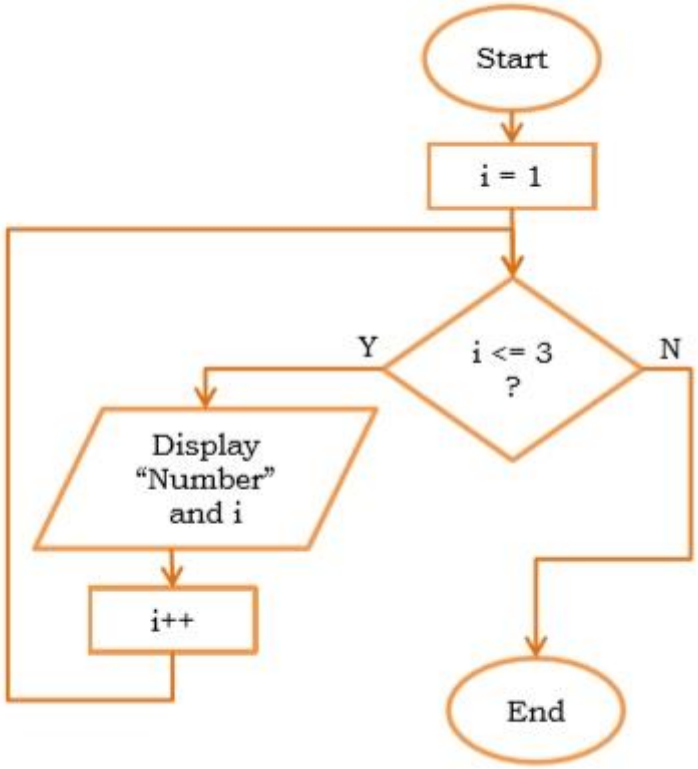
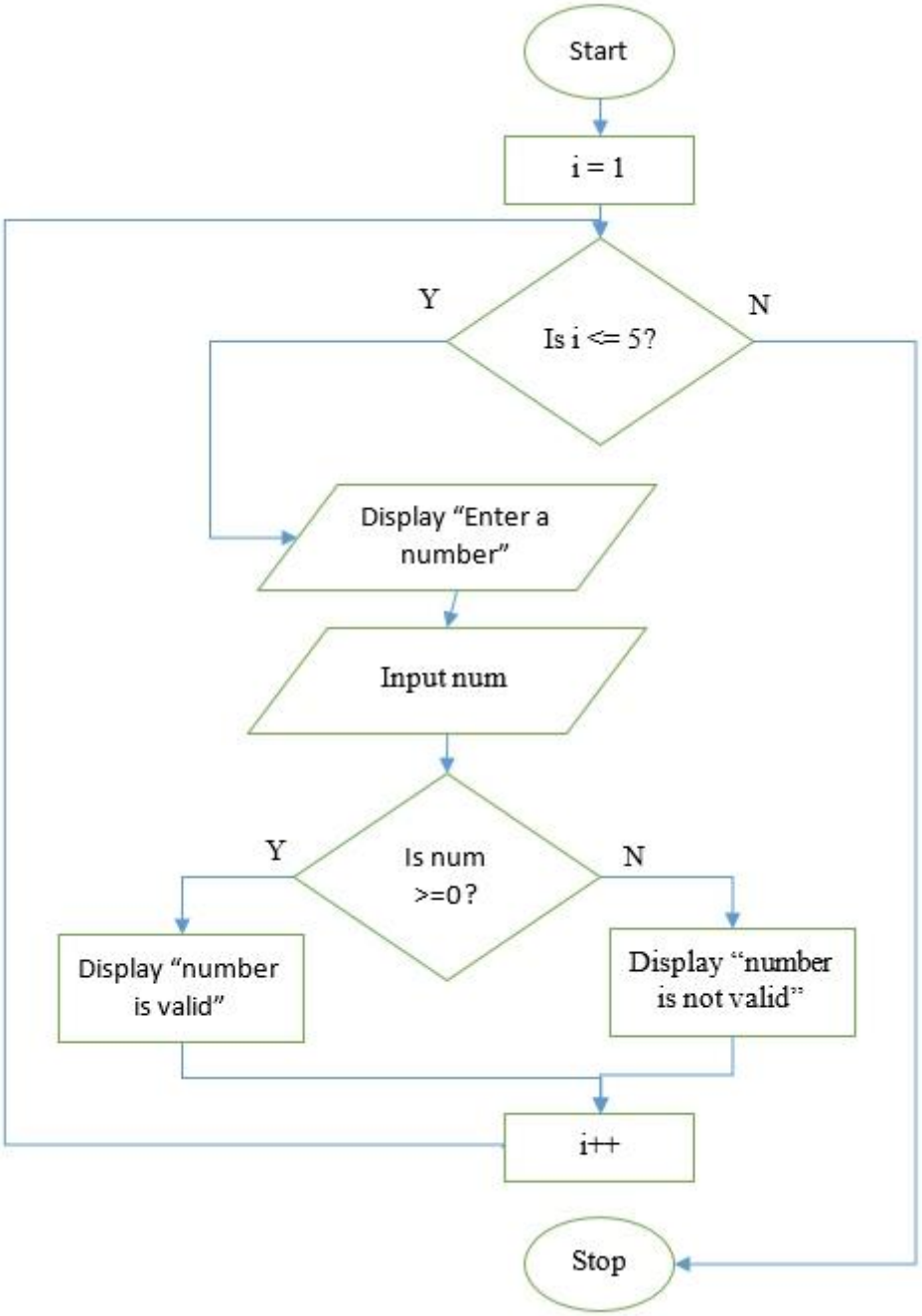
Exercise on For Loops and Flowcharts

1. Write a program that implements the following flowchart:



2. Write a program that displays the values 10, 11, 12 … 20.
3. Write a program that displays the values 2, 4, 6 … 20
4. A program is required to display a table of values 10, 20, 30 … 100 (representing degrees Centigrade) and the equivalent temperature in Fahrenheit. The formula to convert Centigrade to Fahrenheit is $F = C(9/5) + 32$.
    a. Draw a flowchart for such a program.
    b. Code the program.
5. Write a program that asks the user to input 5 numbers. The program adds their total and displays it.
6. Write a program that asks the user to input 10 numbers. The program counts how many of these numbers are greater than zero.

7. Write a program that implements the following flowchart:



8. Write a program that, given N (a whole number), it calculates 1+2+3+4+…+N.

9. Write a program that, given N (a whole number), it calculates N! (i.e. N factorial = 1x2x3x4…xN for example 5! = 1x2x3x4x5).

10. Write a program that, given N (a whole number) it will calculate 2^N.

11. These two questions require nested ifs i.e. an if statement inside another if statement:

a. Write a program that, given N and M (both whole numbers), will draw a rectangle made of * e.g. if N=3 and M=5 the following rectangle will be shown:

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b. Write a program that given N (a whole number) a right-angled triangle is drawn as shown (the given triangle has N=4).

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