Assignment #1:

Find out worst case sequence of numbers for selection sort algorithm of 8, 16, and 32 elements arrays. Do it by having multiple loops to generate all possible sequences of elements and pass to the algorithm code to count ADD, CMP, MMV operations and sum them up case by case storing the sequence and resulting operation count in each case in a text file. Then plotting a frequency table for different cases that result in same number of steps.

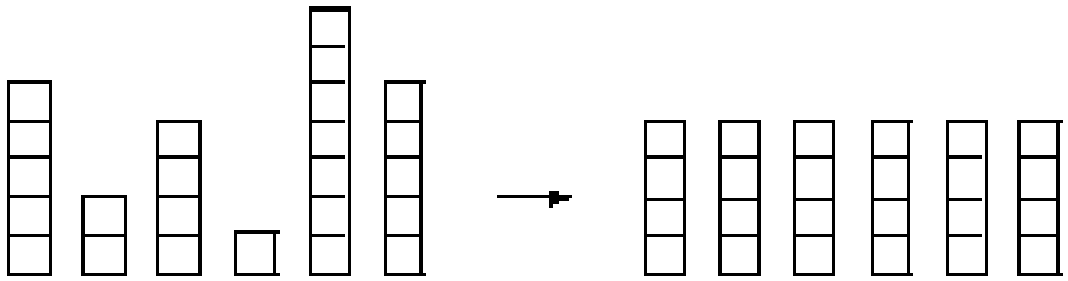
Assignment #2

Insertion sort algo to be modified employing binary search to identify location where the current item from unsorted part must be placed. Then creating void space for it (BULK movement) to actually placing it there.

Perform that tabular analysis again to come up with new growth of function for the new insertion sort algorithm. Let us see the advantage if any.

Assignment#3

Problem : Bob likes to play building blocks. He can stack the building blocks into many heap of different heights. Bob is very happy to tell his sister Alice: "You see, I put the wall up!" The sister retorted: "There is none, the real wall should have the same height, you make each stack of blocks of same height." After some thought, Bob felt that his sister was right, so he decided to re-stack the building blocks. But the little Bob is too lazy, he wants to move the smallest number of building blocks to make each stack of the same height. Can you help him?



Input: There are several groups of measurements. The beginning of each group of tests is an integer n, representing the number of small pile stacks. Then the next line will contain n integers, representing the height of the different building heap. You can assume that there is a gap of 1 and 4. The total number of blocks can be divisible

by the stack, so we can pile up the same height of the stack. When n = 0, the input ends.

Output: For each group of measurements, first print out the number of the test, as shown in the output example. Then the "The minimum number of moves is k.", Where k represents the number of blocks that need to be moved at least so that all the blocks have the same height. Print a blank line after the output of each group.

<u>Assignment#4:</u> One bank, according to a reliable line, points out that one of the N coins in the last batch of banks is fake and the weight is different from the other coins. (The weight of the other coins is the same). At present the bank only a simple scales that can be used, can only measure the left or right of the items who are heavier.

Devise an algorithm.