Comp 496ALG Homework Assignment #1

To be completed by Sept 3

Homework Problems will not be collected. There will be an occasional quiz on the homework problems. The quiz will be announced at least one lecture before the quiz is given.

1. Page 22: Exercise 1
2. Page 22: Exercise 2
3. Page 23: Exercise 4 (Hint: Show how to modify Stable Matching Problem)
4. Trace the Stable Matching Problem on the following case. Show engagements as they happen and the list of free employers as done in class. There are 4 employers and 4 applicants. Their rank order preferences are as follows

e1: a2,a3,a1, a4

e2: a1, a4,a2,a3

e3: a1, a4, a3, a2

e4: a2, a1 ,a4, a3

a1: e1, e2, e3, e4

a2: e2, e3, e4, e1

a3: e1, e4 e2, e3

a4: e1, e2,e4, e3

1. Prove that the following Bubble Sort correctly sorts an array a[1..n] of numbers from smallest to largest

for i = 1 to n-1

for j = 1 to n -1

if a[j] > a[j+1]

swap a[j] and a[j+1]