

Assignment 1.1

Computational thinking, flowcharts, and pseudocode

Submit a single PDF file called **assignment1.1.pdf**. You should create your solutions for this assignment using Microsoft Word, Google Docs, or something similar, and save the document as a PDF when you are finished. If you are having trouble creating a PDF, visit office hours or post on cuLearn. Instructions for getting Microsoft Office (including Word) for free at:

<https://carleton.ca/its/ms-offer-students/>

This assignment has 30 marks.

See the marking rubric that is posted on the course webpage.

Problem 1 (Computational Thinking)

List the four elements of computational thinking that were discussed in lecture (decomposition, etc). For each of these techniques, briefly (one or two sentences is enough) explain one example of how you could apply it to problem solving in a topic that you are interested in or passionate about.

You may discuss the same interest or passion as many times as you want (e.g. you may walk through a single problem demonstrating all four steps). However, refrain from copying examples found in the slides

Problem 2 (Guessing Game Flowchart)

Your goal for this problem is to create the flowchart for a guessing game, in which a player must repeatedly guess numbers until they have guessed a secret number (assume the secret number is 42). If the user guesses incorrectly, the user should get a hint indicating “guess higher” or “guess lower”. When the user has guessed the number correctly, the ‘program’ should output “You Win!” before ending. Your answer should use the flowchart symbols outlined in the lectures. You can use a computer program to create the flowchart, or write it neatly on paper, take a picture, and include it in your document.

Problem 3 (Guessing Game Pseudocode)

Instead of using a flowchart, create a solution to the previous problem using pseudocode. Your pseudocode should resemble that used in lectures, but as long as your meaning is clear/unambiguous, you are free to use any words you desire.