UNIVERSITY OF SCIENCE AND TECHNOLOGY OF HANOI
BACHELOR ICT

Discrete mathematics - Chapter Algorithm practical work

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ATTENTIONS

- Practical work duration: *14:00 - 16:30*.
- Remember to send your work to my email address *giang-anh.tuan@usth.edu.vn* with this email title format *"[ICT Bx] - Chapter Algorithm practical work - your name"* before *23:59* (x is your enrollment academic year, i.e ICT B6, incorrect format or late submission will not be considered).

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.