COSC 440 – Assignment #2
Fall 08

Choose one of the following tasks:

1.) Develop a finite-tape Turing Machine simulator. You can choose any language to create the simulator in, but if you use a language that I am not familiar with, my help may be limited and you should be prepared to answer questions in regards to the code. To test the machine, use it to test machines that you develop for the following languages:

     a.) $A = \{0^n1^n2^n \mid n >= 0\}$
     b.) $B = \{ww^R \mid w \in \{0, 1\}^*\}$ (w^R is w reversed)
     c.) $C = \{0^n1^{n^2} \mid n >= 0\}$

All of the languages are Turing-decidable.

2.) Develop a chat intelligence that can pass my version of the Turing test. Some things that I will be looking for: knowledge based on current events, videogames, sports, computer science, art, theatre, movies and the Civil War; ability to remember information provided earlier in conversation; ability to move from one topic to another seamlessly. There are possibly other conditions to consider as well. You may choose any language to create the intelligence in, but if you use a language that I am not familiar with, my help may be limited and you should be prepared to answer questions in regards to the code.

Due: November 20th, 2008 at the start of class. You may work in groups of 1-3 for this project. If you work in a group of >1 person, you must provide a document stating what work each member of the group performed.