

COSC 440 – Assignment #2

Fall 2010

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

All of the languages are Turing-decidable.

2.) Write a one-page paper, single-spaced, 12 pt., Times New Roman font with normal margins about the life of Alan Turing. In your paper, you are required to comment on something about Alan Turing that you found surprising.

Due: November 23d, 2010 at the start of class. You may work in groups of 1-3 for the coding part of the project. If you work in a group of >1 person, you must provide a document stating what work each member of the group performed. Each member of the group will submit papers independent of each other.