

Lab Session 4

28.08.2024

BT 3051 - DSA Biology Lab

Problem 1:

Write a Python program to implement the Selection Sort algorithm. The program should include a provision to print the current state of the array during each swap operation.

Problem 2:

Write a Python program to implement the Insertion Sort algorithm. The program should include a provision to print the current state of the array during each swap operation.

Problem 3: Sort the following arrays using both Insertion Sort and Selection Sort, and compare the time taken by each algorithm. Comment on your observations regarding the performance of both algorithms.

- (a) [1, 3, 5, 4, 8, 11, 20, 51, 100, 2020]
- (b) [20, 15, 12, 10, 8, 6, 4, 3, 2, 1]
- (c) [20, 5, 151, 100, 1]

Instructions:

- Measure the execution time for both sorting algorithms using Python's `time` module.
- Print the sorted arrays and the time taken by each algorithm.

Problem 4:

Read about Bubble Sort and implement the algorithm.