Lab Assignment - 7

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Problem Statement -1:

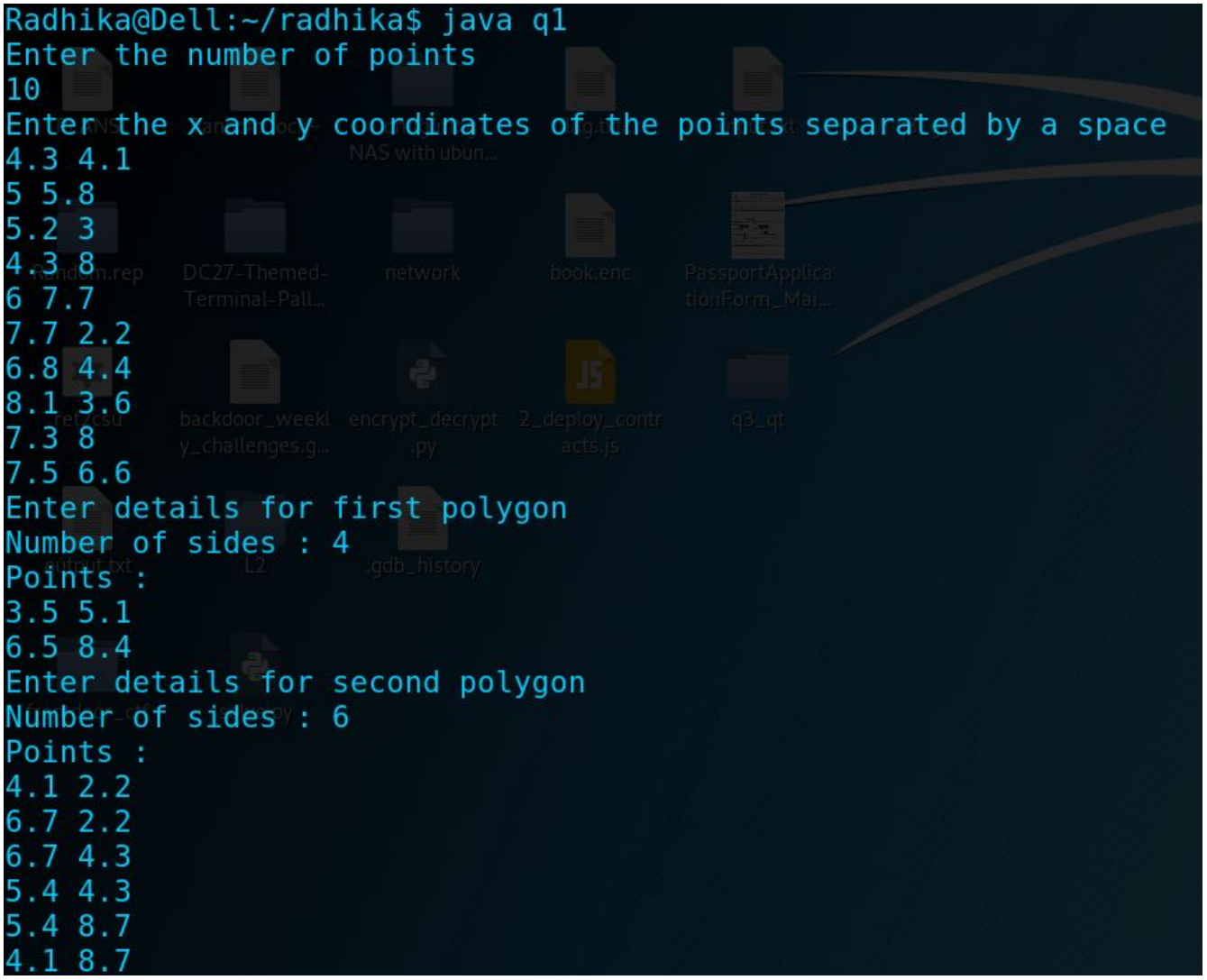
Given: n 2D points and two orthogonal polygons.
Problem: Find the set of points lie inside the overlapping region (rectangular) of the two given orthogonal polygons.
Write a program in Java to solve the above problem applying k-d tree data structure.

DATA STRUCTURES USED:

- Trees
- K-D trees
- Arrays

ALGORITHMS USED:

- Recursive functions
- Partitioning algorithms



Problem Statement -2:

Given n values in an array and two index values, find the result of the following queries
1. minimum value
2. maximum value
3. sum
4. update by adding 4 with each element,

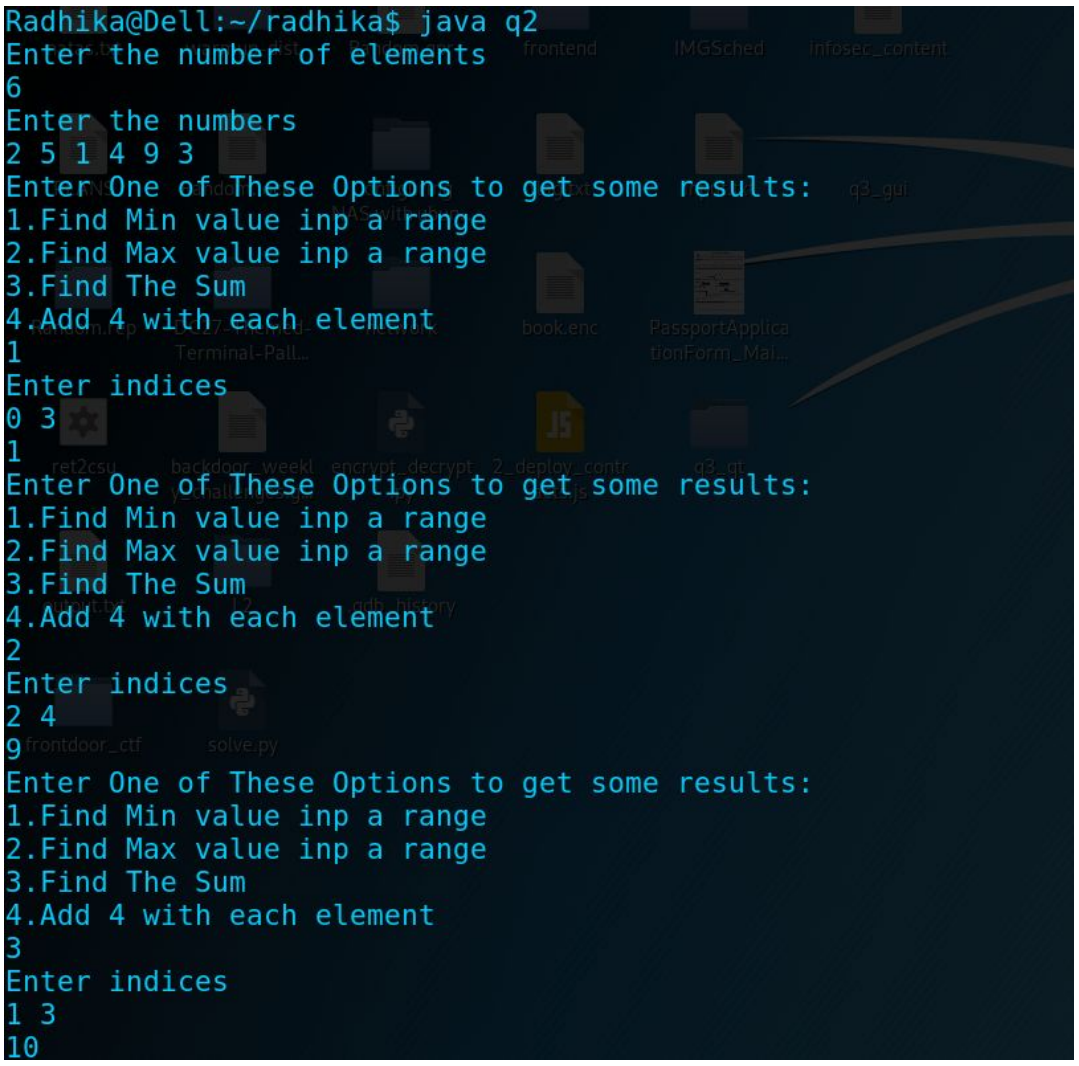
within the given index range using Segment tree. Also implement the brute-force method and compare the execution time of both the methods.

DATA STRUCTURES USED:

Segment Trees
Arrays

ALGORITHMS USED:

Various recursive algorithms for segment tree
Brute force algorithms to compare the efficient algo


Radhika@Dell:~/radhika$ java q2
Enter the number of elements
6
Enter the numbers
2 5 1 4 9 3
Enter One of These Options to get some results:
1.Find Min value inp a range
2.Find Max value inp a range
3.Find The Sum
4.Add 4 with each element
1
Enter indices
0 3
1
Enter One of These Options to get some results:
1.Find Min value inp a range
2.Find Max value inp a range
3.Find The Sum
4.Add 4 with each element
2
Enter indices
2 4
9
Enter One of These Options to get some results:
1.Find Min value inp a range
2.Find Max value inp a range
3.Find The Sum
4.Add 4 with each element
3
Enter indices
1 3
10