Columbia College
Vancouver, Canada

Introduction to Computer Science and Programming 1
CSCI120

Chapter1

Sample Practices with Answers

Problem1

- Design an algorithm and a flowchart for an application which receive a number from the input and print a shape like this: (if the input is 6)

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******
*****
****
***
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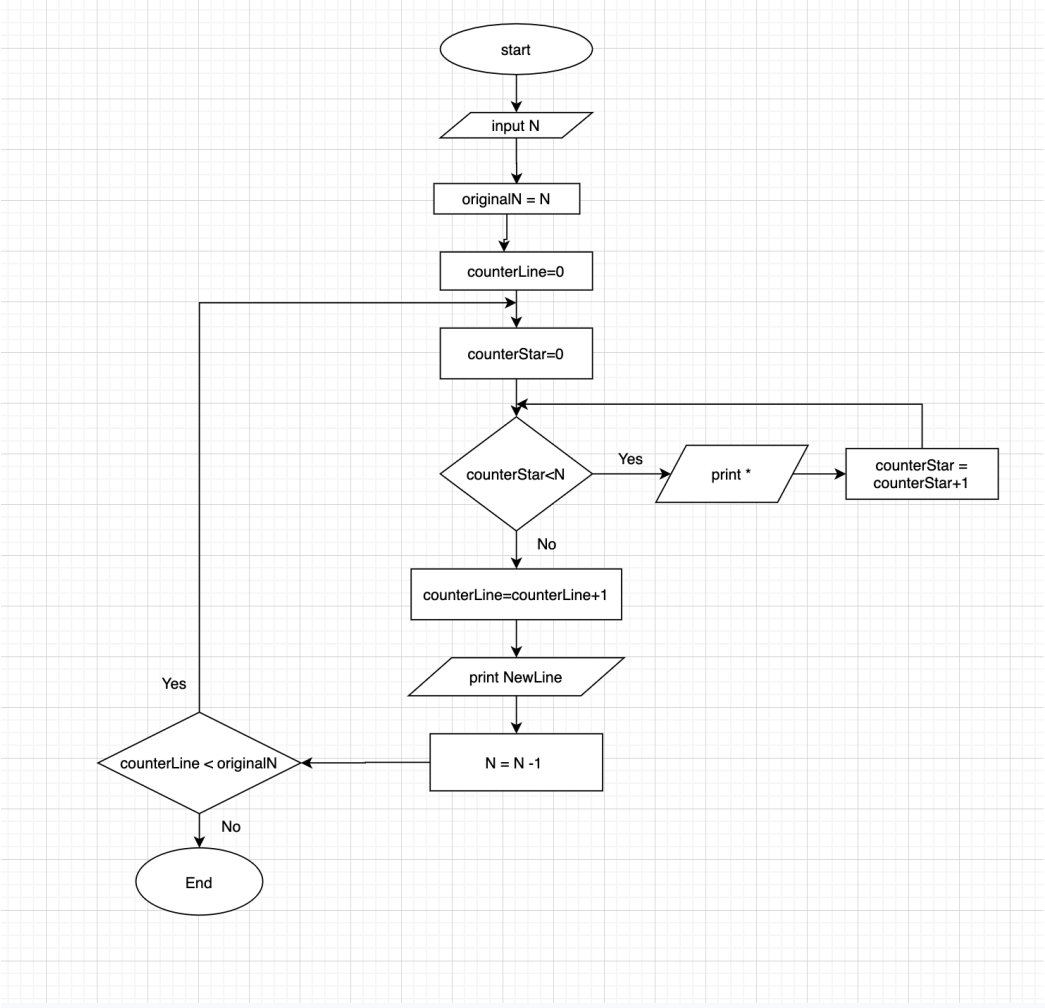
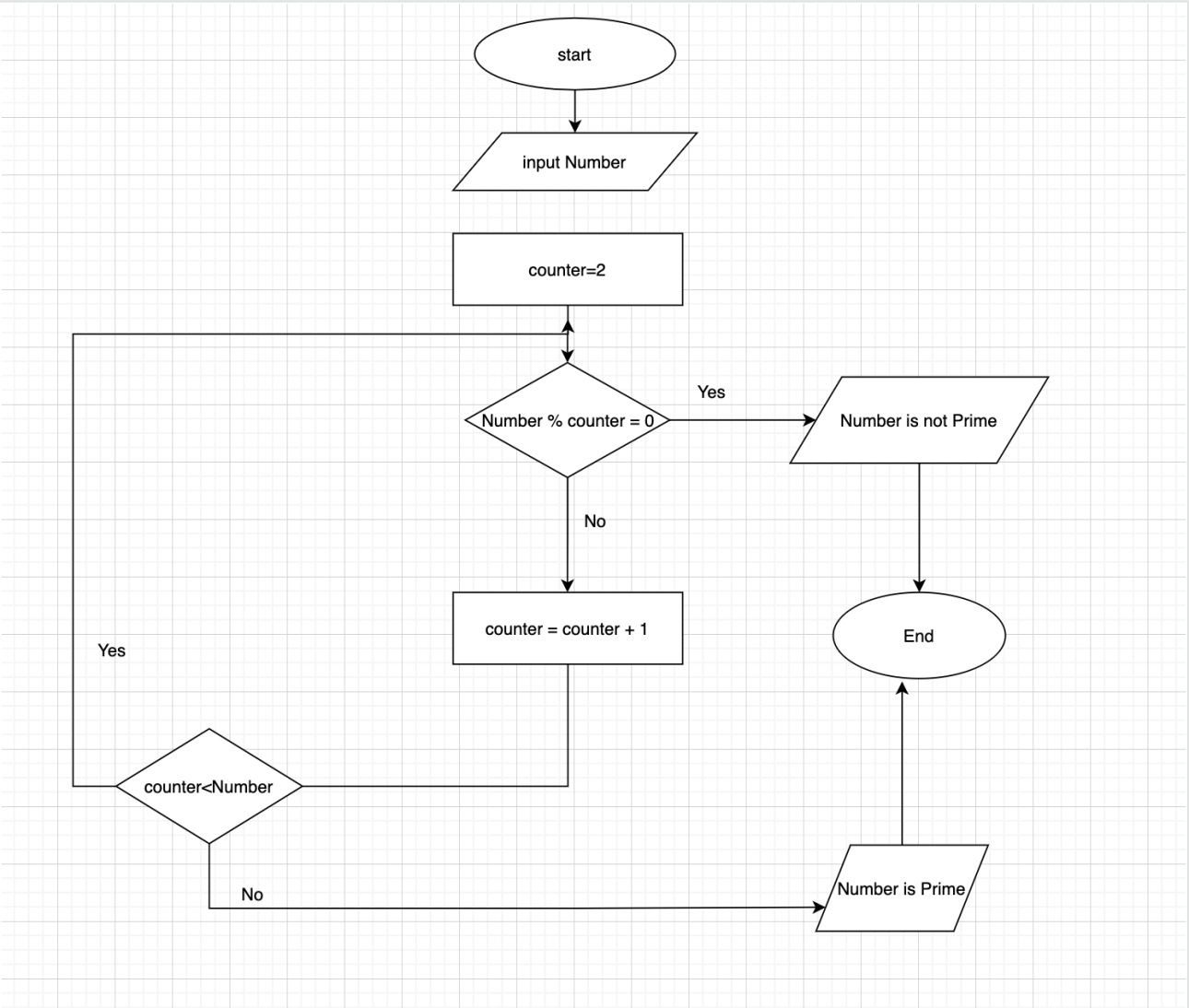


N	originalN	counterLine	counterStar	Print (output)
4	4	0	0	*
			4	****
3		1	3	**** ***
2		2	0 2	**** *** **
0		4	0 1	**** *** ** *

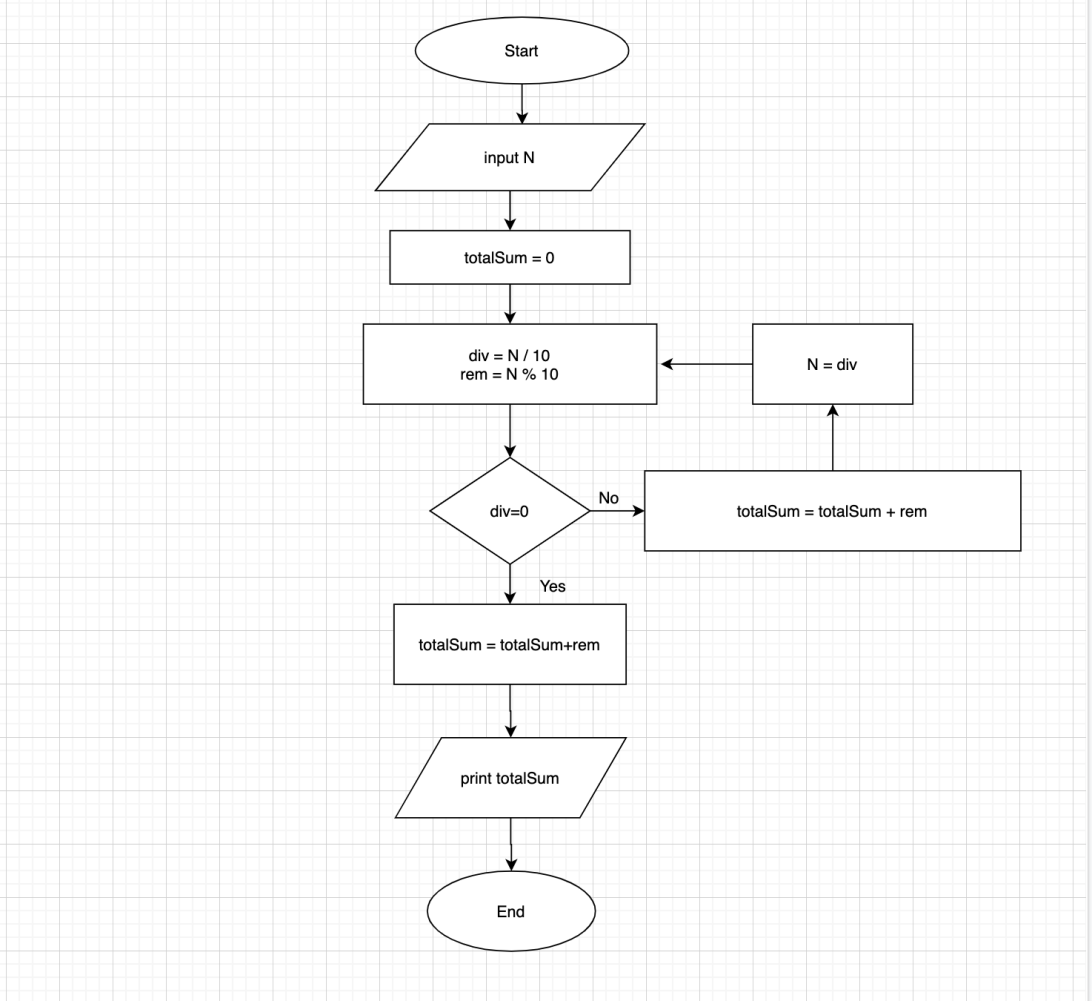
Problem2

- Design an algorithm and flowchart for an application which receive a number for the input and check whether the number is a prime number or not. If it is a prime number the algorithm will return true and if not the algorithm will return false.
- Prime number: https://simple.wikipedia.org/wiki/Prime_number



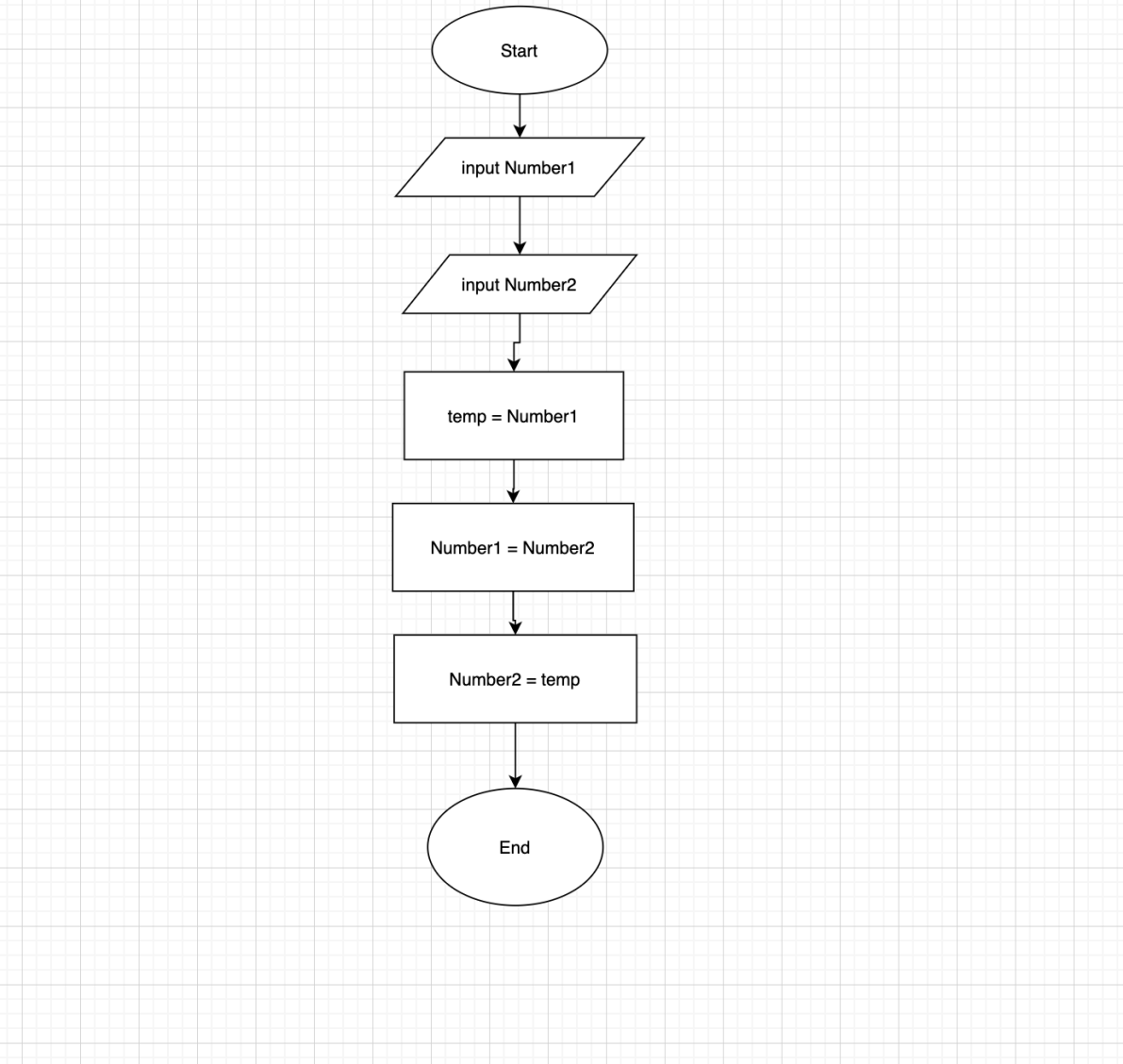
Problem3

- Design an algorithm and a flowchart which receives a number from input and print the sum of the number's digits. For instance if the number is 123 the algorithm return 6 which is the result of 1+2+3.



Problem4

- Design an algorithm and a flowchart, which takes two integer numbers and swaps their values.



Problem5

- Design an algorithm and a flowchart which receives two numbers A and B from the input and calculate the quotient without using the division (/) operator.
- Look at here to learn more: https://en.wikipedia.org/wiki/Quotient
- A = 18
- B = 4
- A / B = 4 (quotient)