



# Programming In C++

Loop in flowchart

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# Objectives

- 1. Learning loop concept in the programming**
- 2. Learning how to design a loop in flowcharts**



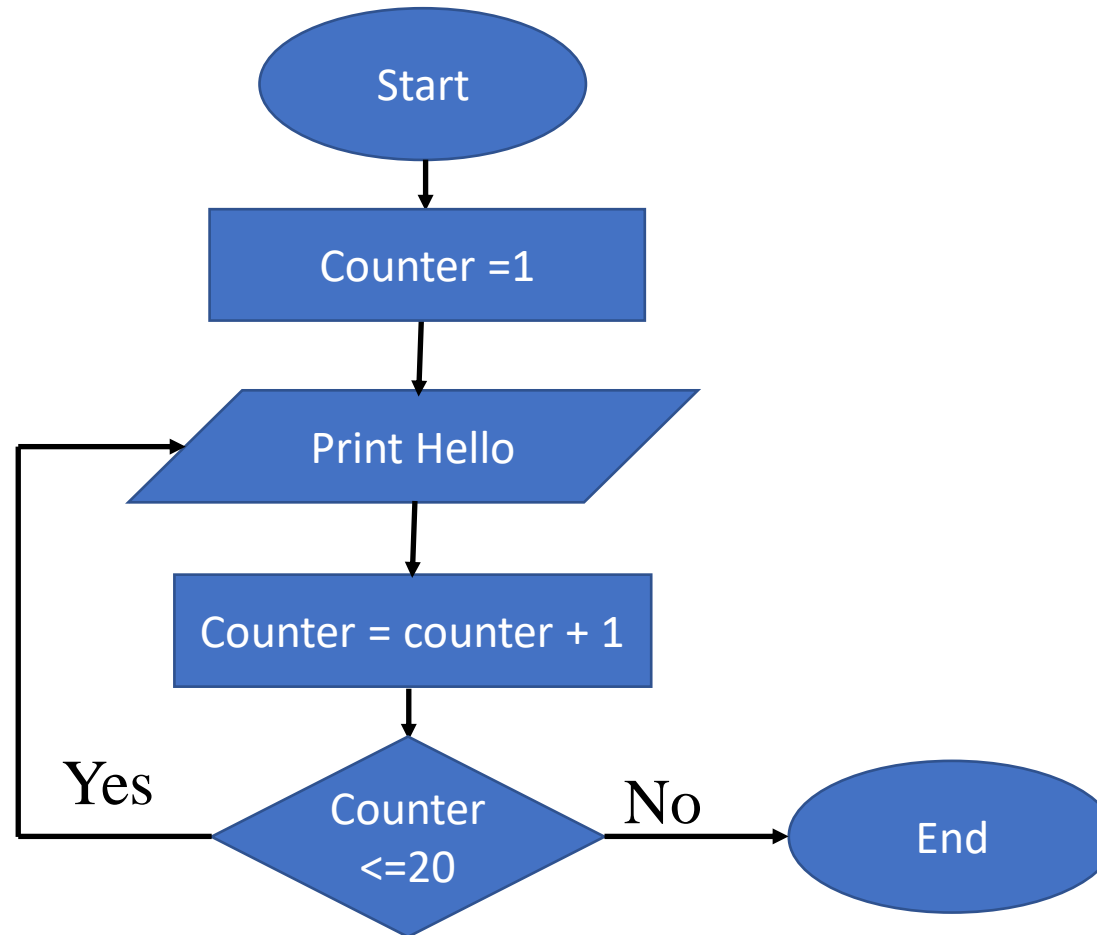
# Loop definition

- Sequence of instructions that is continually repeated until a certain condition is reached.
- If you a task to write a certain statement 50 times, It's illogical to write this statement in 50 lines. In this case, we can use loop concept to do such task.
- Loop needs:
  - 1- counter with initial value.
  - 2- number of repetitions
  - 3- condition to break the loop
  - 4- increment or decrement the counter



# Loop Examples

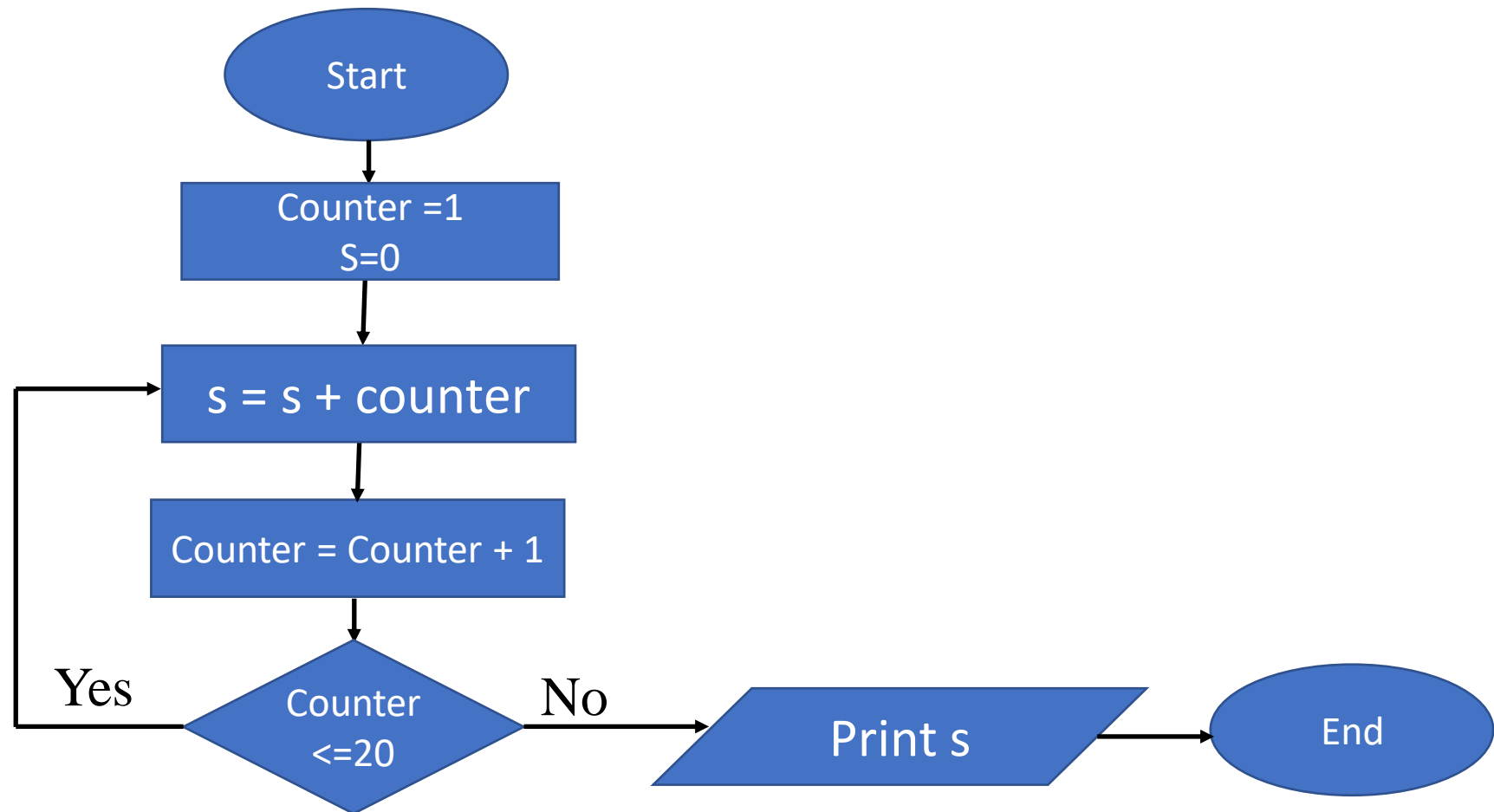
Ex1: draw a flowchart to print Hello 20 times.





# Loop Examples

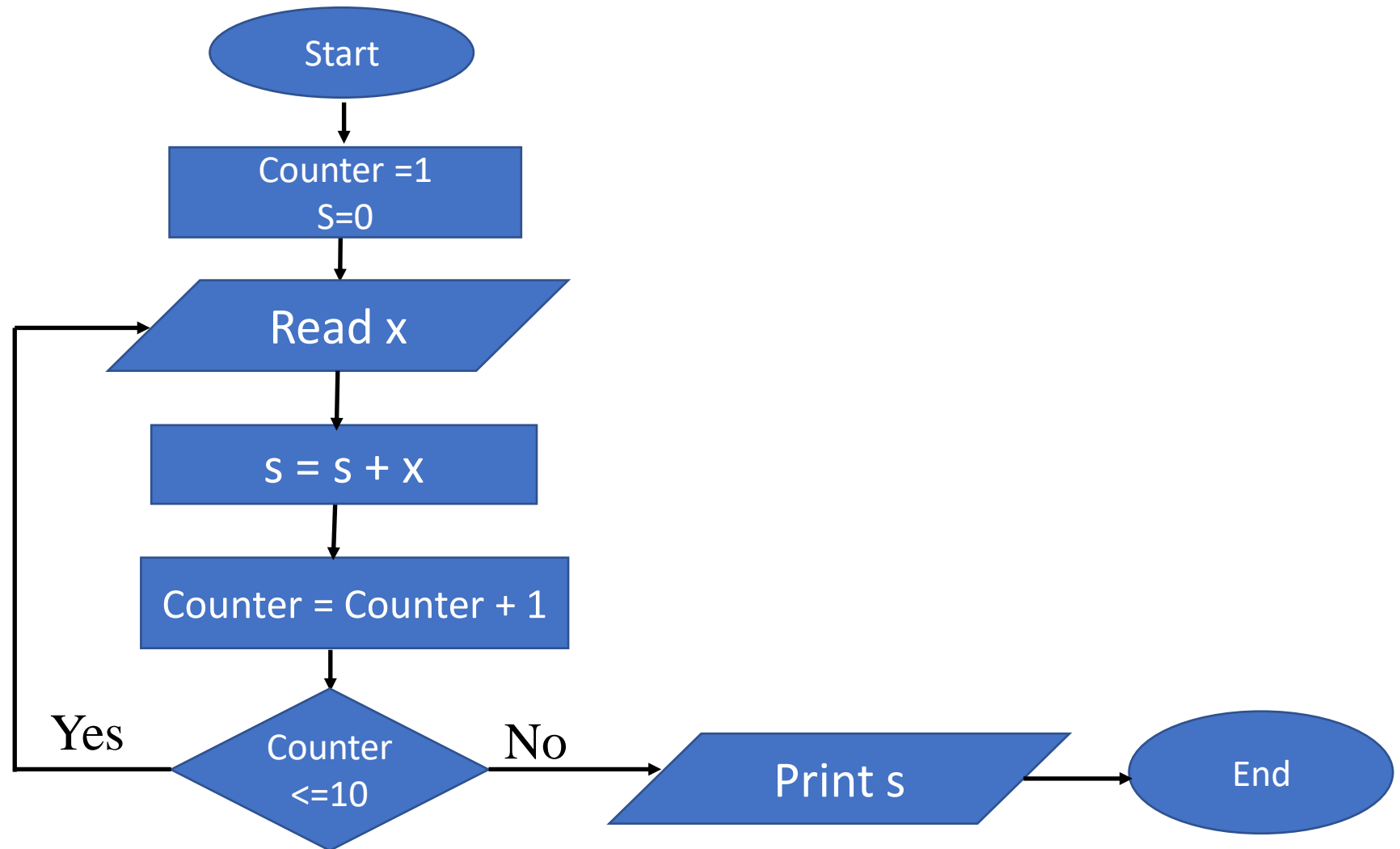
Ex1: draw a flowchart to find the summation of the numbers 1-20.





# Loop Examples

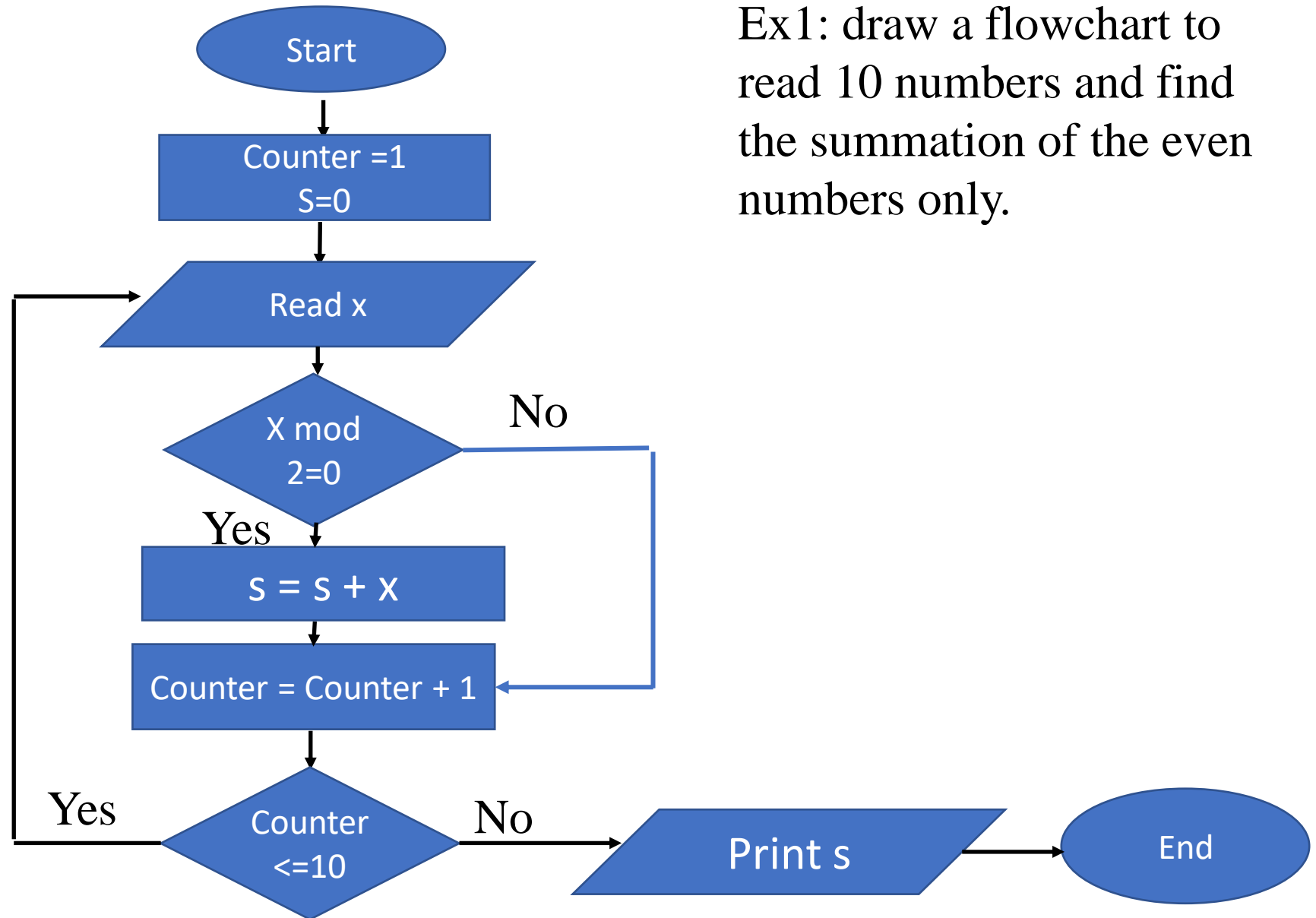
Ex1: draw a flowchart to read 10 numbers and find their summation.





# Loop Examples

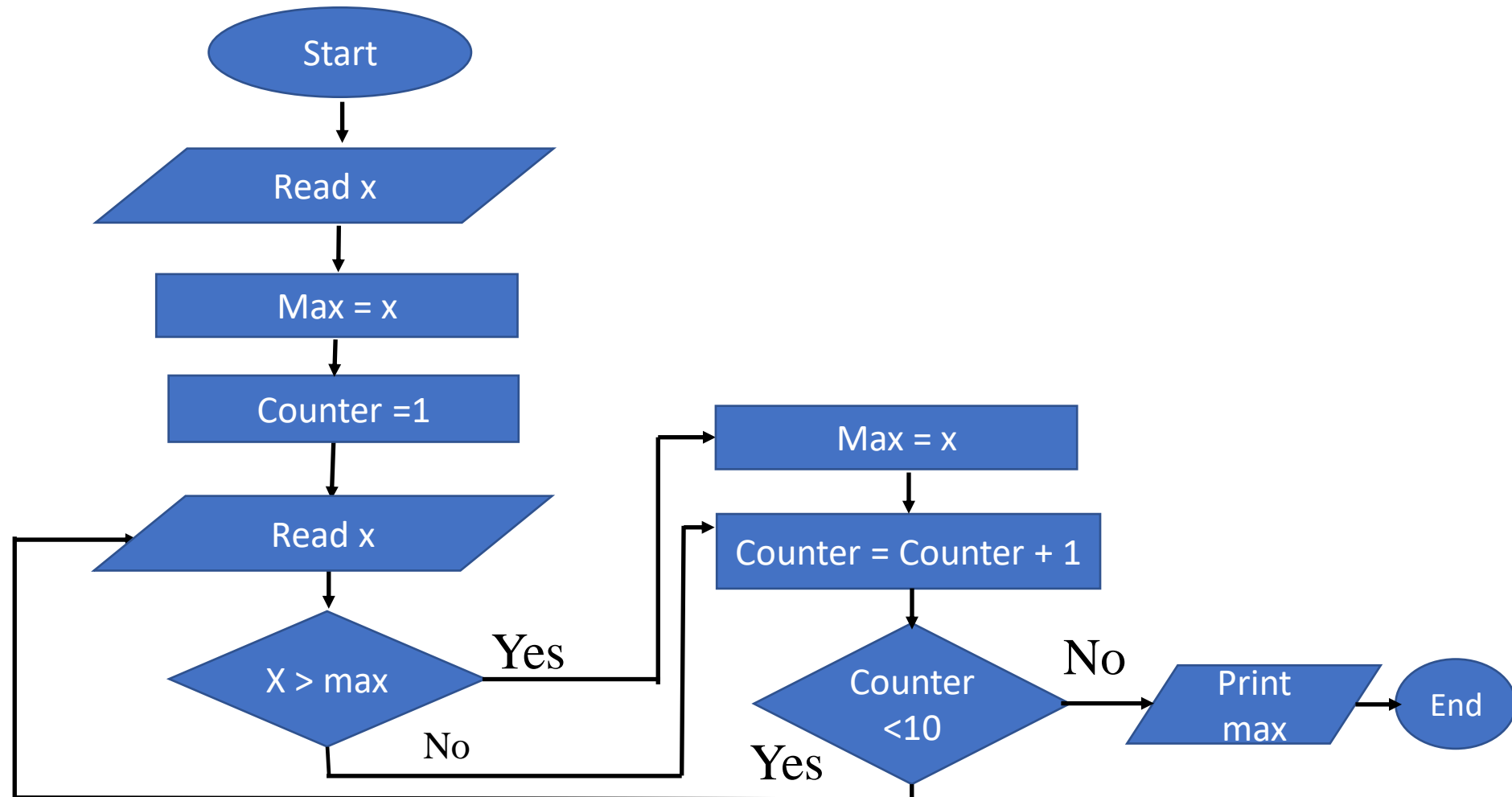
Ex1: draw a flowchart to read 10 numbers and find the summation of the even numbers only.





# Loop Examples

Ex1: draw a flowchart to read 10 numbers and find max value.



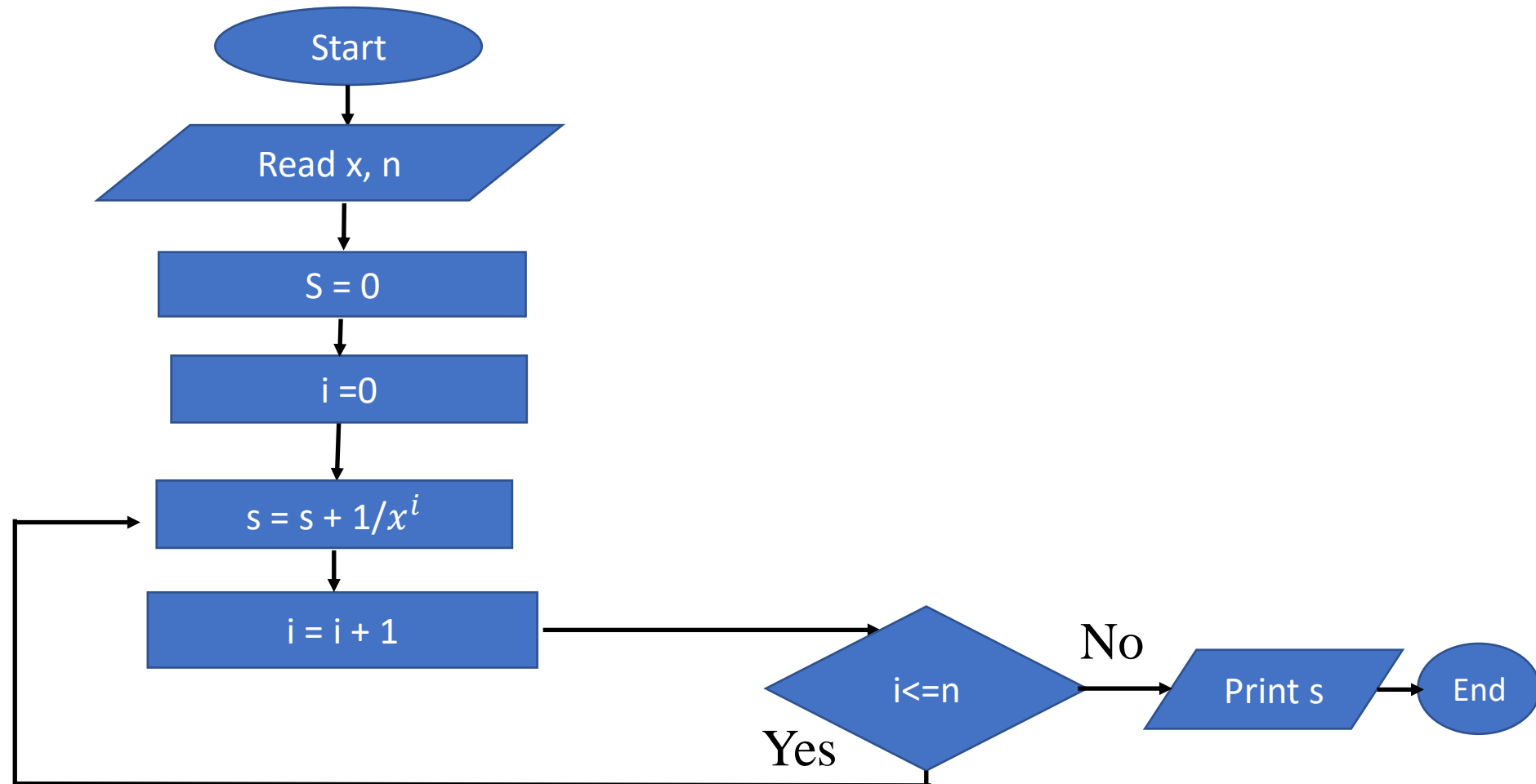




# Loop Examples

Ex1: Draw a flowchart to find the result of the following series.

$$s = \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3} + \frac{1}{x^4} \cdots \frac{1}{x^n}$$





# Loop

- Hw1 : draw a flowchart to find the sum of odd numbers between 0 and 50
- Hw2: draw a flowchart to find the sum of odd and even numbers between 0 and 50 separately.



# The End