```java
package basic;

public class input2 {

    public static void main(String[] args) {
        int x = 7;

        long y = x;

        float z = y;
        System.out.println("Before conversion, int value "+x);
        System.out.println("After conversion, long value "+y);
        System.out.println("After conversion, float value "+z);
        }


    }
```

basic
input2
main(String[]) : void

Problems Javadoc Declaration Console

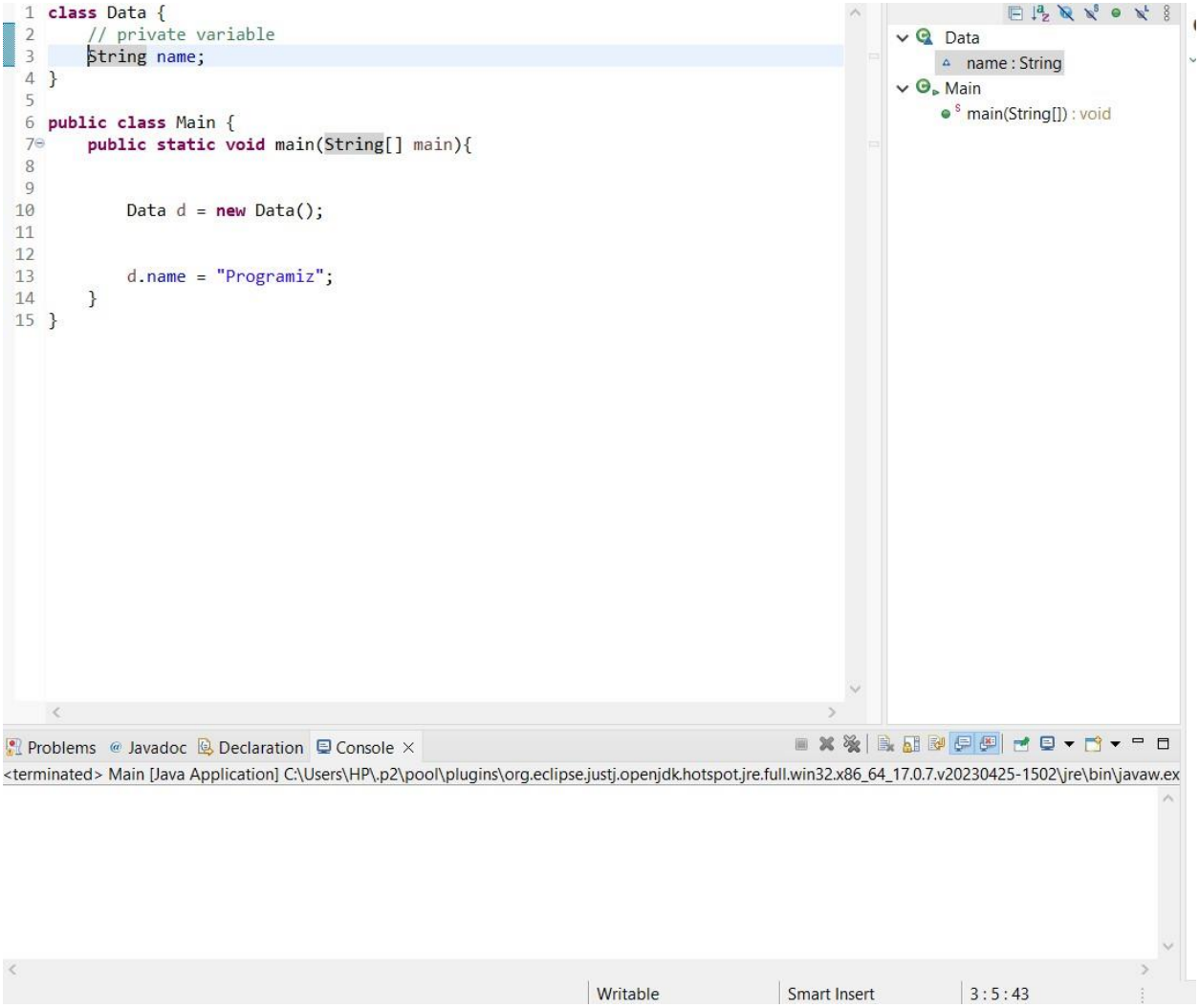
<terminated> input2 [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.e

```
Before conversion, int value 7
After conversion, long value 7
After conversion, float value 7.0
```

Writable | Smart Insert | 9 : 9 : 125

JAVA PROGRAM FOR IMPLICIT AND EXPLICIT TYPE CASTING

JAVA PROGRAMM FOR ACCESS MODIFIER



JAVA PROGRAMM FOR COLECTIONS

```
package CollectioExample;
import java.util.ArrayList;
import java.util.HashMap;
import java.util.HashSet;

public class CollectionExample {

   public static void main(String[] args) {

      ArrayList<String> list = new ArrayList<String>();


      list.add("apple");
      list.add("banana");
      list.add("cherry");
      list.add("date");


      System.out.println("ArrayList:");
      for (String s : list) {
         System.out.println(s);
      }


      HashSet<Integer> set = new HashSet<Integer>();


      set.add(10);
      set.add(20);
      set.add(30);
      set.add(40);


      System.out.println("\nHashSet:");
      for (int i : set) {
         System.out.println(i);
      }


      HashMap<String, Integer> map = new HashMap<String, Integer>();


      map.put("one", 1);
      map.put("two", 2);
      map.put("three", 3);
      map.put("four", 4);
```

```
        System.out.println("\nHashMap:");
        for (String key : map.keySet()) {
            int value = map.get(key);
            System.out.println(key + ": " + value);
        }
    }

}
```

```
HashMap:
four: 4
one: 1
two: 2
three: 3
```

JAVA PROGRAMM FOR MAPS

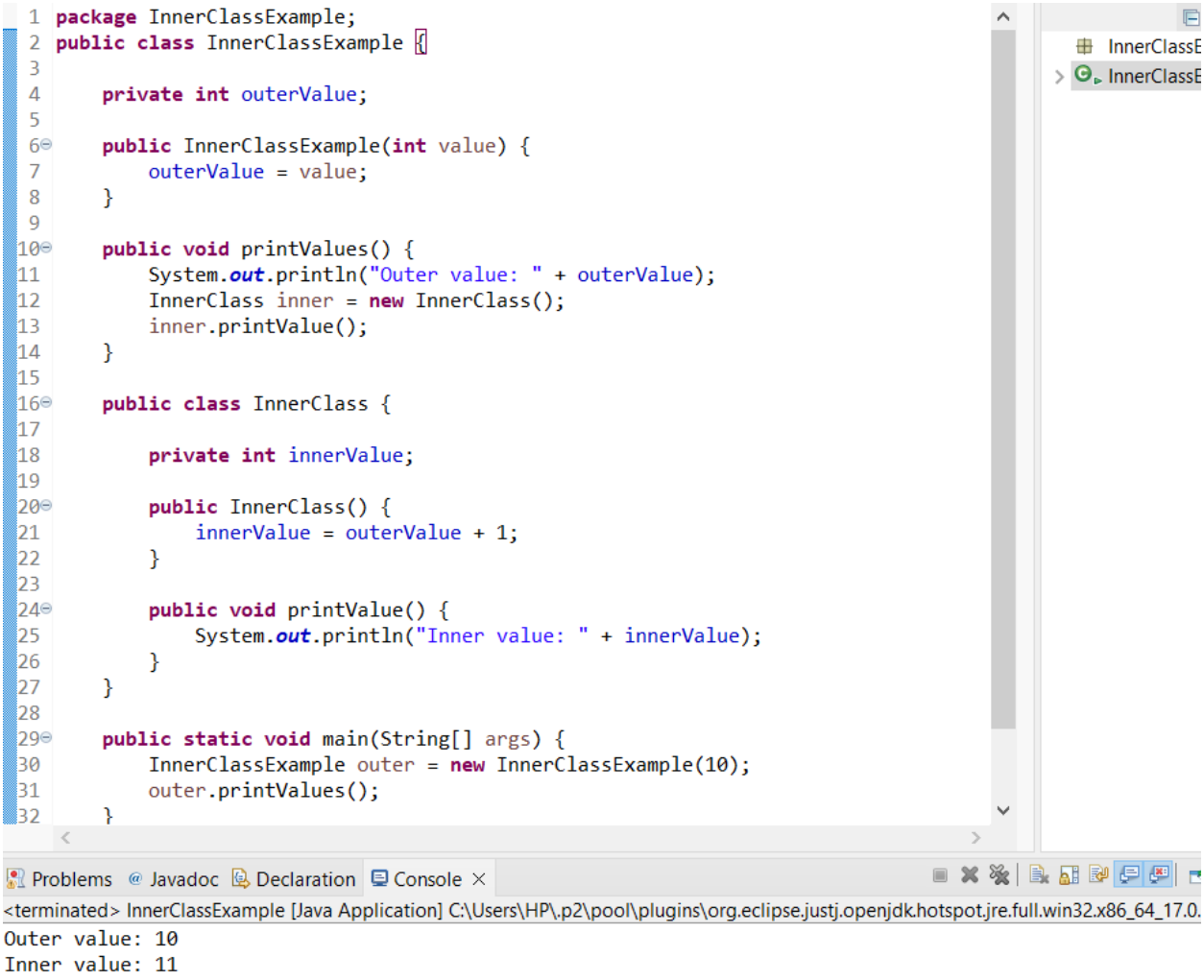
```
package MapExample;
import java.util.HashMap;
import java.util.Map;

public class MapExample {

    public static void main(String[] args) {

        Map<String, Integer> map = new HashMap<String, Integer>();



        map.put("apple", 1);
        map.put("banana", 2);
        map.put("cherry", 3);
        map.put("date", 4);



        System.out.println("Original map:");
        for (String key : map.keySet()) {
            int value = map.get(key);
            System.out.println(key + ": " + value);
        }



        map.put("banana", 5);



        System.out.println("\nModified map:");
```

```
        for (String key : map.keySet()) {
            int value = map.get(key);
            System.out.println(key + ": " + value);
        }

        map.remove("cherry");

        System.out.println("\nFinal map:");
        for (String key : map.keySet()) {
            int value = map.get(key);
            System.out.println(key + ": " + value);
        }
    }

}
```

```
Original map:
banana: 2
date: 4
apple: 1
cherry: 3

Modified map:
banana: 5
date: 4
apple: 1
cherry: 3

Final map:
banana: 5
date: 4
apple: 1
```

JAVA PROGRAMM FOR INNER CLASS

```java
package InnerClassExample;
public class InnerClassExample {

    private int outerValue;

    public InnerClassExample(int value) {
        outerValue = value;
    }

    public void printValues() {
        System.out.println("Outer value: " + outerValue);
        InnerClass inner = new InnerClass();
        inner.printValue();
    }

    public class InnerClass {

        private int innerValue;

        public InnerClass() {
            innerValue = outerValue + 1;
        }

        public void printValue() {
            System.out.println("Inner value: " + innerValue);
        }
    }

    public static void main(String[] args) {
        InnerClassExample outer = new InnerClassExample(10);
        outer.printValues();
    }
```



JAVA PROGRAMM FOR REGULAR EXPRESSION

```java
package RegexExample;
import java.util.regex.Matcher;

public class RegexExample {

    public static void main(String[] args) {

        Pattern pattern = Pattern.compile("\\bcat\\b");


        String text = "The cat sat on the mat.";


        Matcher matcher = pattern.matcher(text);
        while (matcher.find()) {
            System.out.println("Match found at position " + matcher.start());
        }
    }

}
```

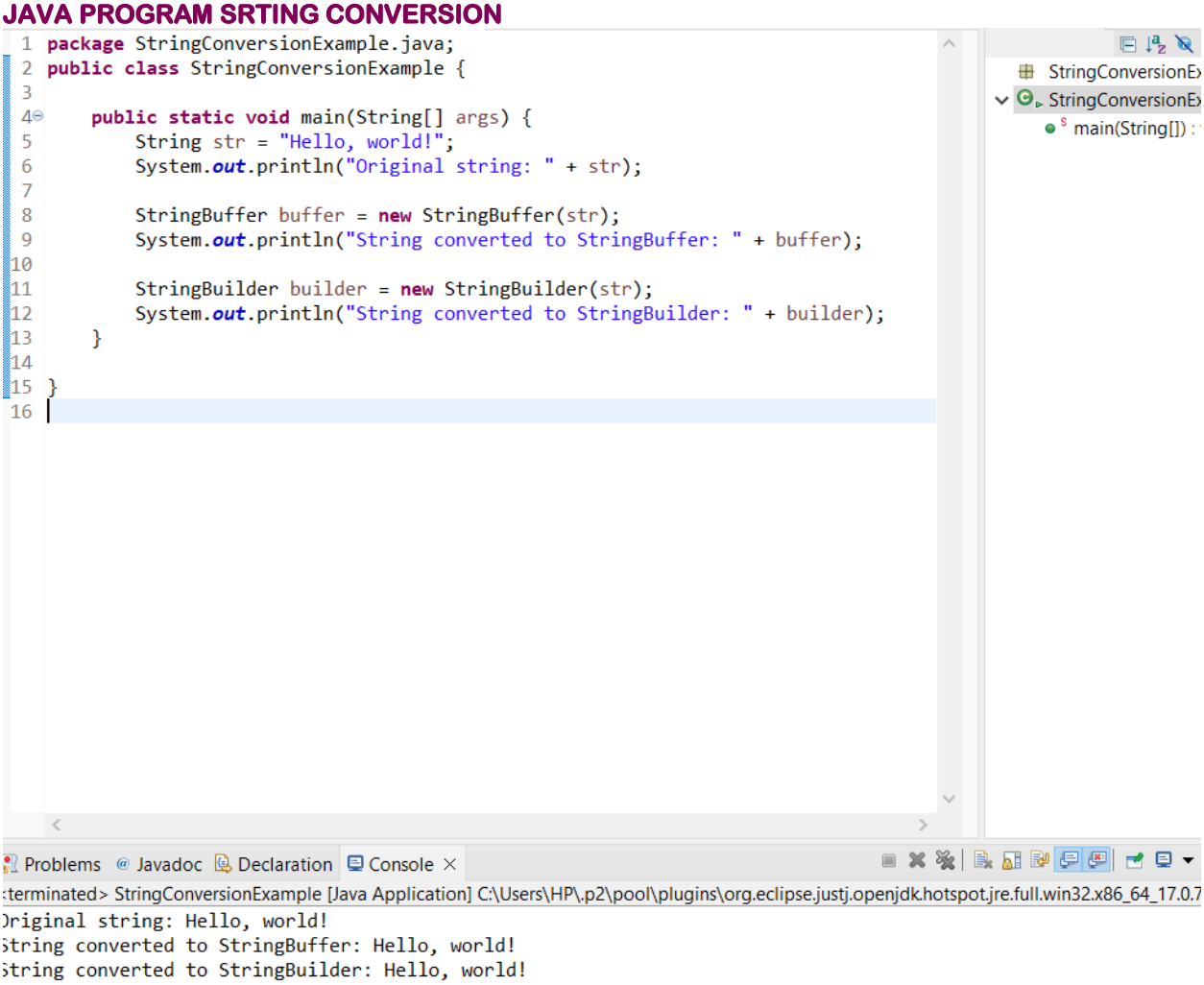
Problems Javadoc Declaration Console

<terminated> RegexExample [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x

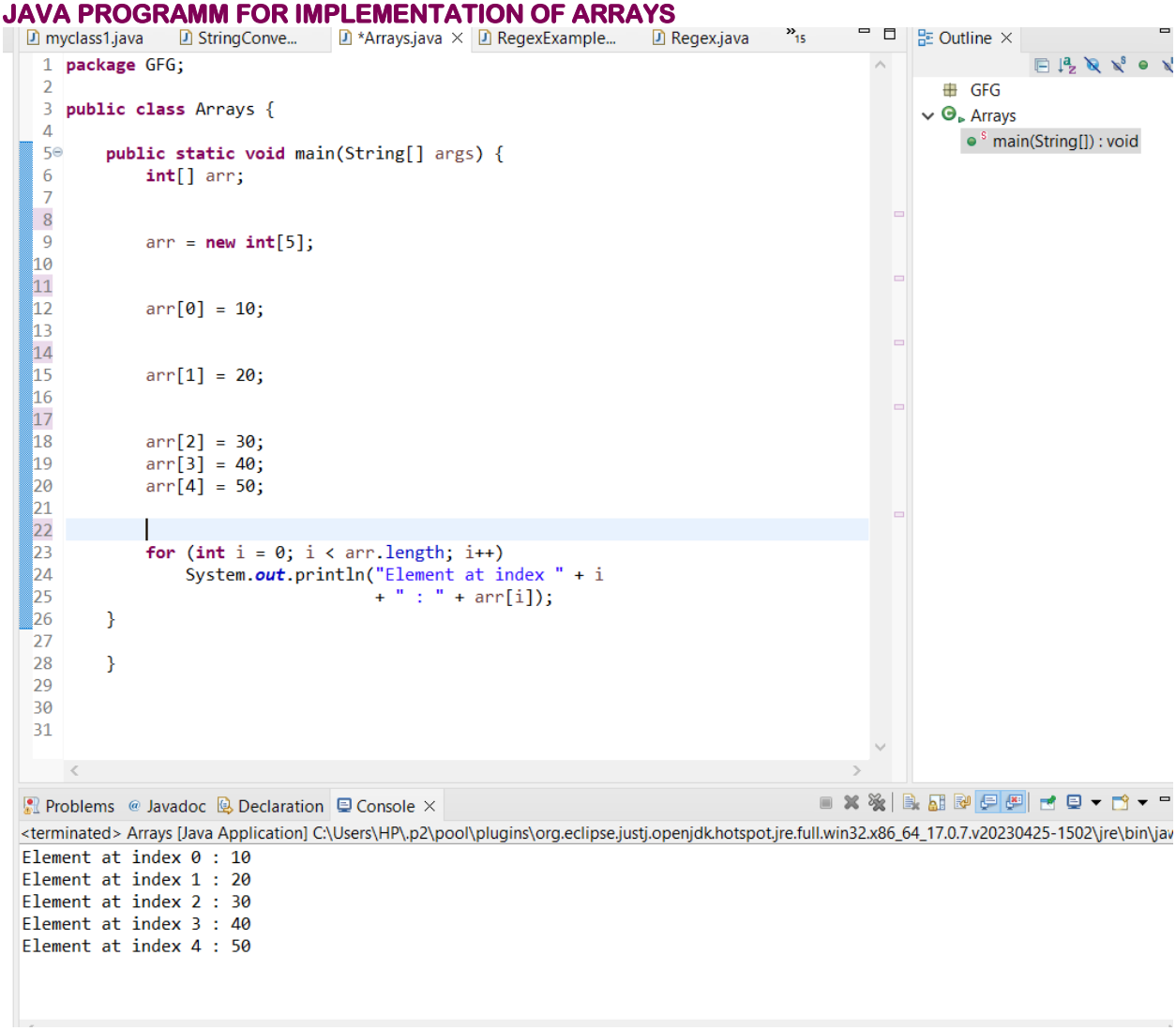
```
Match found at position 4
```

JAVA PROGRAM SRTING CONVERSION

```java
package StringConversionExample.java;
public class StringConversionExample {

    public static void main(String[] args) {
        String str = "Hello, world!";
        System.out.println("Original string: " + str);

        StringBuffer buffer = new StringBuffer(str);
        System.out.println("String converted to StringBuffer: " + buffer);

        StringBuilder builder = new StringBuilder(str);
        System.out.println("String converted to StringBuilder: " + builder);
    }

}
```



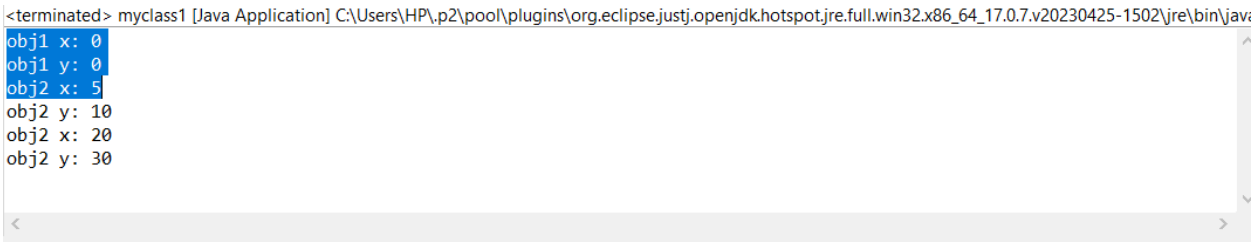
JAVA PROGRAMM FOR IMPLEMENTATION OF ARRAYS




```java
package GFG;

public class Arrays {

    public static void main(String[] args) {
        int[] arr;


        arr = new int[5];


        arr[0] = 10;


        arr[1] = 20;


        arr[2] = 30;
        arr[3] = 40;
        arr[4] = 50;

        for (int i = 0; i < arr.length; i++)
            System.out.println("Element at index " + i
                               + " : " + arr[i]);
    }

    }
```

JAVA PROGRAMM FOR CONSTRUCTOR TYPES

```java
package myclass1;
public class myclass1 {

    private int x;
    private int y;


    public myclass1() {
        x = 0;
        y = 0;
    }


    public myclass1(int x, int y) {
        this.x = x;
        this.y = y;
    }


    public int getX() {
        return x;
    }

    public void setX(int x) {
        this.x = x;
    }

    public int getY() {
        return y;
    }

    public void setY(int y) {
        this.y = y;
    }

    public static void main(String[] args) {

        myclass1 obj1 = new myclass1();
        System.out.println("obj1 x: " + obj1.getX());
        System.out.println("obj1 y: " + obj1.getY());


        myclass1 obj2 = new myclass1(5, 10);
        System.out.println("obj2 x: " + obj2.getX()); // prints "5"
        System.out.println("obj2 y: " + obj2.getY()); // prints "10"


        obj2.setX(20);
        obj2.setY(30);
        System.out.println("obj2 x: " + obj2.getX());
        System.out.println("obj2 y: " + obj2.getY());
    }

}
```


<terminated> myclass1 [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\java
obj1 x: 0
obj1 y: 0
obj2 x: 5
obj2 y: 10
obj2 x: 20
obj2 y: 30

JAVA PROGRAM FOR CALLING A FUNCTION

```java
package basic;

public class MyClass {

    public static void main(String[] args) {

        MyClass myObj = new MyClass();


        myObj.printMessage("Hello, world!");


        int result = myObj.addNumbers(5, 10);
        System.out.println("The result is: " + result);


        int[] numbers = {1, 2, 3, 4, 5};
        int max = myObj.findMax(numbers);
        System.out.println("The maximum number is: " + max);
    }

    public void printMessage(String message) {
        System.out.println(message);
    }

    public int addNumbers(int num1, int num2) {
        return num1 + num2;
    }

    public int findMax(int[] nums) {
        int max = nums[0];
        for (int i = 1; i < nums.length; i++) {
            if (nums[i] > max) {
                max = nums[i];
            }
        }
        return max;
    }

}
```

```
Hello, world!
The result is: 15
The maximum number is: 5
```