

# CSCI 3155: Homework Assignment 1

Due Thursday, September 3, 2009

Find a partner. You will write up and turn in this assignment in pairs. Feel free to use the moodle forum to locate a partner.

This assignment particularly encourages discussion, so you are welcome to talk about these questions in larger groups. However, we ask that you write up your answers in pairs. Also, be sure to acknowledge those with which you discussed outside of your pair.

**Exercise 1: Bookkeeping.** Indicate in a sentence or two how much time you spent on this homework, how difficult you found it subjectively, and what you found to be the hardest part. Any non-empty answer will receive full credit.

**Exercise 2: Skill 1.1.** Table 1.1 gives nine characteristics that have some bearing on the criteria (readability, writability, and reliability) for evaluating programming languages. When comparing languages with respect to these characteristics, we usually find that each language has its strengths and weaknesses. In other words, it is rare for one language to be better than another language with respect to all the characteristics. This is where personal preferences and taste comes in: different people may rank the different characteristics differently. For example, you may consider "simplicity" to be the most important characteristic, while your friend may feel that "type checking" is the most important one. Individually, pick three characteristics that you feel are the most important and explain why you think these are more important than the ones left out in your list. Then, compare and contrast your list with your partner's. Discuss the reasons why you might have chosen differently.

**Exercise 3: Skill 1.2.** In C/C++ you can increment a variable with any of the following statements:

- `a = a + 1`

- `++a`
- `a++`

(and there are other ways). Do you think that having three ways of incrementing variables is a good idea or should C/C++ have only one way? Use the characteristics in Table 1.1 to support your answer.

**Exercise 4: Skill 1.3.** Some languages, such as C perform only weak type checking, while others, such as Java, trap all type errors (i.e., Java catches and reports all type errors either at run-time or at compile time). Compare and contrast the C-style type checking with the Java-style type checking with respect to the characteristics in Table 1.1.