

HW6 Grading Rubric

Written(30)

Written 1 (15): Weiss, Exercise 9.15

- Part A (10):
 - OK if only final tree is shown for each (One tree for each algorithm)
 - OK if no work shown
 - -1 for each incorrect edge
- Part B (5):
 - +5 for correct answer and correct explanation given
 - +2 for correct answer and incorrect or no explanation given
 - 0 for incorrect answer

Written 2 (0): Deleted

Written 3 (15): Weiss, Exercise 9.53

For all parts, partial credit is at grader's discretion

- Part A +5 for correct explanation
- Part B +5 for correct explanation
 - -3 mentions something about maximum distance but no specific algorithm or method, ie maximum spanning tree Prim's or finding all paths and taking the max
- Part C +5 for correct explanation
- Each part: -2 if algorithm is correct but no graph algorithm is used

Programming (70)

- ½ if the code doesn't compile and major changes are needed. (Major changes: not immediately identifiable logic errors, **multiple** syntax errors)
- (-2) if program doesn't compile due to minor syntax errors (e.g missing semicolons)
- (-1) for not removing package statements.

P1 TSP (70):

README (5):

- +2 comparison and comments on performance of Brute Force vs NN

- +3 average results for at least 3 different graphs for each n (-1 point for each missing one)

generateRandomVertices (5):

- +3 correctly generates n vertices and $n(n-1)/2$ undirected edges
 - -1 for not generating edges
- +2 x,y coordinates set randomly using java.util.Random (Math.random() may be acceptable as well)

nearestNeighborTSP (25):

- +25 for displaying correct cycle
 - -2 if only considers one vertex as starting vertex
- +20 for having the correct cycle without the last edge going back to the start vertex
- +10 for displaying correct number of edges, but the cycle is not the correct one
- +5 for having the wrong number of edges and having a wrong cycle. This may include having 2 or more edges missing.

bruteForceTSP (35):

Generating permutations (10 points)

- +10 correctly generates all possible permutations
- +5 generates some permutations

Displaying the cycle (25 points)

- +25 for displaying the correct cycle
- +20 for having the correct cycle without the last edge going back to the start vertex
- +10 for displaying correct number of edges, but the cycle is not the correct one
- +5 for having the wrong number of edges and having a wrong cycle. This may include having 2 or more edges missing.