CPS 109 Assignment One

Learning objectives

The learning objectives of this assignment are:

1. To implement decisions using if statements
2. To write statements using the boolean primitive data types.
3. To compare strings and/or characters.
4. To write loops using while or for.
5. To write functions

Introduction

Each year there are more students taking Computer Science I, and the students are coming from a wider range of university Programs. We in Computer Science would like to see this trend continue, since we believe that computational thinking and programming are fundamental skills that all university students should obtain. This year we have students from the following programs: Computer Science, Science, Math and its Applications, Arts, Engineering, Financial Math, Business, RTA, Biomedical Science, Graphic Commuication, International Economics, Creative Industries, Hospitality, Journalism, Media Production, and Nutrition. Clearly there are applications for programming in all of these areas, and each of you may have a problem in mind to which you would like to apply your new Python programming skills. The problem might be from everyday life, like how long it will take to pay off a loan given the interest rate and the payment schedule, or from your intended profession, or from your pass-time or your other courses. In this first assignment, we ask you to choose or invent your own problem and solve it. If you are unsure if the problem you propose is appropriate, please discuss it with your lab TA.

What to do:

1. Write a Python program, **a1.py** with the following characteristics:
   a) there are at least 20 lines of comments and 40 lines of code **(1 point)**
   b) the problem is described at the top of the program in a readable fashion **(1 point)**
   c) the code includes at least one instance of each of the five learning objectives listed above. **(3 points)**
   d) the code solves the problem. This may be assessed in part by a 'code walkthrough' where you explain your code to the TA. **(4 points)**
2. Run your program and collect the output in a text file called **output.txt (1 point)**

What to hand in on D2L:

The two files: **a1.py** and **output.txt**, as described above.

Marking scheme

Out of 10 points, as shown in What to do.

Plagiarism detection

You are to work alone when writing your code. You can discuss general ideas with your classmates, but you cannot copy code or develop code together nor take code from the web. We will be using the Measure of Software Similarity (MOSS) to identify cases of possible plagiarism; see the following link for details: http://theory.stanford.edu/~aiken/moss. Note, MOSS can detect changing identifiers and rearranging code. The Department of Computer Science takes the act of plagiarism very seriously. Those caught plagiarizing (both originators and copiers) will be sanctioned. Please see Ryerson University's Policy 60 for possible penalties and consequences: http://ryerson.ca/senate/policies/pol60_procedures.pdf. If you are unsure what constitutes plagiarism, please see your instructor.