

**CMSI 182**  
**INTRODUCTION TO COMPUTER SCIENCE**  
Fall 2007

## Assignment 1108

Alright, time to get our hands dirty with specifying algorithms.

### Not for Submission

Read Chapter 5 in the Brookshear book.

### For Submission

Specify the following algorithms using pseudocode:

1. The algorithm for converting any number from 0 to 255 into 8-bit binary. This algorithm can be thought of as:

*convertTo8Bit(number)*

...where *number* is the number to be converted, and the result is that number's corresponding 8-bit binary representation.

Make sure that the algorithm detects whether *number* is within range in the first place (i.e., *number* should range from 0 to 255).

2. An algorithm for "simulating" the three-door puzzle discussed in class today. The algorithm can be thought of in this way:

*simulateDoorGame(trialCount, switchDoors)*

...where *trialCount* is the number of times that the game is to be played, and *switchDoors* indicates whether or not this simulation should switch doors or not. The result of the algorithm is the number of times that the "player" chose the winning door.

Submit the pseudocode on hardcopy. Make sure to format your pseudocode with the right indents so that structures such as conditionals and repetitions are easy to see.

### Extra Credit

You will receive extra credit if you do *next* week's assignment in advance: convert your pseudocode into a JavaScript function that can be run using the JavaScript scratch page on the course Web site.