Homework 1

1. Given n points on the plane, design one algorithm to find the distance between the nearest two points with the computational complexity O(nlogn). You should descript this algorithm using pseudocode, and write a program to realize this algorithm.

   For example, Input:
   n=5
   A={(0,2),(6,67),(43,71),(39,107),(189,140)}
   Output:
   36.22

Note that: You should submit one pseudocode document as well as the source codes of the program. You can write this program in C++ or Java or Python.

2. (a) Prove the expected computational complexity of bucket sort is O(n).
(b) What is the computational complexity of bucket sort in the worst case?

Please
(1) submit your homework to TA's emailbox (**lijing.coder@qq.com**) before the deadline (0:00 AM, October 15.)
(2) put all files in a compressed folder, which should be named "student id-name-homework1".