

## Practice Quiz Test-5 (CSW 2)

Total points 10/10

✓ Suppose  $A[] = \langle 0, 1, 2, 0, 2, 1, 1 \rangle$  and the pivotindex is 1, then apply the Dutch National Flag algorithm to reorder the array. What is the final output after applying the algorithm? \*

2/2

☐ [0, 1, 2, 0, 2, 1, 1]

☒ [0, 0, 1, 1, 1, 2, 2] ✓

☐ [0, 0, 1, 1, 2, 2, 1]

☐ [1, 0, 0, 1, 1, 2, 2]

✓ Suppose ArrayList = [WHITE, BLUE, WHITE, BLUE, RED, RED] and the pivotindex is 1, then apply the Dutch National Flag algorithm to reorder the ArrayList. What is the final output after applying the algorithm? \*

2/2

☐ [WHITE, BLUE, WHITE, BLUE, RED, RED]

☐ [RED, RED, BLUE, WHITE, BLUE, WHITE]

☒ [WHITE, WHITE, RED, RED, BLUE, BLUE] ✓

☐ [RED, RED, WHITE, WHITE, BLUE, BLUE]

✓ What is the time complexity of accessing an element in ArrayList? \*

2/2

☐  $O(n)$

☒  $O(1)$  ✓

☐  $O(n \log n)$

☐  $O(2)$

✓ What is the time complexity of the Dutch National Flag algorithm, where we make a single pass and move all the elements less than the pivot to the beginning and in the second pass we move the larger elements to the end. \*

2/2

☐  $O(1)$

☒  $O(N)$  ✓

☐  $O(N*N)$

☐  $O(N*M)$

✓ Apply Quick sort ascending order on a given sequence 5, 3, 6, 7, 9, 2, 8, 4. What is the sequence after first phase, if pivot is the last element? \*

2/2

☐ 5, 3, 6, 7, 9, 2, 8, 4

☐ 2, 3, 4, 5, 6, 7, 8, 9

☐ 7, 9, 5, 8, 6, 4, 2, 3

☒ 3, 2, 4, 7, 9, 5, 8, 6 ✓

## Practice Quiz Test-6 (CSW 2)

Total points 15/15

✓ What is the order of variables in Enum? \*

2/2

- ☒ Ascending order ✓
- ☐ Descending order
- ☐ Random order
- ☐ Depends on the order() method

✓ What will be the output of the following Java code? \*

2/2

```
enum Season
{
    WINTER, SPRING, SUMMER, FALL
};

System.out.println(Season.WINTER.ordinal());
```

- ☒ 0 ✓
- ☐ 1
- ☐ 2
- ☐ 3

✓ What will be the output of the following code? \*

5/5

```
public class test {
    public static void dutchFlagPartition(int PivotIndex,
    List<Integer> A) {
        int pivot=A.get(PivotIndex);
        for(int i=0; i<A.size(); ++i) {
            for(int j=i+1; j<A.size(); ++j) {
                if(A.get(j) < pivot) {
                    Collections.swap(A, i, j);
                    break;
                }
            }
        }
        for(int i=A.size()-1; i>=0 && A.get(i) >= pivot; --i) {
            for(int j=i-1; j>=0 && A.get(j) >= pivot; --j) {
                if(A.get(j) >= pivot) {
                    Collections.swap(A, i, j);
                    break;
                }
            }
        }
    }
}

public static void main(String[] args) {
    ArrayList<Integer> al=new ArrayList<>();
    al.add(0);
    al.add(1);
    al.add(2);
    al.add(0);
    al.add(2);
    al.add(1);
    al.add(1);
    System.out.println(al);
    int pivotIndex = al.indexOf(1);
    dutchFlagPartition(pivotIndex, al);
    System.out.println(al);
}
}
```

- ☐ [0, 1, 2, 0, 2, 1, 1]
- ☐ [0, 0, 1, 1, 1, 2, 2]
- ☒ [0, 0, 1, 2, 1, 2, 1] ✓
- ☐ [1, 0, 0, 1, 1, 2, 2]
- ☐ Option 5

✓ What is the space complexity of the Dutch National Flag algorithm, where we make a single pass and move all the elements less than the pivot to the beginning and in the second pass we move the larger elements to the end. \*

2/2

- ☒ O(1) ✓
- ☐ O(N)
- ☐ O(N\*N)
- ☐ O(N\*M)

✓ What will be the output of the following code? \*

4/4

```
public class test {
    public static enum Color {WHITE, RED, BLUE;}
    public static void dutchFlagPartition(int PivotIndex, List<Color> A) {
        Color pivot=A.get(PivotIndex);
        int smaller=0, equal=0, larger=A.size();
        while (equal < larger) {
            if (A.get(equal).ordinal() < pivot.ordinal()) {
                Collections.swap(A, smaller++, equal++);
            }
            else if (A.get(equal).ordinal() == pivot.ordinal()) {
                ++equal;
            }
            else { // A . get (equal) > pivot.
                Collections.swap(A, equal, --larger);
            }
        }
    }
}

public static void main(String[] args) {
    ArrayList<Color> al=new ArrayList<>();
    al.add(Color.RED);
    al.add(Color.RED);
    al.add(Color.WHITE);
    al.add(Color.BLUE);
    al.add(Color.WHITE);
    al.add(Color.BLUE);
    al.add(Color.RED);
    al.add(Color.RED);
    System.out.println(al);
    int pivotIndex=al.indexOf(Color.RED);
    dutchFlagPartition(pivotIndex, al );
    System.out.println(al);
}
}
```

- ☐ [RED, RED, WHITE, BLUE, WHITE, BLUE, RED, RED]
- ☐ [WHITE, WHITE, BLUE, RED, BLUE, RED, RED, RED]
- ☒ [WHITE, WHITE, RED, RED, RED, BLUE, BLUE] ✓
- ☐ [RED, RED, RED, RED, WHITE, WHITE, BLUE, BLUE]

## Practice Quiz Test-8 (CSW 2)

Total points 15/15

✓ What is the time complexity of a program that takes two arrays  $Arr1[n]$  and  $Arr2[m]$  representing integers, and returns an integer representing their product? <sup>2/2</sup> \*

- ☐  $O(1)$
- ☐  $O(n)$
- ☐  $O(m)$
- ☒  $O(n*m)$  ✓

✓ What is the space complexity of a program that takes two arrays  $Arr1[n]$  and  $Arr2[m]$  representing integers, and returns an integer representing their product? <sup>2/2</sup> \*

- ☐  $O(n)$
- ☐  $O(m)$
- ☒  $O(n+m)$  ✓
- ☐  $O(n*m)$

✓ What is the output of a program which takes an array of  $n$  integers, where  $A[i]$  denotes the maximum you can advance from index  $i$ , and returns whether it is possible to advance to the last index starting from the beginning of the array? Let  $A = \{3, 3, 1, 0, 2, 0, 1\}$  <sup>2/2</sup> \*

- ☐ It is not possible to reach the last index.
- ☒ It is possible to reach the last index. ✓

✓ What is the time complexity of the Dutch National Flag algorithm, where we make a single pass and move all the elements less than the pivot to the beginning and in the second pass we move the larger elements to the end. <sup>2/2</sup> \*

- ☐  $O(1)$
- ☒  $O(N)$  ✓
- ☐  $O(N*N)$
- ☐  $O(N*M)$

✓ What is the output of a program which takes an array of  $n$  integers, where  $A[i]$  denotes the maximum you can advance from index  $i$ , and returns whether it is possible to advance to the last index starting from the beginning of the array? Let  $A = \{3, 2, 0, 0, 2, 0, 1\}$  <sup>2/2</sup> \*

- ☒ It is not possible to reach the last index. ✓
- ☐ It is possible to reach the last index.

✓ What is the output of a program which takes an array of  $n$  integers, where  $A[i]$  denotes the maximum you can advance from index  $i$ , and returns whether it is possible to advance to the last index starting from the beginning of the array? Let  $A = \{2, 4, 1, 1, 0, 2, 3\}$  <sup>2/2</sup> \*

- ☐ It is not possible to reach the last index.
- ☒ It is possible to reach the last index. ✓

✓ What is the minimum number of jumps required to reach the end of an Array  $= \{2, 1, 3, 2, 3, 4, 5, 1, 2, 8\}$ , where  $A[i]$  denotes the maximum move you can advance from index  $i$ . <sup>3/3</sup> \*

- ☐ 2
- ☒ 3 ✓
- ☐ 4
- ☐ 5

## Practice Quiz Test-9 (CSW 2)

Total points 18/20

✓ An array Price[] = {310, 315, 275, 295, 260, 270, 290, 230, 255, 250} denoting the daily stock price. What is the corresponding to buying and selling one share of that stock once so that maximum profit earn? \*

2/2

- ☐ Buy at price = 315 & Sell at price = 230
- ☐ Buy at price = 275 & Sell at price = 290
- ☒ Buy at price = 260 & Sell at price = 290 ✓
- ☐ Buy at price = 230 & Sell at price = 255

✓ An array Price[] = {10, 22, 5, 75, 65, 80} denoting the daily stock price. What is the maximum profit by buying and selling a share of that stock at most twice? \*

2/2

- ☐ Max profit=75
- ☐ Max profit=80
- ☒ Max profit=87 ✓
- ☐ Not possible to earn

✓ An array Price[] = {2, 30, 15, 10, 8, 25, 80} denoting the daily stock price. What is the maximum profit by buying and selling a share of that stock at most twice? \*

2/2

- ☐ Max profit=80
- ☒ Max profit=100 ✓
- ☐ Max profit=105
- ☐ Not possible to earn

✓ An array Price[] = {100, 30, 15, 10, 8, 25, 80} denoting the daily stock price. What is the maximum profit by buying and selling a share of that stock at most twice? \*

2/2

- ☒ Max profit=72 ✓
- ☐ Max profit=92
- ☐ Max profit=70
- ☐ Not possible to earn

✓ An array Price[] = {90, 80, 70, 60, 50} denoting the daily stock price. What is the maximum profit by buying and selling a share of that stock at most twice? \*

2/2

- ☐ Max profit=40
- ☐ Max profit=30
- ☐ Max profit=10
- ☒ Not possible to earn ✓

✗ An array Price[] = {12, 11, 13, 9, 12, 8, 14, 13, 15} denoting the daily stock price. What is the maximum profit by buying and selling a share of that stock at most twice? \*

0/2

- ☐ Max profit=7
- ☒ Max profit=12 ✗
- ☐ Max profit=10
- ☐ Max profit=3

Correct answer

- ☒ Max profit=10

✓ What is the time complexity of a program that takes an integer argument  $n$  and returns all the primes between 1 and that integer using trial-division method. \*

2/2

- ☐  $O(n * n)$
- ☐  $O(n^{(1/2)})$
- ☒  $O(n^{(3/2)})$  ✓
- ☐  $O(n \log n)$

✓ What is the time complexity of a program that takes an integer argument  $n$  and returns all the primes between 1 and that integer using sieve method. \*

2/2

- ☐  $O(n^{(3/2)})$
- ☐  $O(n \log n)$
- ☐  $O(\log n)$
- ☒  $O(n \log \log n)$  ✓

✓ What is the space complexity of a program that takes an integer argument and returns all the primes between 1 and that integer using sieve method. \*

2/2

- ☒  $O(n)$  ✓
- ☐  $O(n^{(1/2)})$
- ☐  $O(n \log n)$
- ☐  $O(n \log \log n)$

✓ A program that takes an integer argument and returns all the primes between 1 and that integer using improve sieve method. What is the size of a boolean array to encode the candidates, i.e., if the  $i$ th entry in the array is true, then  $i$  is potentially a prime? \*

2/2

- ☐ size =  $n$
- ☐ size =  $n+1$
- ☒ size =  $\text{Math.floor}(0.5 * (n - 3)) + 1$  ✓
- ☐ size =  $\text{Math.floor}(0.5 * n) + 1$

This content is neither created nor endorsed by Google. [Terms of Service](#) [Privacy Policy](#)

Google Forms

## Practice Quiz Test-10 (CSW 2)

Total points 20/20

✓ Given the array[] = {1,2,3,4} and a permutation array p[] = {3,2,1,0}. What 2/2  
is the output after permute the given array[] based on the permutation  
p[]? \*

- ☒ (4, 3, 2, 1) ✓
- ☐ (4, 3, 1, 2)
- ☐ (1, 2, 3, 4)
- ☐ (1, 2, 4, 3)

✓ Given the array[] = {11, 32, 3, 42} and a permutation array p[] = {2, 3, 0, 1}. 2/2  
What is the output after permute the given array[] based on the  
permutation p[]? \*

- ☐ {11, 32, 3, 42}
- ☒ {3, 42, 11, 32} ✓
- ☐ {3, 11, 32, 42}
- ☐ {3, 11, 42, 32}

✓ Given the array[] = {a, b, c, d} and a permutation array p[] = {2, 0, 1, 3}. 2/2  
What is the output after permute the given array[] based on the  
permutation p[]? \*

- ☐ {a, b, c, d}
- ☐ {b, c, d, a}
- ☒ {b, c, a, d} ✓
- ☐ {b, d, c, a}

✓ Given the array[] = {a, b, c, d} and a permutation array p[] = {3, 1, 2, 0}. 2/2  
What is the output after permute the given array[] based on the  
permutation p[]? \*

- ☐ {a, b, c, d}
- ☐ {b, c, a, d}
- ☐ {b, c, d, a}
- ☒ {d, b, c, a} ✓

✓ Compute the next permutation of an input {6, 2, 1, 5, 4, 3, 0} under 2/2  
dictionary ordering. \*

- ☒ {6, 2, 3, 0, 1, 4, 5} ✓
- ☐ {6, 2, 1, 0, 3, 4, 5}
- ☐ {6, 2, 1, 5, 4, 3, 0}
- ☐ {6, 2, 3, 5, 4, 1, 0}

✓ Compute the next permutation of an input {0, 1, 2, 5, 3, 3, 0} under 2/2  
dictionary ordering. \*

- ☐ { Empty }
- ☐ {0, 1, 2, 5, 3, 3, 0}
- ☐ {0, 1, 3, 5, 3, 2, 0}
- ☒ {0, 1, 3, 0, 2, 3, 5} ✓

✓ Compute the next permutation of an input {6, 5, 4, 3, 2, 3, 2, 1, 0} under 2/2  
dictionary ordering. \*

- ☐ { Empty }
- ☒ {6, 5, 4, 3, 3, 0, 1, 2, 2} ✓
- ☐ {6, 5, 4, 3, 3, 2, 2, 1, 0}
- ☐ {6, 5, 4, 3, 3, 2, 2, 0, 1}

✓ Compute the next permutation of an input {9, 5, 4, 3, 1} under dictionary 2/2  
ordering. \*

- ☒ { Empty } ✓
- ☐ {9, 5, 4, 3, 1}
- ☐ {9, 5, 4, 1, 3}
- ☐ {9, 5, 3, 4, 1}
- ☐ {9, 5, 3, 1, 4}

✓ A program that takes an integer argument and returns all the primes 2/2  
between 1 and that integer using general sieve method. What is the size  
of a boolean array to encode the candidates, i.e., if the  $i$ th entry in the  
array is true, then  $i$  is potentially a prime? \*

- ☐ size = n
- ☒ size = n+1 ✓
- ☐ size =  $\text{Math.floor}(0.5 * (n - 3)) + 1$
- ☐ size =  $\text{Math.floor}(0.5 * n) + 1$

✓ A program that takes an integer argument and returns all the primes 2/2  
between 1 and that integer using improve sieve method. What is the size  
of a boolean array to encode the candidates, i.e., if the  $i$ th entry in the  
array is true, then  $i$  is potentially a prime? \*

- ☐ size = n
- ☐ size = n+1
- ☒ size =  $\text{Math.floor}(0.5 * (n - 3)) + 1$  ✓
- ☐ size =  $\text{Math.floor}(0.5 * n) + 1$

## Practice Quiz Test-11 (CSW 2)

Total points 28/28

✓ What is the time complexity to delete an element at index  $i$  from an `ArrayList`? \*

 2/2

- ☐  $O(n^2)$
- ☒  $O(1)$
- ☐  $O(\log n)$
- ☐  $O(2)$

✓ Given an array of non-negative integers  $A$ , you are initially positioned at the array's first index. Each element in the array represents your maximum advance length at that position. Determine if you can reach the last index. Determine the output for the input:  $A = [2, 3, 1, 1, 4]$ . \*

 2/2

- ☒ True
- ☐ False

✓ Given an array of non-negative integers  $A$ , you are initially positioned at the array's first index. Each element in the array represents your maximum advance length at that position. Determine if you can reach the last index. Determine the output for the input:  $A = [3, 2, 1, 0, 4]$ . \*

 2/2

- ☐ True
- ☒ False

✓ You are given an array of prices where  $prices[i]$  is the price of a given stock on the  $i$ th day. Find the maximum profit you can achieve by buying and selling a stock once and twice, respectively. If you cannot achieve any profit, return 0. Input :  $prices = [12, 11, 13, 9, 12, 8, 14, 13, 15]$  \*

 2/2

- ☐ 5, 9
- ☒ 7, 10
- ☐ 8, 9
- ☐ 8, 10

✓ Compute the next permutation of an input  $[0, 1, 2, 5, 3, 3, 0]$  under dictionary ordering. \*

 2/2

- ☐  $\{0, 1, 2, 0, 3, 3, 5\}$
- ☐  $\{0, 1, 2, 5, 3, 3, 0\}$
- ☐  $\{0, 1, 3, 5, 3, 2, 0\}$
- ☒  $\{0, 1, 3, 0, 2, 3, 5\}$

✓ Given an array  $A[] = \{3, 7, 5, 11, 13\}$ . How many equally likely subset of size 3 is obtained from the array  $A[]$ ? \*

 2/2

- ☐ 5
- ☐ 6
- ☒ 10
- ☐ 120

✓ Compute the next permutation of an input  $[8, 6, 5, 2, 0]$  under dictionary ordering. \*

 2/2

- ☒ { Empty }
- ☐  $\{8, 6, 5, 2, 0\}$
- ☐  $\{8, 5, 6, 0, 2\}$
- ☐  $\{8, 6, 2, 5, 0\}$
- ☐  $\{8, 6, 2, 0, 5\}$

✓ What is the time complexity in offline random sampling of the input array of size  $n$  and returns a subset of size  $k$  of the array elements? \*

 2/2

- ☐  $O(n)$
- ☐  $O(n+k)$
- ☐  $O(n^2k)$
- ☒  $O(k)$

✓ Compute random permutations of  $A[] = \{0, 1, \dots, n-1\}$  with equal probability, where  $n=3$ . Random number generator returns integers 1, 2, 3, and 3 respectively. \*

 2/2

- ☐  $\{1, 0, 2, 3\}$
- ☐  $\{1, 2, 0, 3\}$
- ☒  $\{1, 2, 3, 0\}$
- ☐  $\{0, 1, 2, 3\}$

✓ What is the output of the following code? \*

 2/2

```
import java.util.*;
public class Output {
    public static void main(String[] args) {
        HashMap<Integer, Integer> map=new HashMap<>();
        map.put(50, 2);
        map.put(20, 2);
        map.put(50, 2);
        map.put(40, 4);
        map.put(50, 4);
        map.put(50, 5);
        System.out.println(map);
    }
}
```

- ☒  $\{50=5, 20=6, 40=4, 10=1\}$
- ☐  $\{50=5, 20=2, 40=4, 10=1\}$
- ☐  $\{50=5, 20=2, 20=6, 40=4, 10=1\}$
- ☐  $\{50=5, 20=2, 20=6, 40=4, 20=2, 10=1\}$