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Daffodil International University

Department of Software Engineering

Faculty of Science & Information Technology

Lab Assessment, Summer 2026

Course Code: SE215; Course Title: Algorithm Design & Analysis Lab

Sections & Teachers: 44I2 (AF)

Marks: 25

Time: 35 Minutes

Question 1: Student Record Search System

A university maintains the student IDs of a laboratory section in random order. Since Binary Search only works on sorted data, you must first sort the IDs and then search for a specific student.

Input

- An integer **N** representing the number of student IDs.
- **N** integer student IDs.
- A student ID to search.

Tasks

1. Sort the student IDs in **ascending order using Quick Sort**.
2. Display the sorted array.
3. Search the given student ID using **Binary Search**.
4. Display the index (0-based) if found; otherwise print **"Student ID Not Found"**.

Sample Input

8

3021 1056 4123 2089 3001 1125 4090 2005

3001

Sample Output

Sorted IDs:

1056 1125 2005 2089 3001 3021 4090 4123

Student ID found at index 4.

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Question 2: Employee Salary Management

A company stores employee salaries in an array. The HR department wants to arrange the salaries and check whether a particular salary exists.

Input

- Number of employees **N**
- **N** salaries
- User choice
  - **1 → Ascending**
  - **2 → Descending**
- Salary to search

Tasks

1. If the user chooses
   - **1**, sort the salaries in ascending order using **Insertion Sort**.
   - **2**, sort the salaries in descending order using **Insertion Sort**.
2. Display the sorted salaries.
3. Search the target salary using **Linear Search**.
4. Print its position (1-based) if found; otherwise print **"Salary Not Found"**.

Sample Input

7

42000 38000 50000 47000 35000 52000 40000

2

47000

Sample Output

Sorted Salaries:

52000 50000 47000 42000 40000 38000 35000

Salary found at position 3.

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