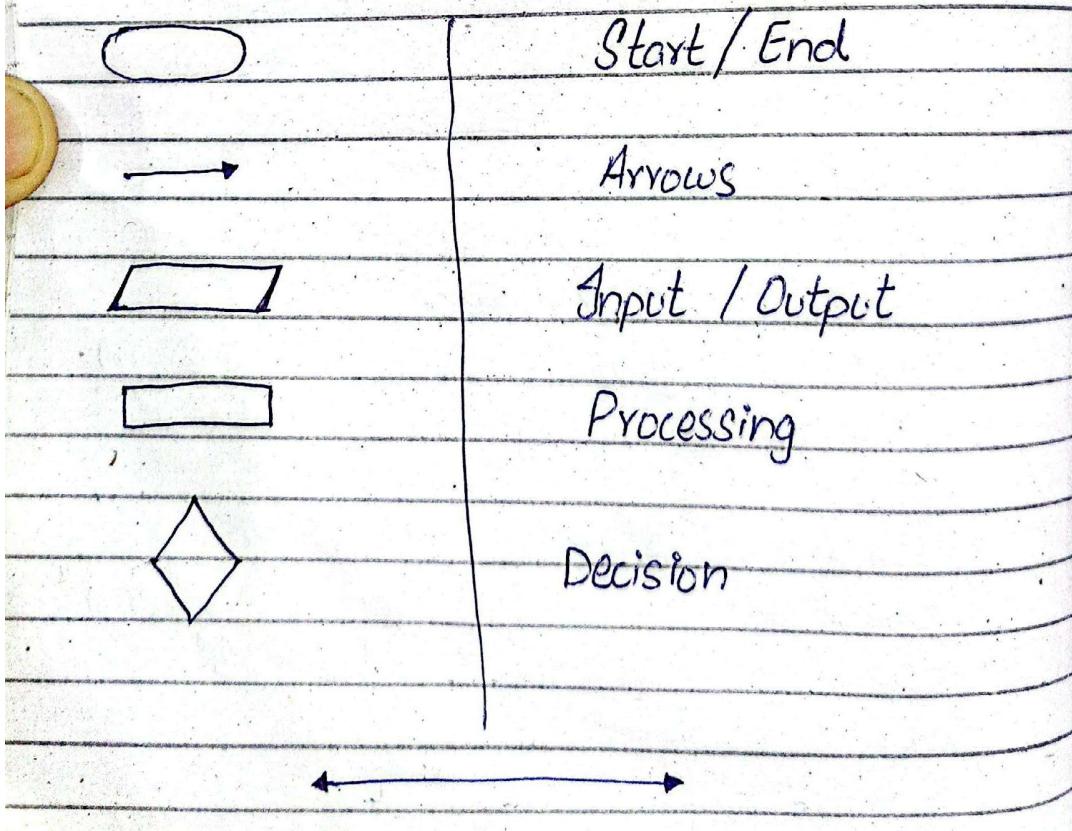
Flowchart :-

It is a diagrammatical/graphical representation of algorithm means solving problems step by step but it has rules and symbols.

Advantage :-

- It makes logic clear.
- Very useful in coding.
- Easy in communication.

Symbols :-

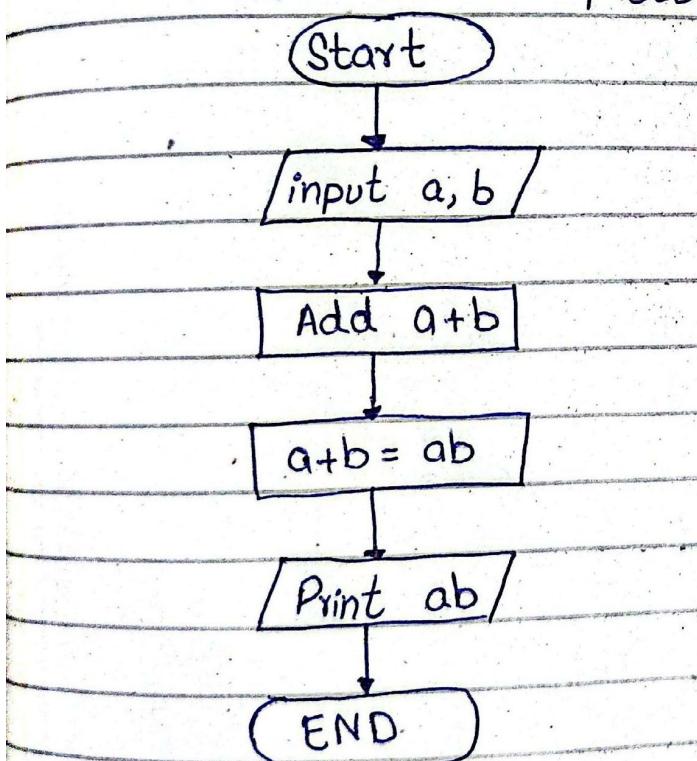


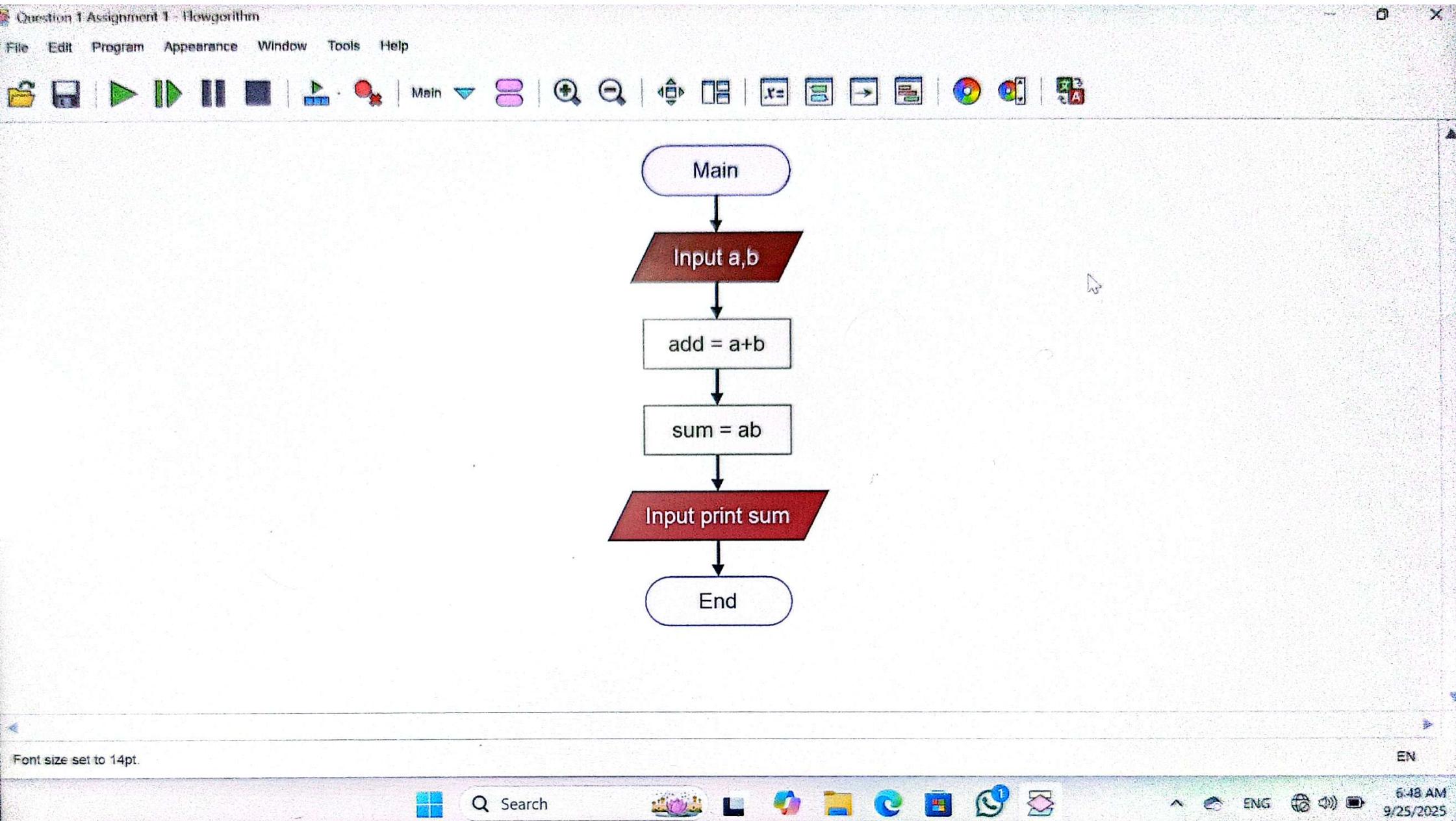
Q3= Write an algorithm and draw a flowchart to calculate the sum of two numbers.

Algorithm.

- Step 1 :- Start
- Step 2 :- Input a , b
- Step 3 :- Add of a+b
- Step 4 :- Sum of a+b = ab
- Step 5 :- Print ab . or print sum
- Step 6 :- End

Flow chart





Q4 : Write an algorithm and draw a flowchart that :

Takes the marks of a student as input . If marks are 40 or more, it displays "Pass" or otherwise, it displays "Fail"

ALGORITHM

Step 1 := Start

Step 2 := Input 64

Step 3 := If $64 > 40$, goto step 4, else, goto step 5.

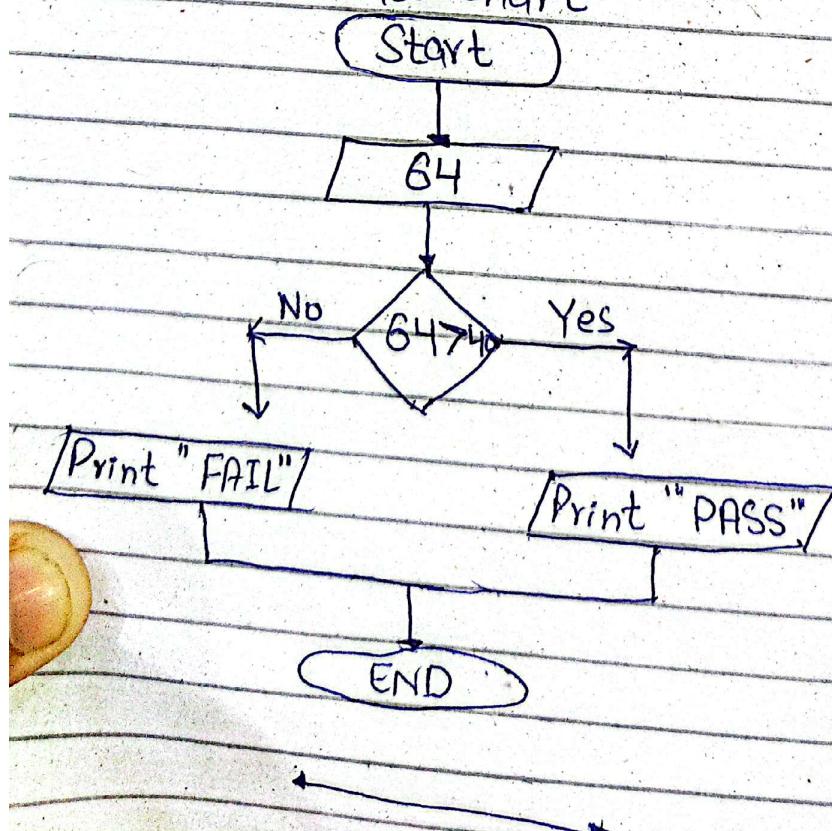
Step 4 := Print "PASS", goto step 7.

Step 5 := If $64 < 40$, ~~goto 6~~

Step 6 := Print "FAIL".

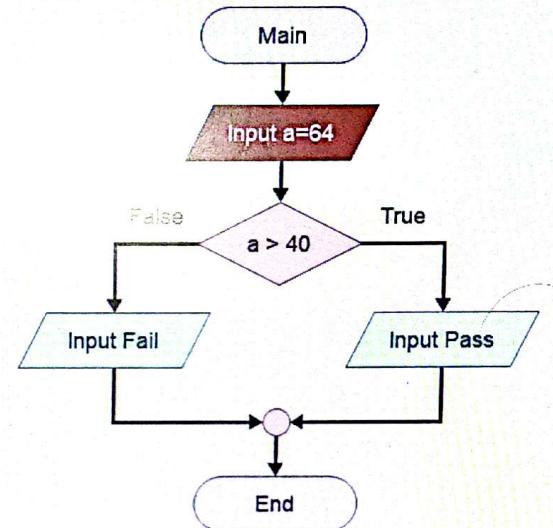
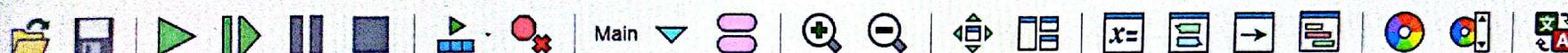
Step 7 := End.

Flowchart



Question 2 Assignment 2 - Flowgorithm

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Q5:- Write an algorithm and draw a flowchart of first 50 natural numbers?

ALGORITHM

- Step 1 :- Start
- Step 2 :- set $n = 50$
- Step 3 :- use formula $\text{sum} = n \times (n+1) \div 2$
- Step 4 :- Print Sum
- Step 5 :- End

FLOWCHART

