CMPT 310

HW#3

This assignment is worth the same as HW2 in weight (*NOTE*: The weighting is 1xHW1 + 1.5xHW2 + 1.5xHW3).

The options are ONE of the following:

1) Programming Assignment – Individual Effort

This is a continuation of HW2 Scheme/Racket-like assignment. Specifically,

"Write a program, in scheme, that solves instances of map colouring problems. A map colouring problem is made up of a set of vertices (representing regions), edges (representing adjacency), and a set of colours, or values for variables represented by vertices. A solution is an assignment of colours to vertices such that each vertex has a colour and no two adjacent regions have the same colour. Assume for *n* vertices that the vertices are numbered 1 through *n*; similarly m colours are numbered 1 through *m*. Input will consist of a list where the first element is a number giving the number of colours, and the rest of the list is made up of ordered pairs giving the edges in the graph. For example (3 (1 2) (2 3) (1 3) (4 5)) describes a problem with a graph with 5 vertices made up of two disjoint sub-graphs, which is to be 3-coloured. There are various ways that the basic algorithm can be improved. In your documentation, besides describing your program, you should also describe and justify your choice of improvements that you have implemented. Test cases will be provided next week."

Due Date: Last day of class.

2) Written Report – Individual Effort

This is an approved review-based report on REPAST (exhibiting the mastery of knowledge of some tool(s) therein). See http://repast.sourceforge.net/. The document is not to exceed 5 pages in total.

Due Date: Last day of class.

3) Class Presentation – Group Project

Your group is to present a 10 minute PPT during the *last week of classes* centered upon *advanced topics,* to be approved by the instructor. You will be graded, in part, by how well you enlighten the class. Everyone is expected to attend the last week of classes – **attendance will be taken**.

Due: Last week of class.

4) Choreograph an interpretive modern dance performance on the construction of HAL 9000. This is to be performed in front of the entire CS faculty.