Specifications for Homework 1

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1 Written Assignment

1.1 Marking Scheme

The total score is 50. The score of each problem is as follows:

1.1 (5)-2 points, (8)-4 points, (13)-2 points;
1.2 (1), (3)-3 points each;
1.3 (5), (8)-4 points each;
1.4 (3)-3 points, (5)-5 points;
1.6 (2), (4), (6)-4 points each;
1.9 (3), (4)-4 points each.

ATTENTION: You need to show the detailed solution rather than a simple answer to get the full mark.

1.2 Some Explanations

• In Exercise 1.2, $GCD(x, y)$ means the greatest common divisor of $x$ and $y$.

• In Exercise 1.6, the initial value of $x$ is 0 for all problems, you ought to compute the final $x$ for $f(n)$ and the big-O notation for each $f(n)$, which is $g(n)$ respectively.

• In Exercise 1.9 (3), the average cost means the average total cost $C(n)$ given all the input $n$ from 1 to 100. You may write a program to help you calculate it.

• For Exercise 1.9 (4), you may use Matlab or other graph sketching software to compare the curve for each algorithm. Also, please notice the word of ‘individually’.

2 Programming Assignment

• The assignment ID for 1.15 and 1.19 is 1 and 2 respectively. Please use command submit 1 yourprogram1.c and submit 2 yourprogram2.c to submit your programs.

• The reward vector for 1.15 is $(0, 3, 2, 1, 0, 0, 0, 0)$ and that of 1.19 is $(0, 4, 3, 2, 1, 0, 0, 0)$. Please remember that the 0-th is useless and the beginning time is Fri, Feb 1, 00:00:00, 2013.

• The link of the ranking page will be announced one day before the submission period.