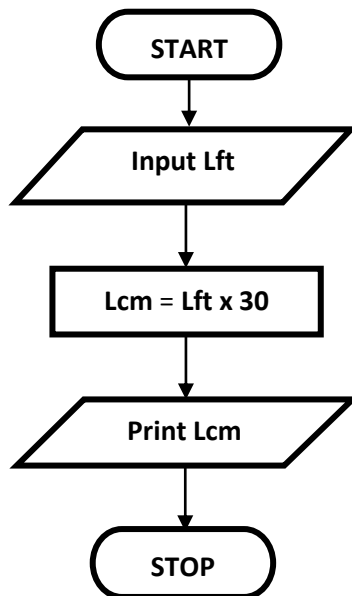


Flowcharting Examples

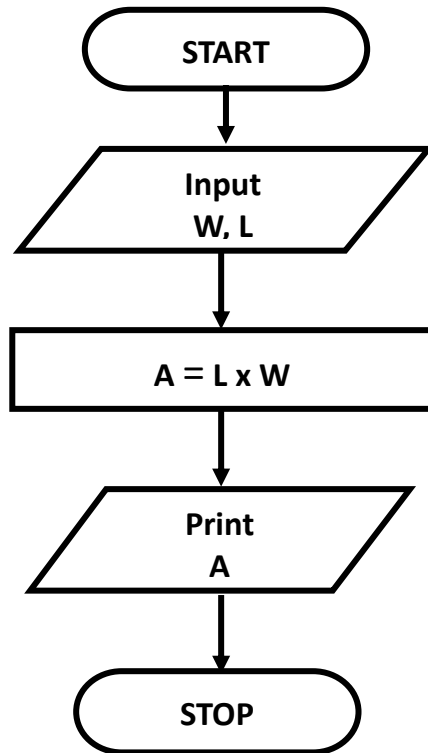
Example 1: Draw a flowchart to convert the length in feet to centimeter.

Solution:



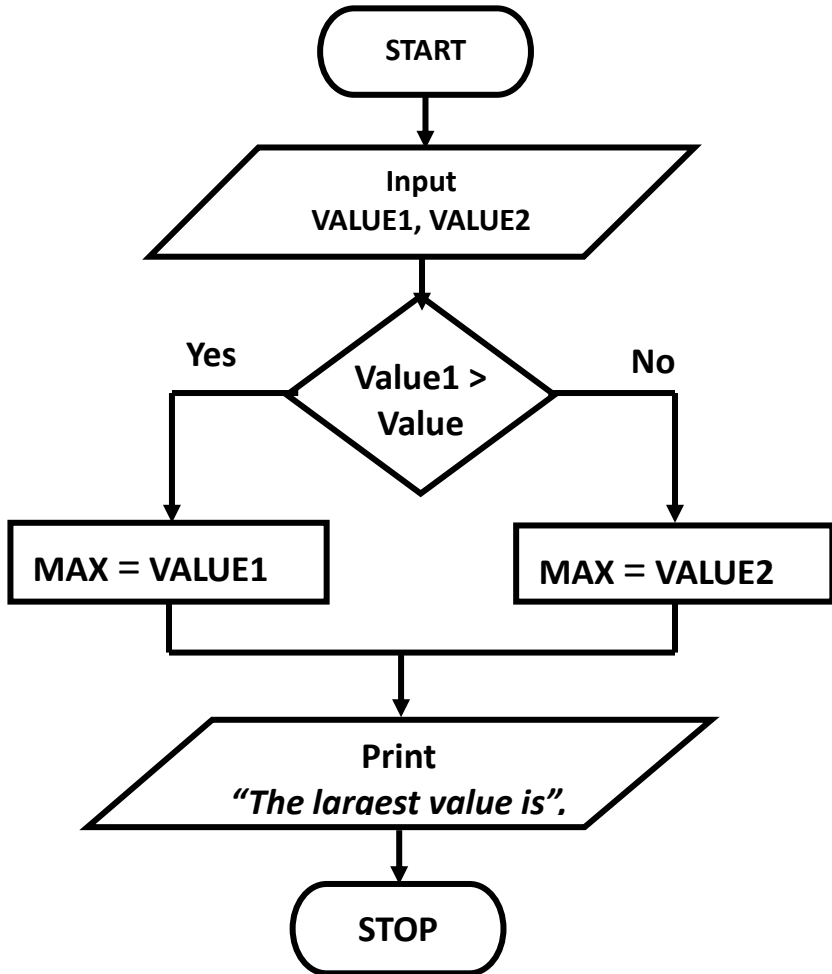
Example 2: Draw a flowchart to read the two sides of a rectangle and calculate its area.

Solution:



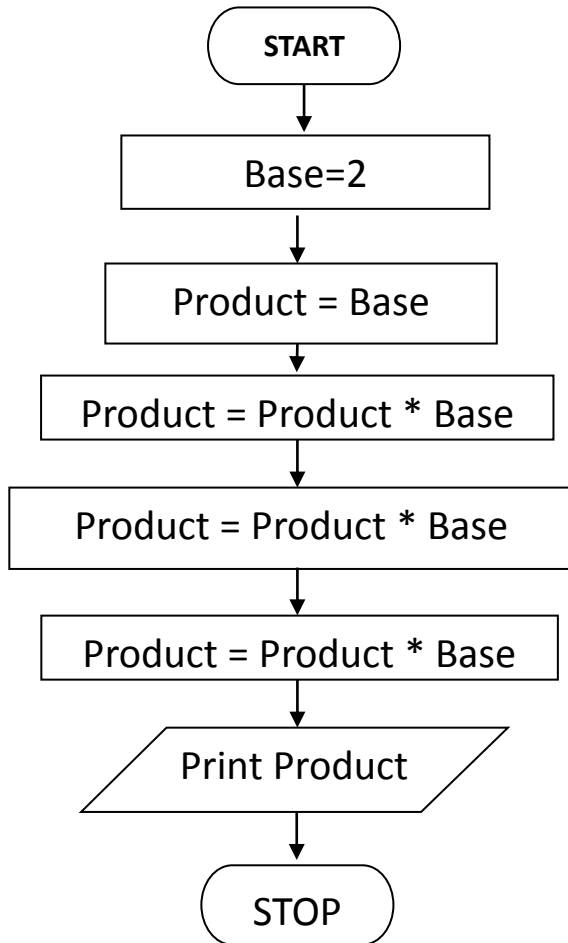
Example 3: Draw a flowchart to reads two values, determines the largest value and prints the largest value with an identifying message.

Solution:



Example 4: Write an algorithm and draw a flowchart to calculate 2^4 .

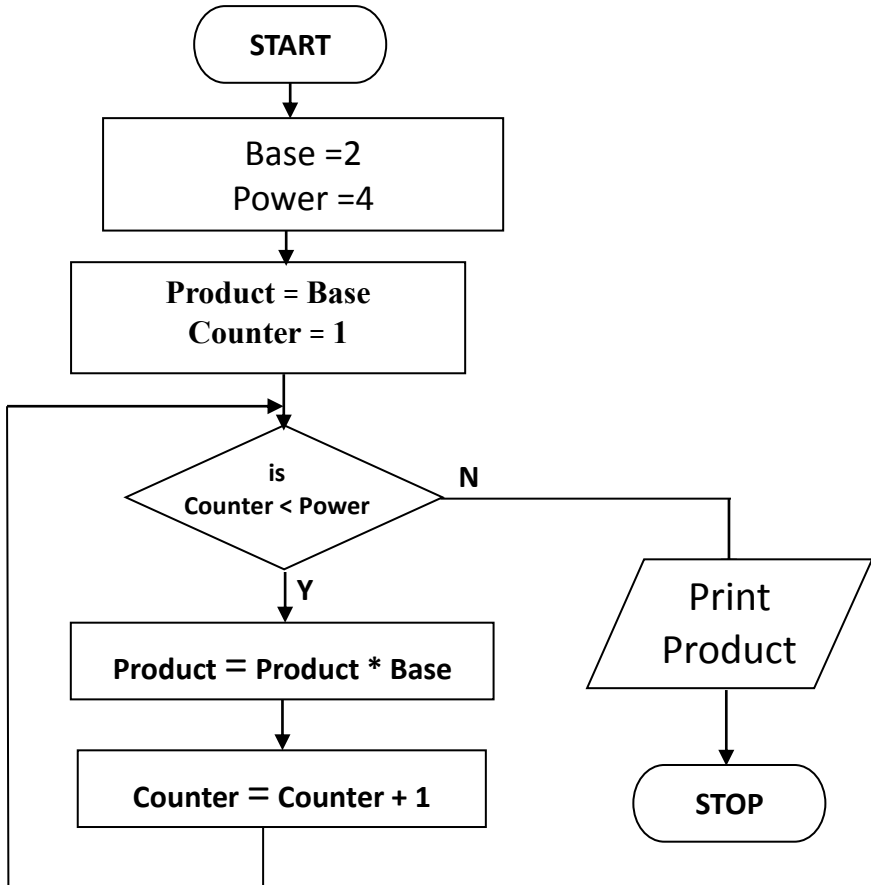
Flowchart:



This program can be generalized and solved using the loop as in the following example

Example 5: Write an algorithm and draw a flowchart to calculate 2^4 using a loop approach? Verify your result by a *trace table*.

Flowchart:

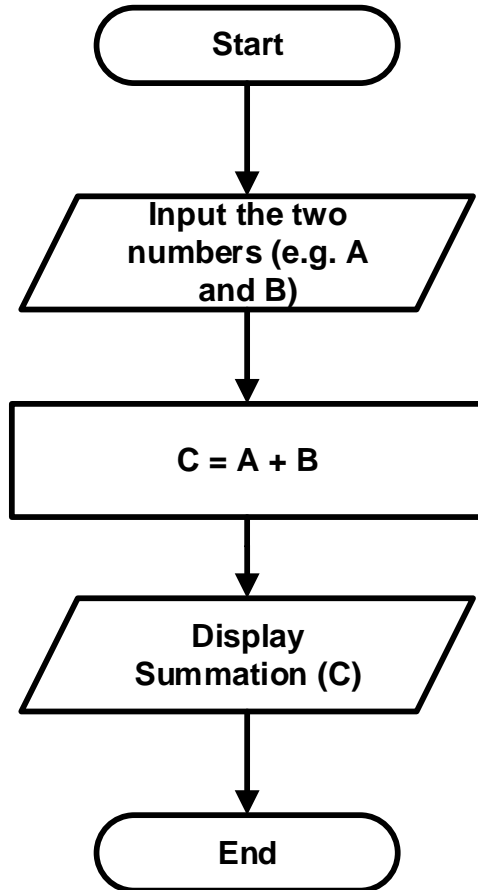


Trace table:-

	BASE	POWER	PRODUCT	COUNTER	COUNTER < POWER	
STEP 1:	2	?	?	?	?	Step 1: Base = 2
STEP 2:	2	4	?	?	?	Step 2: Power = 4
STEP 3:	2	4	2	?	?	Step 3: Product = Base
STEP 4:	2	4	2	1	T	Step 4: Counter = 1
STEP 5:	2	4	2	1	T	While Counter < Power
STEP 6:	2	4	2x2=4	1	T	Repeat Step 5 through step 7
STEP 7:	2	4	4	1+1=2	T	
STEP 5:	2	4	4	2	T	Step 6: Product = Product * Base
STEP 6:	2	4	4x2=8	2	T	Step 7: Counter = Counter +1
STEP 7:	2	4	8	2+1=3	T	Step 8: Print Product
STEP 5:	2	4	8	3	T	
STEP 6:	2	4	8x2=16	3	T	
STEP 7:	2	4	16	3+1=4	F	
STEP 5:	2	4	16	4	F	
STEP 8:	print 16 .					

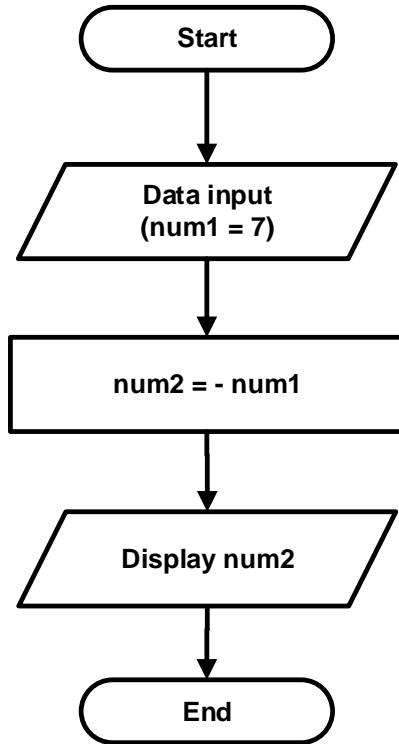
Example 4-1: Draw a flowchart to add two numbers entered by user.

Solution:



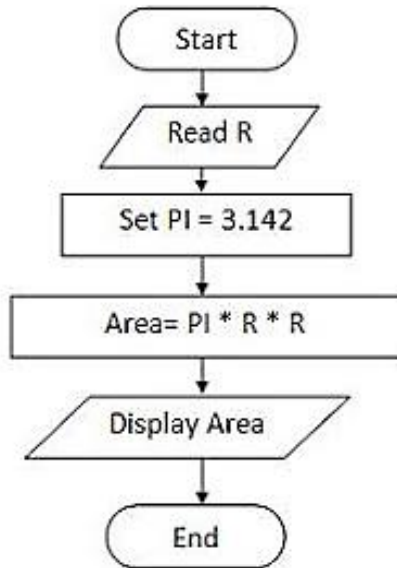
Example 4-2: Draw a flowchart to read a variable $\text{num1} = 7$ and store the negative value of num1 in another variable num2 .

Solution:



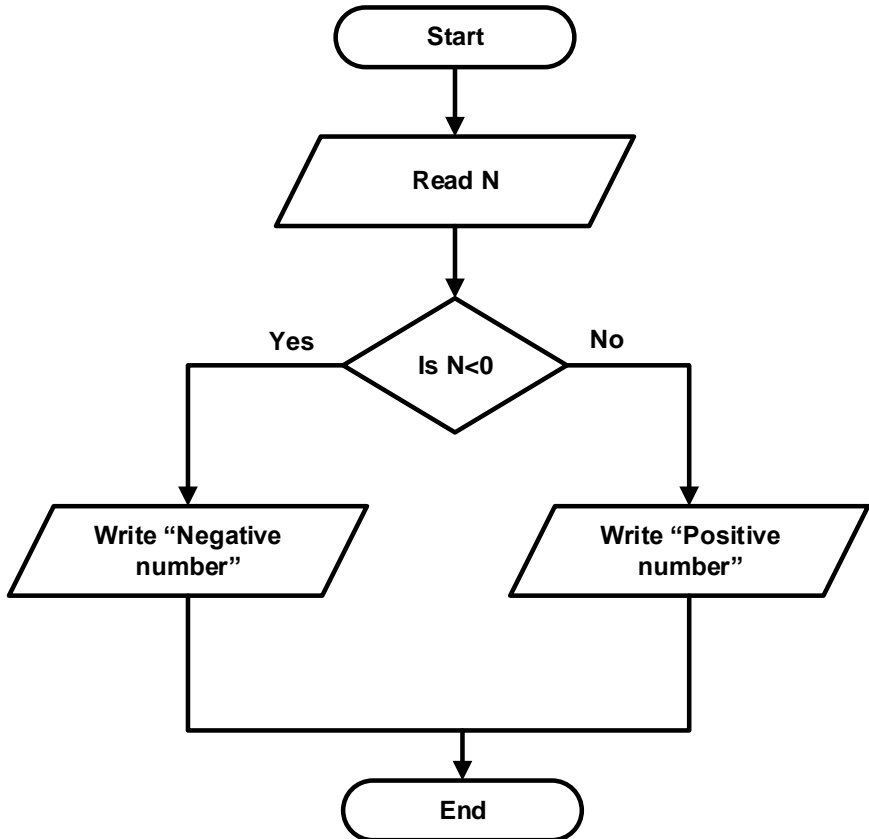
Example 4-3: Draw a flowchart to compute the area of a circle of Radius R.

Solution:



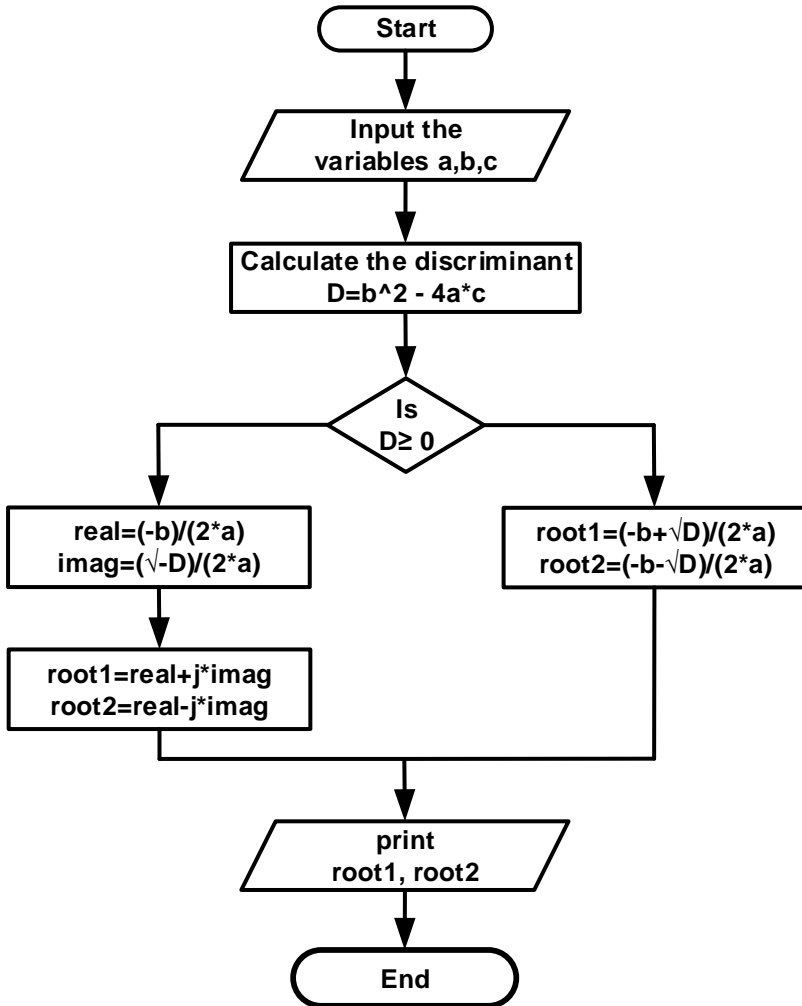
Example 4-4: Draw a flowchart to read a number and identify either the number is positive or negative.

Solution:



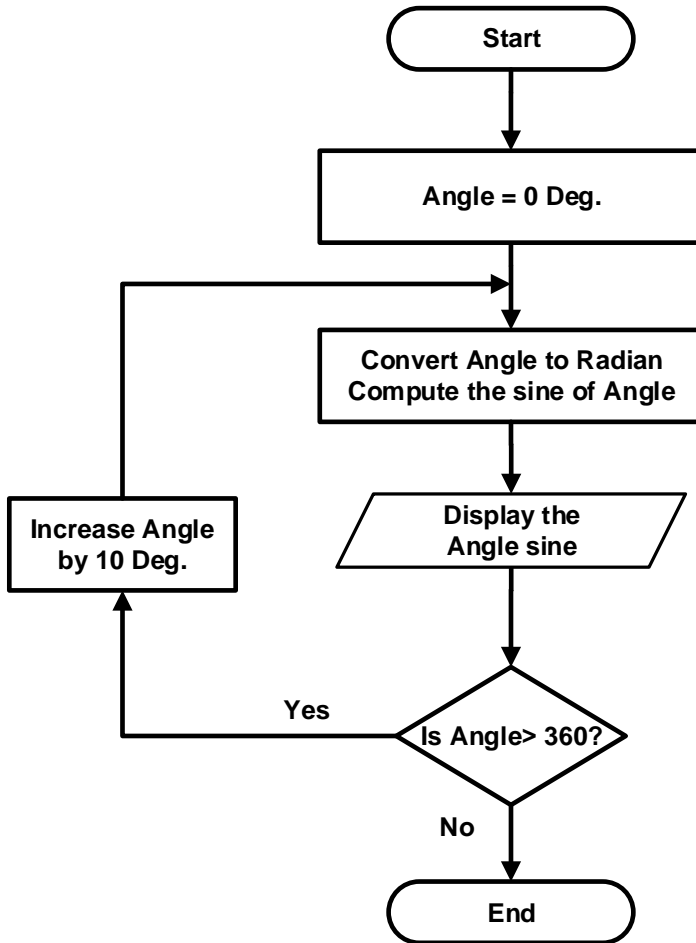
Example 4-5: Draw a flowchart to find all the roots of a quadratic equation $ax^2+bx+c=0$.

Solution:



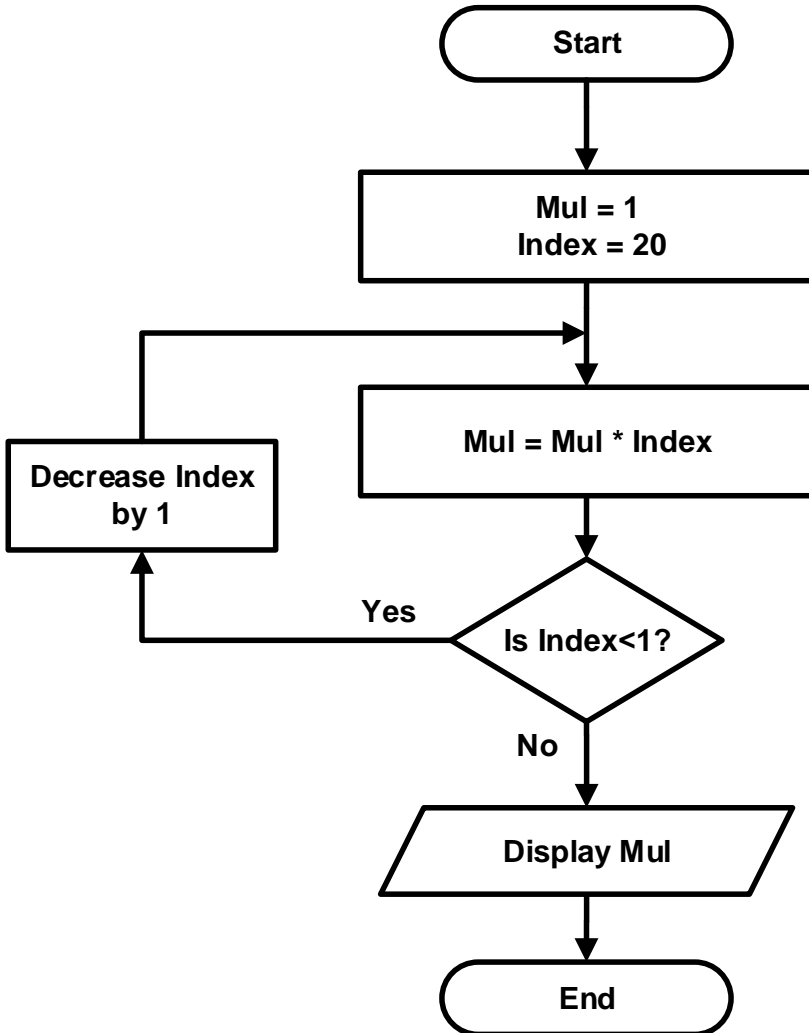
Example 4-6: Draw a flowchart to obtain the sine of angles from 0 to 360° with a step of 10°.

Solution:



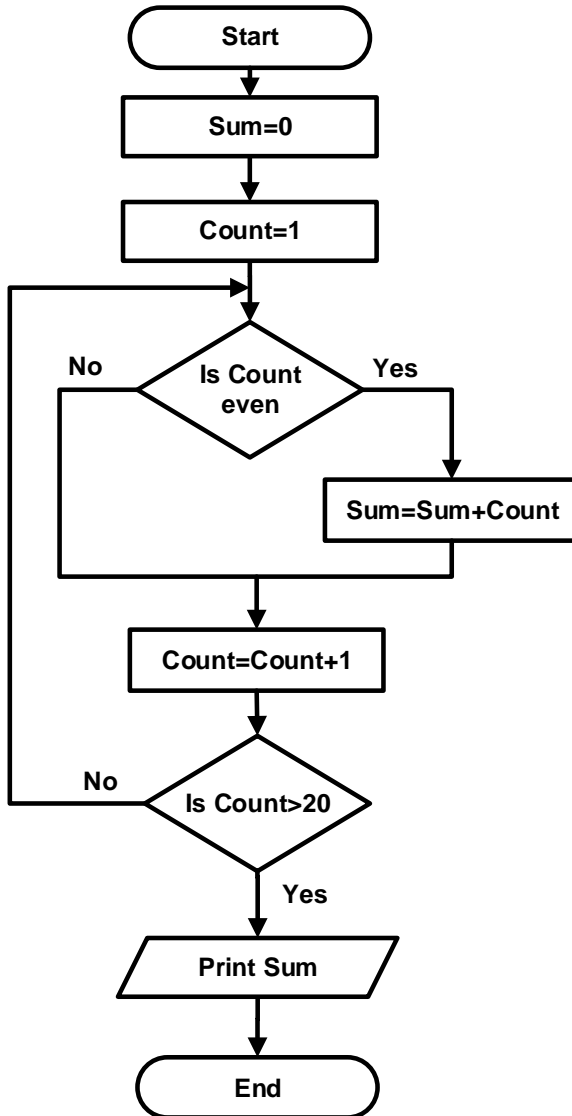
Example 4-7: Draw a flowchart to obtain to obtain the factorial of 20.

Solution:



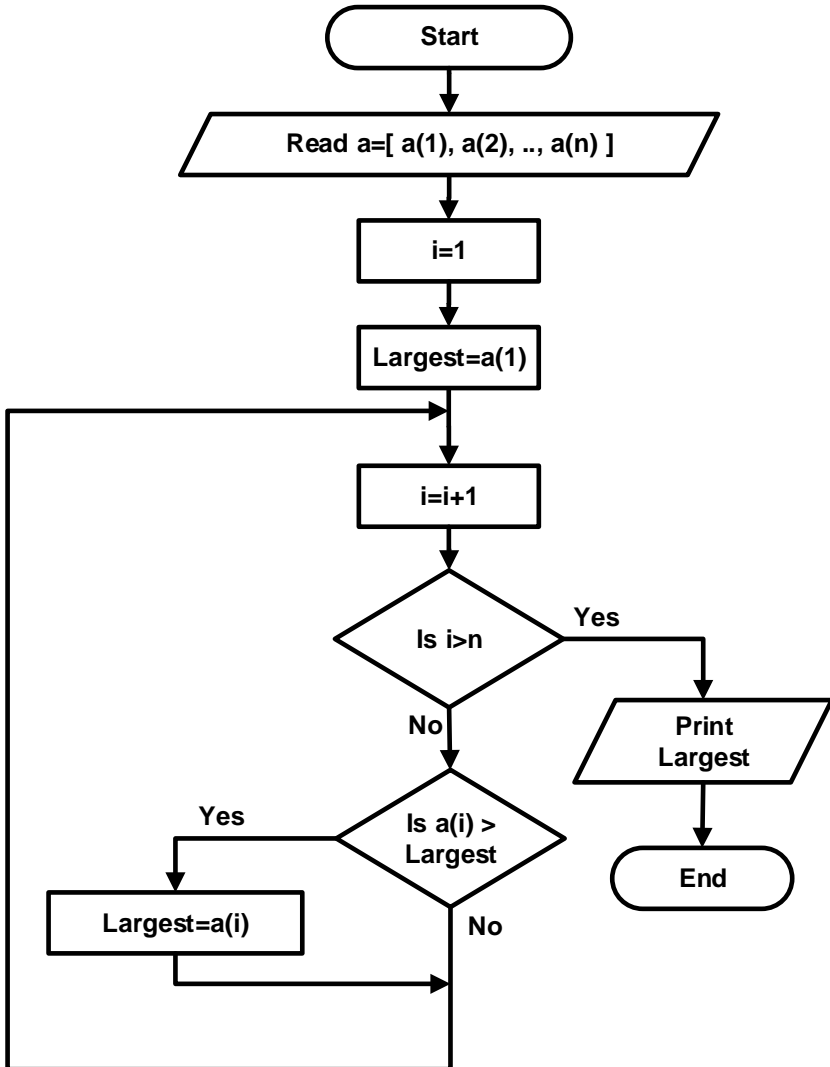
Example 4-8: Draw a flowchart to add even numbers from 0 to 20

Solution:



Example 4-9: Draw a flowchart to find the largest number in a list of numbers.

Solution:

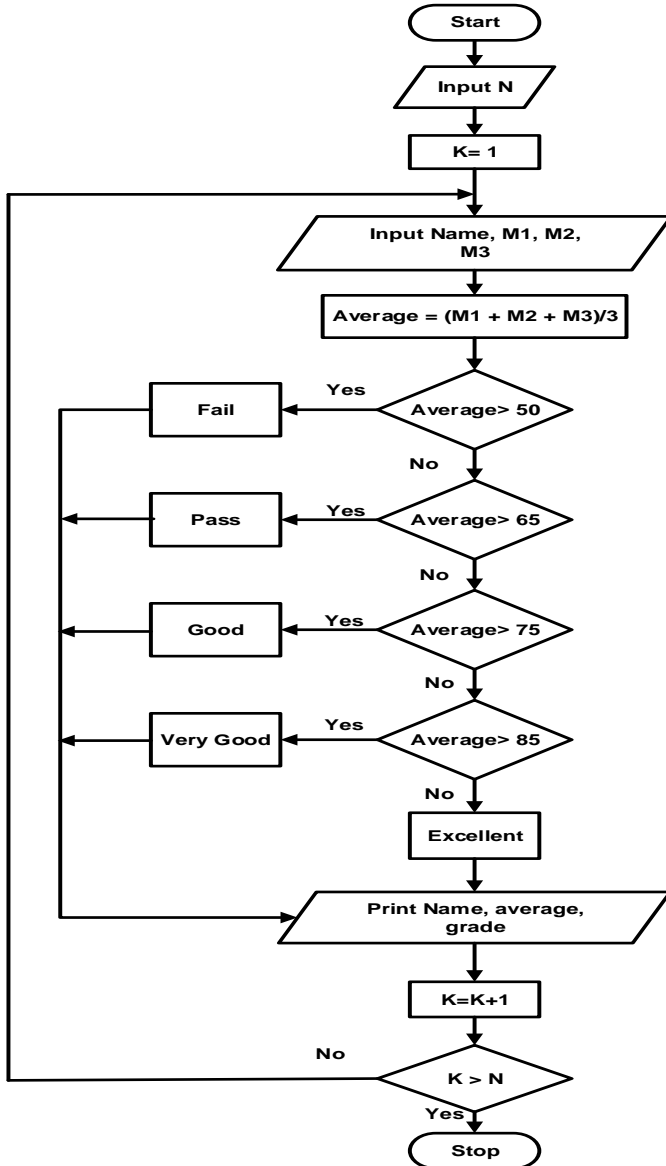


Example 4-10: Draw a flowchart to enter the name of N students and three marks for each student and print the student name, average mark, and grade.

Mark	Grade
≥ 85	Excellent
$\geq 75 < 85$	Very Good
$\geq 65 < 75$	Good
$\geq 50 < 65$	Pass
< 50	Fail

Solution:

Flowcharting Examples



Example 4-11: Draw a flowchart to accept N numbers and get the summation of negative, the summation of positive numbers and the number in each group.

Flowchart:

