Columbia College
Vancouver, Canada

Introduction to Computer Science and Programming 1 – CSCI120

Chapter 13: Algorithm Complexity Analysis

Lab 13

Note: This document has been designed and developed as part of an initiative for creating an OER (Open Education Resource) package for the course CSCI 120 at Columbia College.

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Problem1

- Write a Python program which shows there exist an integer (t) which is for any number bigger that *t,* f(x>t) = x^5 is smaller than g(x>t)=2^x

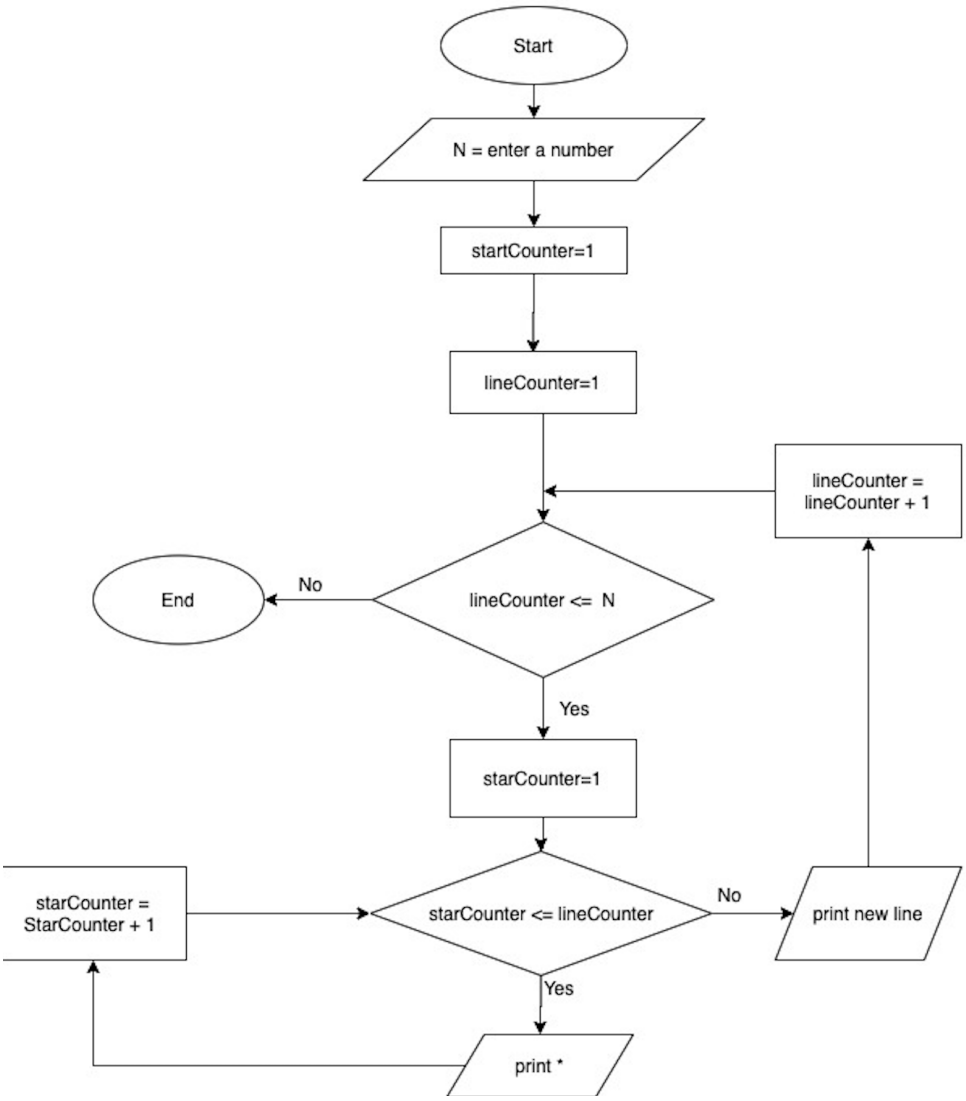
Problem2

- What is the class of complexity of the following operations:

1. Finding the highest GPA amongst of all GPAs of students.
2. Adding a group of students in line based on their years of admission to the college.
3. Finding a book in a library where the books might be located at any place.
4. Finding a book in a library where each book has a unique address in the library.

Problem3

What is the time complexity order of the following flowchart?



Problem4

Write a function which receives a list of integers which might have repeated numbers. The function will convert the list of a dictionary. (You decide what should be the key and value of such dictionary). What is the time complexity of your algorithm.

Good Luck ☺