Exercise 1 – DSA TA 2024

Part 1: Identifying Big-O Notations

1. Big O(1)
2. Big O(n)
3. Algorithm name: Binary Search Algorithm

Calculating Big O: O(1) + O(1) + O(log (n)) + O(n) + O(n) + O(n)

Answer: Big O(log (n))

1. Algorithm name: Quick Sort Algorithm

Calculating Big O:

1. First part: 2 \* O(1) + 4 \* O(n)+ 4 \* O(1) = O(n)
2. Second part: O(n log(n)) [because of partition]

Answer: Big O(n log(n))

1. Algorithm name: Bubble Sort Algorithm

Calculating Big O: 2 \* O(1) + O(n) + 4 \* O(n2) + O(n)

Answer: O(n2)

Part 2: Programming

Github link: <https://github.com/Spacebone31/Exercise1-DSA.git>

Screenshot:

Code

A screen shot of a computer program

Description automatically generated

A screen shot of a computer program

Description automatically generated

A computer screen shot of a program code

Description automatically generated

Output

