CSE1007 Java Programming. Fall Semester. 6-September-2021

Sharadindu Adhikari | 19BCE2105
Lab Activity 3 | Teams

Question:

3(a)

Solution:

A_sort.java:

```
package ascending;

public class A_sort{

    public void ascending_sort(int[] args) {
        for(int i = 0; i < args.length-1; i++){
            int min = 10000000;
            int tmp = args[i], index = 0;

            for(int j = i+1; j < args.length; j++) {
                if(args[j] < min) {
                    min = args[j];
                    index = j;
                }
            }

            args[i] = min;
            args[index] = tmp;
        }
    }
}
```

D_sort.java:

```
package descending;

public class D_sort{

    public void descending_sort(int[] args) {
        for(int i = 0; i < args.length-1; i++){
            int max = -1;
```

```
            int tmp = args[i], index = 0;

            for(int j = i + 1; j < args.length; j++) {
                if(args[j] > max) {
                max = args[j];
                index = j;
                }
            }

            args[i] = max;
            args[index] = tmp;
        }
    }
}
```

Test_sorting.java

```
package testing;

import ascending.*;
import descending.*;
import java.util.*;

public class Test_sorting{

    public static void main(String[] args) {
        A_sort aSort = new A_sort();
        D_sort dSort = new D_sort();
        Scanner sc = new Scanner(System.in);

    System.out.println("Enter the length of the array: ");
        int n;
        n = sc.nextInt();
        sc.nextLine();

        int[] arr = new int[n];

        for(int i = 0; i < n; i++){
            int tmp;
            if(i == 0){
                System.out.println("Enter the " + (i+1) + "st number: ");
                tmp = sc.nextInt();
                sc.nextLine();

                arr[i] = tmp;
            }
```

```
            else if(i == 1){
                System.out.println("Enter the " + (i+1) + "nd number: ");
                tmp = sc.nextInt();
                sc.nextLine();
                arr[i] = tmp;
            }

            else if(i == 2){
                System.out.println("Enter the " + (i+1) + "rd number: ");
                tmp = sc.nextInt();
                sc.nextLine();
                arr[i] = tmp;
            }

            else{
                System.out.println("Enter the " + (i+1) + "th number: ");
                tmp = sc.nextInt();
                sc.nextLine();
                arr[i] = tmp;
            }
        }

        aSort.ascending_sort(arr);
        System.out.println("\nSorted in Ascending Order: ");

        for(int i = 0; i < n; i++){
        System.out.print(arr[i] + " ");
        }

        System.out.println("\n");
        System.out.println("Sorted in Descending Order: ");
        dSort.descending_sort(arr);

        for(int i = 0; i < n; i++) {
            System.out.print(arr[i] + " ");
        }

        System.out.println();

    }
}
```

Output:

```
shara-d@Rohans-workstation:~/Desktop/Java_Lab$ java Test_sorting.java
Enter the length of the array:
5
Enter the 1st number:
8
Enter the 2nd number:
3
Enter the 3rd number:
6
Enter the 4th number:
7
Enter the 5th number:
8

Sorted in Ascending Order:
3 6 7 8 8

Sorted in Descending Order:
8 8 7 6 3
shara-d@Rohans-workstation:~/Desktop/Java_Lab$ javac -d . A_sort.java
shara-d@Rohans-workstation:~/Desktop/Java_Lab$ java Test_sorting.java
Enter the length of the array:
9
Enter the 1st number:
5
Enter the 2nd number:
3
Enter the 3rd number:
7
Enter the 4th number:
1
Enter the 5th number:
3
Enter the 6th number:
6
Enter the 7th number:
2
Enter the 8th number:
4
Enter the 9th number:
7

Sorted in Ascending Order:
1 2 3 3 4 5 6 7 7

Sorted in Descending Order:
7 7 6 5 4 3 3 2 1
shara-d@Rohans-workstation:~/Desktop/Java_Lab$
```