

Discrete mathematics - Chapter Algorithm practical work

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ATTENTIONS

- Practical work duration: *13:30 - 16:00*.
- Using your own laptop to complete the code, then writing down your solution to paper with your full name, student ID and your signature. Submit your paper work to teacher before getting out of the class.

Computer Projects: write programs with these inputs and outputs.

1 PROBLEM 1

Given an ordered list of n distinct integers, determine the position of an integer in the list using a binary search.

2 PROBLEM 2

Given a list of integers, determine the number of comparisons used by the bubble sort and by the insertion sort to sort this list.

3 PROBLEM 3

Given an integer n , use the greedy algorithm to find the change for n cents using quarters, dimes, nickels, and pennies.

4 PROBLEM 4

Given the starting and ending times of n talks, use the appropriate greedy algorithm to schedule the most talks possible in a single lecture hall.

5 PROBLEM 5

Given an ordered list of n integers and an integer x in the list, find the number of comparisons used to determine the position of x in the list using a linear search and using a binary search.