CAI710 TASKS

By Hamad Aljenibi

ARRAY SORT IN ASCENDING ORDER

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```java
import java.util.Arrays;
public class HelloWorld{

    public static void main(String []args){
        int [] num = new int [] {100, 500, 200, 150, 50, 10,2,5000};
        Arrays.sort(num);
       System.out.println("array sorted in ascending order: ");
       for (int i = 0; i < num.length; i++) {
           System.out.println(num[i]); }
       }
}

//Hamad Mohammed Hamad Aljenibi_2013150794
```

Terminal

```
array sorted in ascending order:
2
10
50
100
150
200
500
5000
```

ARRAYTRAVARSAL

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```java
//Hamad Mohammed Aljenibi_2013150794
public class ArrayTraversal{
    public static void main(String[] args){

        int[] numbers = {10, 20, 30, 40, 50};

        //Traverse using for loop with indexes
        for(int i = 0; i <numbers.length; i++) {
            System.out.println("Index" + i + ": " + numbers[i] + "\n");

        }
        System.out.println("\n");

        //Travese using a while loop
        int i = 0;
        while(i < numbers.length){
            System.out.println(numbers[i]);
            i++;
        }
    }
}
```

Terminal

```
Index0: 10

Index1: 20

Index2: 30

Index3: 40

Index4: 50



10
20
30
40
50
```

FIRST CLASSWORK

```java
/* Online Java Compiler and Editor */
public class HelloWorld{

    public static void main(String []args){
       String[] std = {"Hamad", "18", "12CAI", "ATS AJMAN"};
       System.out.println("Array length = " + std.length);

       std[0] = "Mohammed";

       System.out.println("Index zero Value = " +std[0]);
       for (int i = 0; i < std.length; i++) {
           System.out.println(std[i]);
       }

       }

    }
//Hamad Mohammed Aljenibi_2013150794
```

```
Array length = 4
Index zero Value = Mohammed
Mohammed
18
12CAI
ATS AJMAN
```

MATRIX 2D ARRAY

```java
//Hamad Mohammed Aljenibi_2013150794
public class Main {
    public static void main(String[] args) {
        // Create a 2D array (3x3 matrix)
        int[][] matrix = {
            {1, 2, 3},
            {4, 5, 6},
            {7, 8, 9}
        };
        System.out.println("Original 2D array:");
        printMatrix(matrix);
        int element = matrix[1][2];
        System.out.println("Element at [1][2]: " + element);

        matrix[1][2] = 99;

        System.out.println("2D array after modification:");
        printMatrix(matrix);
    }

    public static void printMatrix(int[][] matrix) {
        for (int i = 0; i < matrix.length; i++) {
            for (int j = 0; j < matrix[i].length; j++) {
                System.out.print(matrix[i][j] + " ");
            }
            System.out.println();
        }
    }
}
```

```
Original 2D array:
1 2 3
4 5 6
7 8 9
Element at [1][2]: 6
2D array after modification:
1 2 3
4 5 99
7 8 9
```

OVERRIDE

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```java
//Hamad Mohammed Aljenibi
// Interface Shape
interface Shape {
    void draw();
}

// Class Circle implements Shape
class Circle implements Shape {
    @Override
    public void draw() {
        System.out.println("Drawing a circle");
    }
}

// Main class
public class Main {
    public static void main(String[] args) {
        Circle myShape = new Circle();
        myShape.draw();  // Output: Drawing a circle
    }
}
```

Terminal

```
Drawing a circle
```

SUPER KEYWORD

```java
//Hamad Mohammed Aljenibi - 2013150794 - 12/CAI - 784200780964100
// Parent class
class Vehicle {
    String type;

    // Constructor of the parent class
    Vehicle(String type) {
        this.type = type;
        System.out.println("Vehicle Constructor: Type is " + type);
    }
    // Method in the parent class
    void move() {
        System.out.println("The " + type + " is moving");
    }
}
// Child class
class Car extends Vehicle {
    String brand;
    // Constructor of the child class
    Car(String type, String brand) {
        // Calling the parent class constructor using super()
        super(type);
        this.brand = brand;
        System.out.println("Car Constructor: Brand is " + brand);
    }
    // Overriding the move method of the parent class
    @Override
    void move() {
        super.move(); // Calling the parent class version of the method
```

input

```
Vehicle Constructor: Type is Car
Car Constructor: Brand is Toyota
The Car is moving
The Toyota car is driving
```

SUPER KEYWORD

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Main.java

```java
//Hamad Mohammed Aljenibi _ 2013150794 _ 784-2007-8096410-0
class Country {
    String name;

    Country(String name) {
        this.name = name;
    }

    void displayInfo() {
        System.out.println("Country: " + name);
    }
}

class UAE extends Country {
    String state;

    UAE(String name, String state) {
        super(name);
        this.state = state;
    }

    @Override
    void displayInfo() {
        super.displayInfo();  // Calling the parent class method
        System.out.println("State: " + state);
    }
}

public class Main {
```

input

```
Country: United Arab Emirates
State: AJMAN
```