

// Ahmed M. Al-Shaikh Khalil - 120220263 - Lab01 - Arrays

// Exercise (1) Solution:

```
public class Main {  
  
    public static void main(String[] args) {  
        int[] list = {7, -2, 5, -1, 1, 8, 0, 6, 1};  
  
        // Print the Array  
        System.out.print("Array is: {");  
        for (int i = 0; i < list.length; i++) {  
            if (i < list.length - 1) {  
                System.out.print(list[i] + ", ");  
            } else {  
                System.out.println(list[i] + "}");  
            }  
        }  
  
        int minimum = list[0];  
        for (int i = 1; i < list.length; i++) {  
            if (list[i] < minimum) {  
                minimum = list[i];  
            }  
        }  
        System.out.println("Minimum element: " + minimum);  
  
        int maximum = list[0];  
        for (int i = 1; i < list.length; i++) {  
            if (list[i] > maximum) {  
                maximum = list[i];  
            }  
        }  
        System.out.println("Maximum element: " + maximum);  
    }  
}
```

OUTPUT:

Array is: {7, -2, 5, -1, 1, 8, 0, 6, 1}

Minimum element: -2

Maximum element: 8

// Exercise (2) Solution:

```
public class Main {

    public static void main(String[] args) {

        int[] firstArray = {1, 2, 3, 7, 0, 5, 1, 2};
        int[] secondArray = {4, 5, 6, 4, 4, 1, 5};

        int[] mergedArray = new int[firstArray.length +
secondArray.length];

        // Print First Array
        System.out.print("First Array: {");
        for (int i = 0; i < firstArray.length; i++) {
            if (i < firstArray.length - 1) {
                System.out.print(firstArray[i] + ", ");
            } else {
                System.out.println(firstArray[i] + "}");
            }
        }

        // Print Second Array
        System.out.print("Second Array: {");
        for (int i = 0; i < secondArray.length; i++) {
            if (i < secondArray.length - 1) {
                System.out.print(secondArray[i] + ", ");
            } else {
                System.out.println(secondArray[i] + "}");
            }
        }

        // Put First Array on Merged Array
        for (int i = 0; i < firstArray.length; i++) {
            mergedArray[i] = firstArray[i];
        }

        // Put Second Array on Merged Array
        for (int i = 0; i < secondArray.length; i++) {
            mergedArray[i + firstArray.length] = secondArray[i];
        }

        // Print Merged Array
        System.out.print("Merged Array: {");
        for (int i = 0; i < mergedArray.length; i++) {
            if (i < mergedArray.length - 1) {
                System.out.print(mergedArray[i] + ", ");
            } else {
                System.out.println(mergedArray[i] + "}");
            }
        }
    }
}
```

OUTPUT:

First Array: {1, 2, 3, 7, 0, 5, 1, 2}

Second Array: {4, 5, 6, 4, 4, 1, 5}

Merged Array: {1, 2, 3, 7, 0, 5, 1, 2, 4, 5, 6, 4, 4, 1, 5}

//Exercise (3) Solution:

```
public class Main {  
    public static void main(String[] args) {  
        int[] basicArray = {6, 1, -7, 0, -4, 6, -7, 5, 0, 8, 8, 9,  
9, 7, 7};  
        int count = 0;  
  
        for (int i = 0; i < basicArray.length; i++) {  
            for (int j = i + 1; j < basicArray.length; j++) {  
                if (basicArray[j] == basicArray[i]) {  
                    count++;  
                    break;  
                }  
            }  
        }  
  
        int[] newArr = new int[basicArray.length - count];  
        int k = 0;  
  
        // Rewrite the Array with removing duplications  
        for (int i = 0; i < basicArray.length; i++) {  
            boolean isDuplications = false;  
            for (int j = 0; j < i; j++) {  
                if (basicArray[i] == basicArray[j]) {  
                    isDuplications = true;  
                }  
            }  
            if (!isDuplications) {  
                newArr[k] = basicArray[i];  
                k++;  
            }  
        }  
  
        // Print Basic Array  
        System.out.print("Basic Array: {");  
        for (int i = 0; i < basicArray.length; i++) {  
            if (i < basicArray.length - 1) {  
                System.out.print(basicArray[i] + ", ");  
            } else {  
                System.out.println(basicArray[i] + "}");  
            }  
        }  
  
        // Print Array after removing duplications  
        System.out.print("Array after removing duplications: {");
```

```
        for (int i = 0; i < newArr.length; i++) {  
            if (i < newArr.length - 1) {  
                System.out.print(newArr[i] + ", ");  
            } else {  
                System.out.println(newArr[i] + "}");  
            }  
        }  
    }  
}
```

OUTPUT:

Basic Array: {6, 1, -7, 0, -4, 6, -7, 5, 0, 8, 8, 9, 9, 7, 7}

Array after removing duplications: {6, 1, -7, 0, -4, 5, 8, 9, 7}