

# ASSIGMENT DATA STRUCTURE I

Student1 : fares ahmed amer || ID1 : 2405404

Student2 : yehya mohamed abduallah || ID2: 2405144

Student3 : ziad hassan || ID3:2405143

Student4: bishoy magdy fawzy || ID4: 2405128

Student5: hazem mahmoud mohamed || ID5: 2405407

# SENARIO FOR EACH CODE

## 1<sup>ST</sup> CODE

```
public class DataStructureAssiment {

    /**
     * @param args the command line arguments
     */
    public static void main(String[] args) {
        // name : fares ahmed amer
        // id : 2405404
        // Question 1
        int[] numbers = {1, 2, 2, 3, 3, 3, 4, 5};
        int sum = 0;

        for (int num : numbers) {
            sum += num;
        }

        System.out.println("Sum of array elements: " + sum);
    }
}
```

## OUTPUT:

Sum of array elements: 23

## 2ND CODE

```
// Question 2

int[] temp = new int[numbers.length];
int j = 0;

for (int i = 0; i < numbers.length - 1; i++) {
    if (numbers[i] != numbers[i + 1]) {
        temp[j] = numbers[i];
        j++;
    }
}
temp[j] = numbers[numbers.length - 1];
j++;

System.out.print("Array without duplicates: [");
for (int i = 0; i < j-1; i++) {
    System.out.print(temp[i]);
    System.out.print(", ");
}
System.out.println("]");
```

## OUTPUT:

Array without duplicates: [1, 2, 3, 4, 5]

## 3RD CODE

```
// -----
// name : yahya mohamed abdullah
// id : 2405144
// Question 3

int key=1;
int count=0;
for (int num : numbers) {
    if (num != key)
        count++;
}
int[] result = new int[count];
int index = 0;

for (int num : numbers) {
    if (num != key) {
        result[index++] = num;
    }
}
System.out.println("the result array : "+ Arrays.toString(result));
```

## OUTPUT:

```
the result array : [2, 2, 3, 3, 3, 4, 5]
```

## 4TH CODE

```
// -----
// name : ziad hassan
// id : 2405143
// Question 4

ArrayList<Integer> list11 = new ArrayList<>();

// Add all numbers from the array to the list
for (int num : numbers) {
    list11.add(num);
}

// Calculate the sum
int sum12 = 0;
for (int check : list11) {
    sum12 += check;
}

// Print the result
System.out.println("Sum of ArrayList elements: " + sum12);
```

## OUTPUT:

Sum of ArrayList elements: 23

## 5TH CODE

```
// -----
// name : bishoy magdy fawzy
// id : 2405128
// Question 5

ArrayList<Integer> result1 = new ArrayList<>();
for (Integer num : numbers) {
    if (!result1.contains(num)) {
        result1.add(num);
    }
}

System.out.println("Array without duplicate using arrayList:"+result1);
```

## OUTPUT:

Array without duplicate using arrayList:[1, 2, 3, 4, 5]

## 6TH CODE

```
// name : hazem mahmoud mohamed
// id : 2405407
// Question 6

int k = 1;

ArrayList<Integer> list1 = new ArrayList<>();
for (int num : numbers) {
    list1.add(num);
}

ArrayList<Integer> results = new ArrayList<>();

for (int num11 : list1) {
    if (num11 != k) {
        results.add(num11);
    }
}

System.out.println("Output: " + results);
```

## OUTPUT:

Output: [2, 2, 3, 3, 3, 4, 5]

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## SOURCE CODE

[source code link](#)