

# 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.