Problems

5.1 Rearrange the elements an array of length N, such that they appear in reverse order.

5.2 Given a set of n students' examinations marks (in the range 1 to 20), write a structured algorithm to calculate:

a) The standard deviation of the set as $sd = \sum_{i=1}^{n} \frac{\sqrt{(x_i - \bar{x}}}{n}$ where $\bar{x}$ is the average of the set

b) The number of students obtained each possible mark.

c) The most frequently obtained mark(s)

Provided that you have a module Sqrt(x, s) that calculates the square root of "X" and stores it in "S."

5.3 Trace the following set of numbers for the values 12, 34 using binary search:

2 5 7 8 10 12 15 20 21 27 33 40 45

5.4 Trace both the selection sort and the bubble sort algorithms using the following set of data and determine the number of comparisons in each case.

9 8 10 7 12 12 20 27 25 30 6