Kingdom of Saudi Arabia
Ministry of Education
Umm Al-Qura University
University College in Adhm

المملكة العربية السعودية
وزارة التعليم
جامعة أم القرى
الكلية الجامعية بأضم

Computer Programming Using Java

Course Code: 6803103-3

T.Mariah Khayat

Week Three

LAB

Course Code: 6803103-3
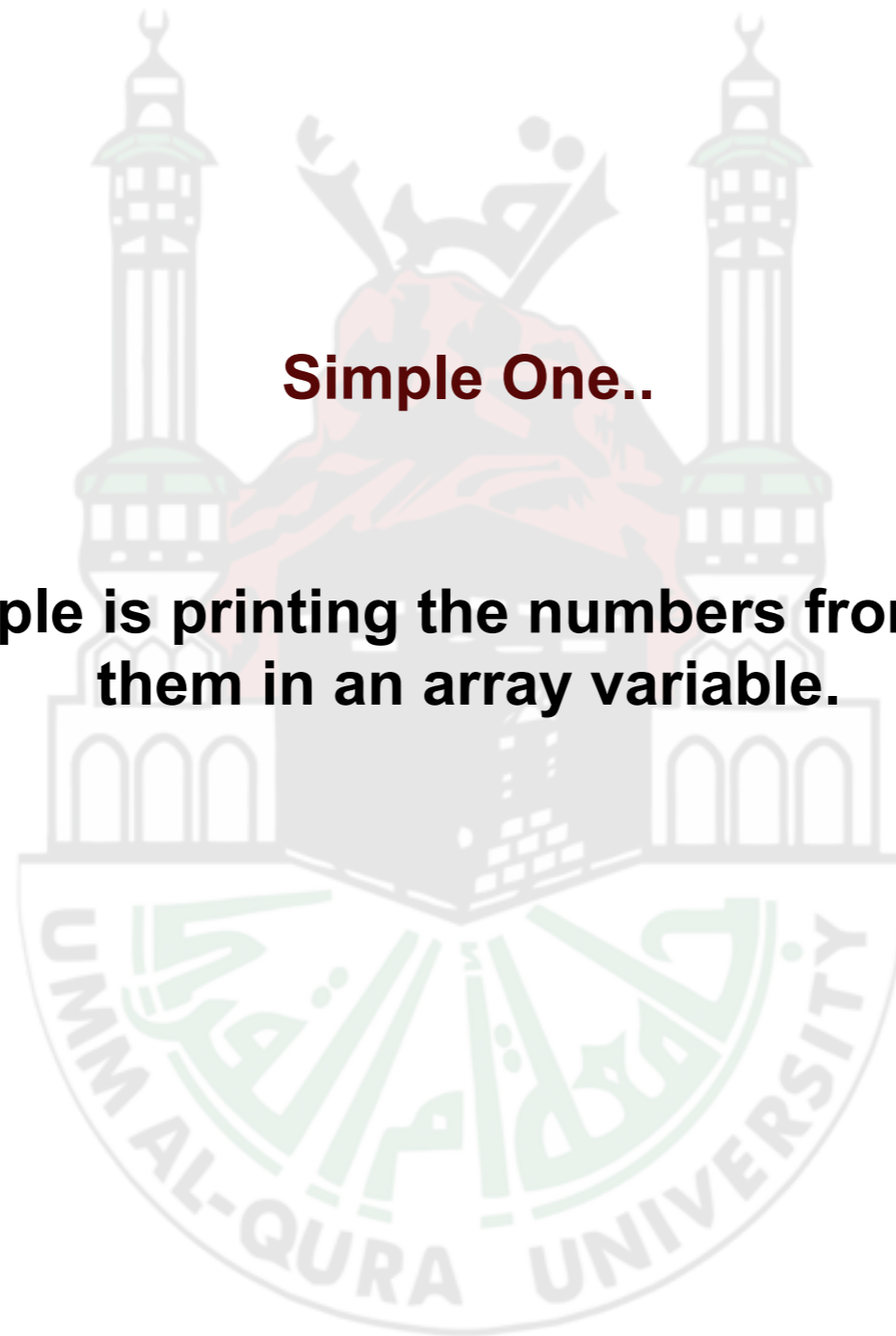
T.Mariah Khayat

Week Three

Arrays

Course Code: 6803103-3

T.Mariah Khayat

Example One:

Simple One..

The following example is printing the numbers from 1 to 4, after storing them in an array variable.

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Example One:

A java program that prints the numbers from 1 to 4, after storing them in an array variable:

```java
public class E1 {

    public static void main(String[] args) {

        int[] numbers = new int[4];

        numbers[0] = 1;
        numbers[1] = 2;
        numbers[2] = 3;
        numbers[3] = 4;

        for (int i = 0; i < numbers.length; i++) {
            System.out.print(numbers[i] + "\n");
        }
    }
}
```

Example One Output:

```
E1.java

1  public class E1 {
2
3      public static void main(String[] args) {
4
5          int[] numbers = new int[4];
6
7          numbers[0] = 1;
8          numbers[1] = 2;
9          numbers[2] = 3;
10         numbers[3] = 4;
11
12         for (int i = 0; i < numbers.length; i++) {
13             System.out.print(numbers[i] + "\n");
14         }
15     }
16 }
```
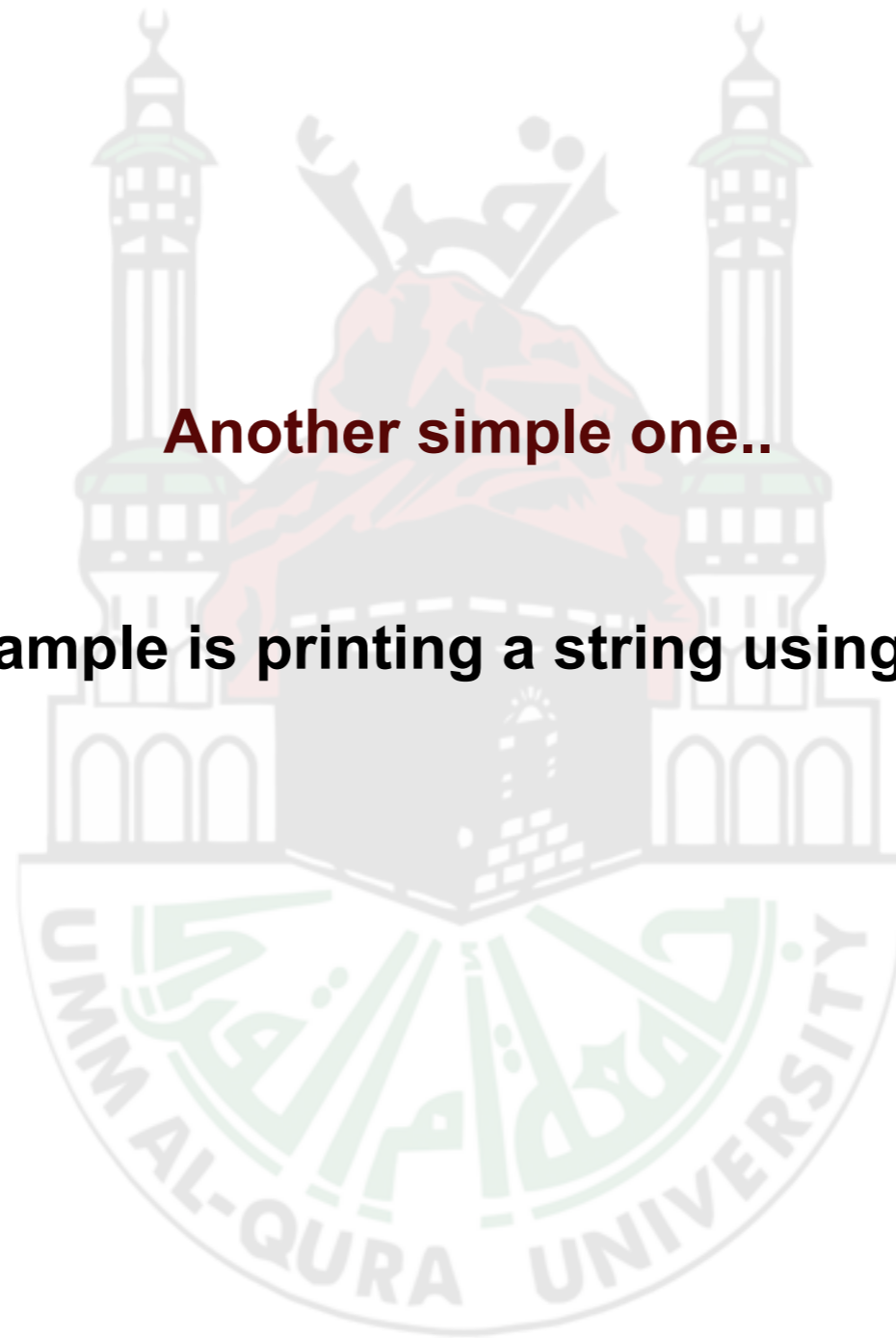
Problems   @ Javadoc   Declaration   Console

```
<terminated> E1 [Java Application] /Library/Java/JavaVirtualMachines/1.6.0.jdk/Content
1
2
3
4
```

Example Two:

Another simple one..

The following example is printing a string using an array variable.

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Example Two:

A java program that print a string, using an array variable:

```java
public class E2 {

    public static void main(String[] args) {

        String[] welcome = new String[6];

        welcome[0] = "Hello!";
        welcome[1] = "You are more than Welcome";
        welcome[2] = "to our 3nd Week";
        welcome[3] = "of CP Classes 'LAB'";
        welcome[4] = "I hope this lecture is going to be very useful for you";
        welcome[5] = "These are just strings that stored in an ARRAY variable";

        for (int j = 0; j < welcome.length; j++) {
            System.out.print(welcome[j] + "\n");
        }

    }
}
```

Example Two Output:

```java
public class E2 {

    public static void main(String[] args) {

        String[] welcome = new String[6];

        welcome[0] = "Hello!";
        welcome[1] = "You are more than Welcome";
        welcome[2] = "to our 3nd Week";
        welcome[3] = "of CP Classes 'LAB'";
        welcome[4] = "I hope this lecture is going to be very useful for you";
        welcome[5] = "These are just strings that stored in an ARRAY variable";

        for (int j = 0; j < welcome.length; j++) {
            System.out.print(welcome[j] + "\n");
        }

    }
}
```

E1.java | *E2.java

Problems @ Javadoc Declaration Console

```
<terminated> E2 [Java Application] /Library/Java/JavaVirtualMachines/1.6.0.jdk/Contents/Home/bin/java (Raj. 13, 1438 AH, 6:50:
Hello!
You are more than Welcome
to our 3nd Week
of CP Classes 'LAB'
I hope this lecture is going to be very useful for you
These are just strings that stored in an ARRAY variable
```

Exercise Three:

Mariah Khayat

Write a simple Java Program that find the min and max numbers in an integer Array?

Suppose that, the array called *numbers* and consists of numbers from 1 to 9

numbers = {1, 2, 3, 4, 5, 6, 7, 8, 9};

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Exercise Three:

Khayat

Write a simple Java Program that find the min and max numbers in an integer Array?

There are more than one way:

-First One:

```java
import java.util.Arrays;
import java.util.Collections;

public class E3MinMax {
public static void main(String[] args) {

    Integer[] numbers = {1, 2, 3, 4, 5, 6, 7, 8, 9};
    int min = (int) Collections.min(Arrays.asList(numbers));
    int max = (int) Collections.max(Arrays.asList(numbers));

    System.out.print("Min number: " + min + "\t");
    System.out.print("Max number: " + max + "\t");

    }
}
```
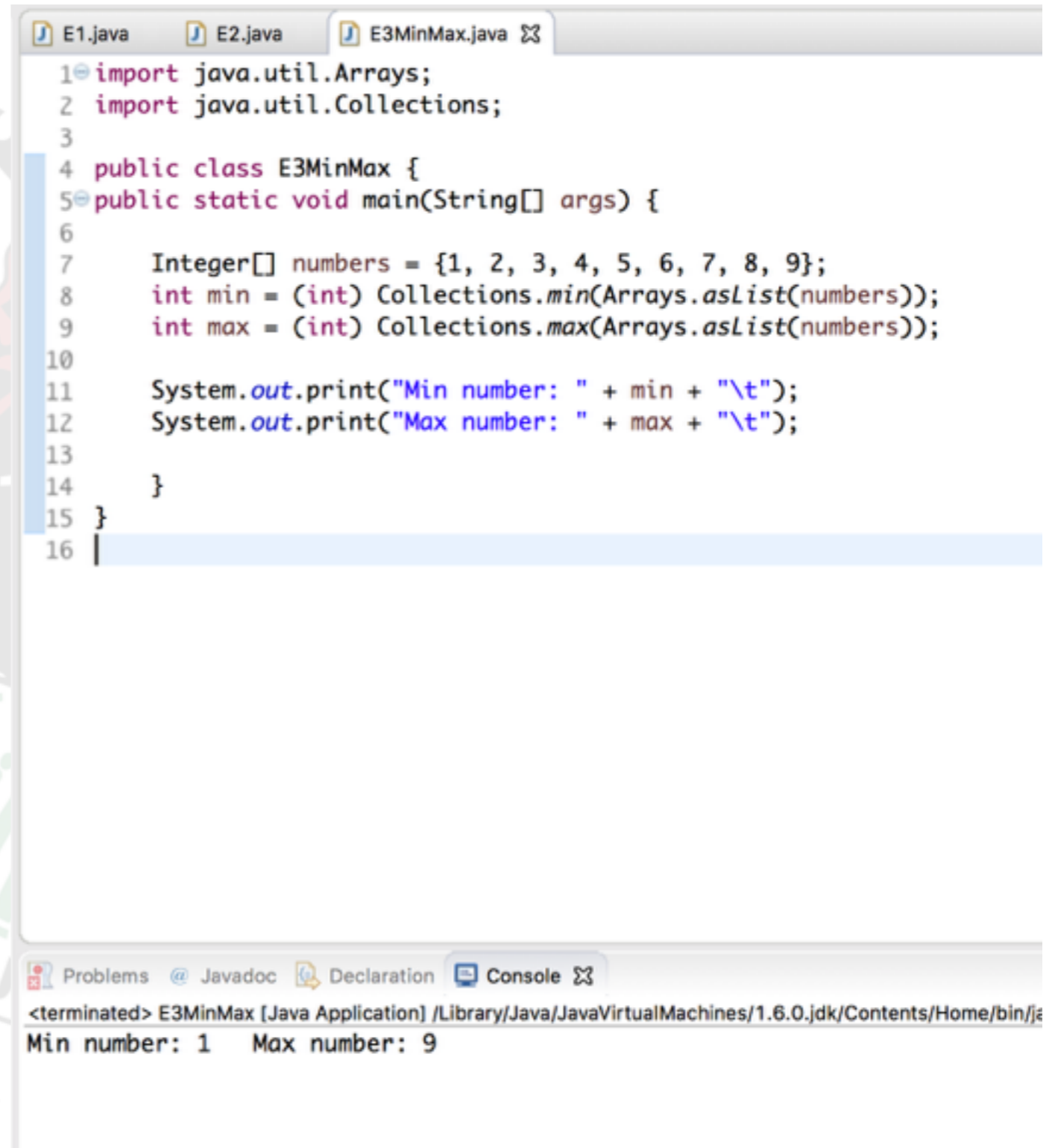
Exercise Three Output:

There are more than one way:

-First One output:

```java
import java.util.Arrays;
import java.util.Collections;

public class E3MinMax {
public static void main(String[] args) {

    Integer[] numbers = {1, 2, 3, 4, 5, 6, 7, 8, 9};
    int min = (int) Collections.min(Arrays.asList(numbers));
    int max = (int) Collections.max(Arrays.asList(numbers));

    System.out.print("Min number: " + min + "\t");
    System.out.print("Max number: " + max + "\t");

    }
}
```

```
Problems  @ Javadoc  Declaration  Console
<terminated> E3MinMax [Java Application] /Library/Java/JavaVirtualMachines/1.6.0.jdk/Contents/Home/bin/j
Min number: 1    Max number: 9
```

Exercise Three: ...aiah Khayat

Write a simple Java Program that find the min and max numbers in an integer Array?

There are more than one way:

-Second One:

```java
import java.util.Arrays;
import java.util.Collections;

public class E3MinMaxWayTwo {
    public static void main(String[] args) {

        Integer[] numbers = {1, 2, 3, 4, 5, 6, 7, 8, 9};

        int getMaxNumber = numbers[0];
        int getMinNumber = numbers[0];

        for (int i = 0; i  < numbers.length; i ++) {
            if (numbers[i] > getMaxNumber) {
                getMaxNumber = numbers[i];
            }

            if (numbers[i] < getMinNumber) {
                getMinNumber = numbers[i];
            }
        }

        System.out.print("Min number: " + getMinNumber + "\n");
        System.out.print("Max number: " + getMaxNumber + "\n");
    }

}
```

Exercise Three Output:

There are more than one way:

-Second One output:

```java
import java.util.Arrays;
import java.util.Collections;

public class E3MinMaxWayTwo {
    public static void main(String[] args) {

        Integer[] numbers = {1, 2, 3, 4, 5, 6, 7, 8, 9};

        int getMaxNumber = numbers[0];
        int getMinNumber = numbers[0];

        for (int i = 0; i  < numbers.length; i ++) {
            if (numbers[i] > getMaxNumber) {
                getMaxNumber = numbers[i];
            }

            if (numbers[i] < getMinNumber) {
                getMinNumber = numbers[i];
            }
        }

        System.out.print("Min number: " + getMinNumber + "\n");
        System.out.print("Max number: " + getMaxNumber + "\n");
    }
}
```
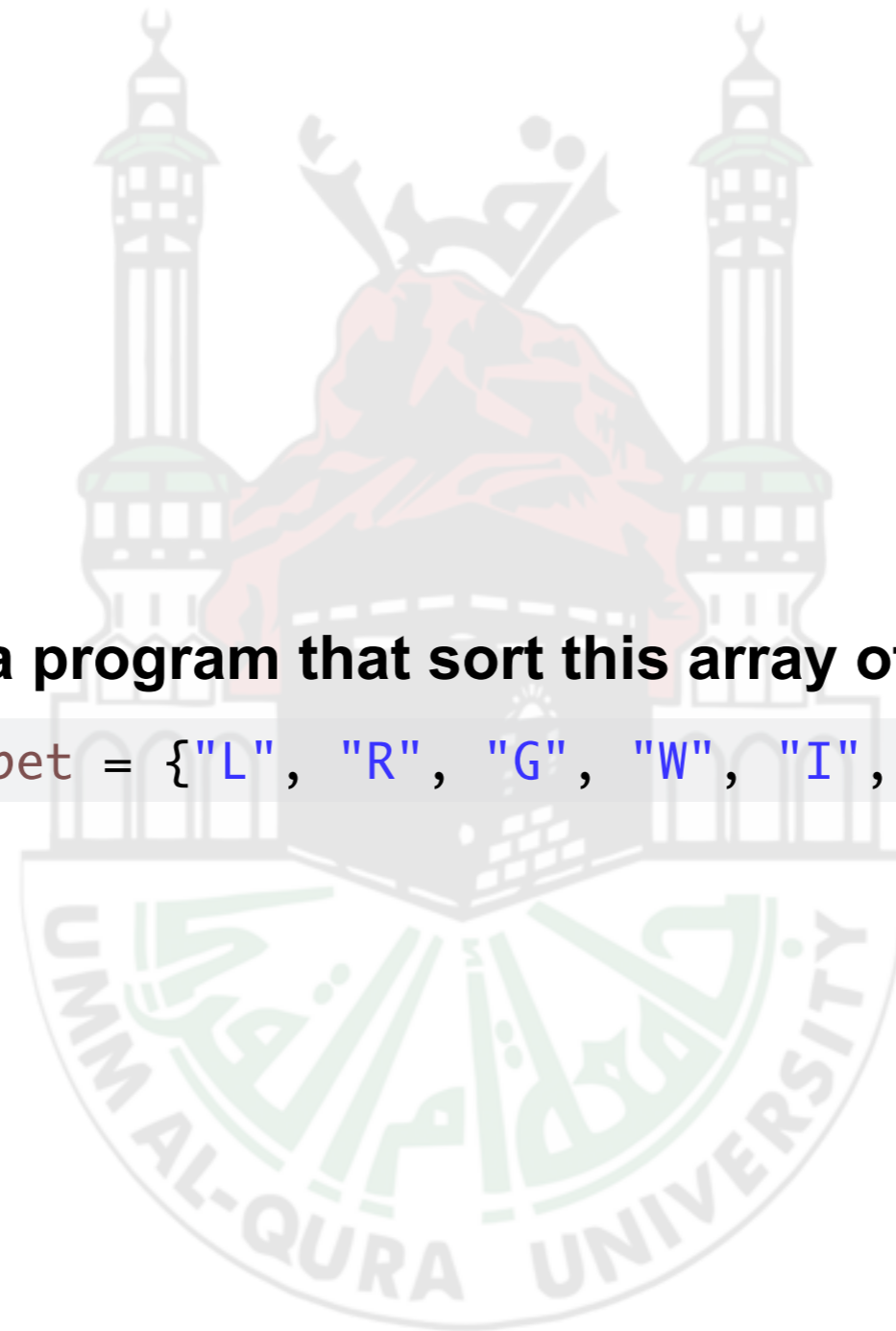
Problems @ Javadoc Declaration Console

<terminated> E3MinMaxWayTwo [Java Application] /Library/Java/JavaVirtualMachines/1.6.0.jdk/Contents/Home
```
Min number: 1
Max number: 9
```

Exercise Four: Mariah Khayat

Write a java program that sort this array of alphabets?

```
alphabet = {"L", "R", "G", "W", "I", "X" };
```

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Exercise Four: Mariah Khayat

Write a java program that sort this array of alphabets?

alphabet = {"L", "R", "G", "W", "I", "X" };

```java
import java.util.Arrays;
public class E4Sort {

public static void main(String[] args){


    String[] alphabet = {"L", "R", "G", "W", "I", "X" };

    System.out.println("Original string array : "+Arrays.toString(alphabet));
    Arrays.sort(alphabet);
    System.out.println("Sorted string array : "+Arrays.toString(alphabet));

    }
}
```

Exercise Four Output:

```java
import java.util.Arrays;
public class E4Sort {

public static void main(String[] args){


    String[] alphabet = {"L", "R", "G", "W", "I", "X" };

    System.out.println("Original string array : "+Arrays.toString(alphabet));
    Arrays.sort(alphabet);
    System.out.println("Sorted string array : "+Arrays.toString(alphabet));


    }
}
```

Tabs: E1.java E2.java E3MinMax.java E3MinMaxWayTwo.java Average.java *E4Sort.java

Problems @ Javadoc Declaration Console

```
<terminated> E4Sort [Java Application] /Library/Java/JavaVirtualMachines/1.6.0.jdk/Contents/Home/bin/java (Raj. 13, 1438 AH, 7:36
Original string array : [L, R, G, W, I, X]
Sorted string array : [G, I, L, R, W, X]
```

Homework

1-Given the declaration:

int []array = {0,1,2,3,4,5,6};

What's the value of array[1]?

a) 1

b) 3

c) 4

d) 5

2-Write a Java program to calculate the average value of array elements?

Suppose this is the array: numbers = {14, 24, 34, 44, 54, 60, 64, 94, 104};

Homework

3-What loop will display each of the numbers in this array on a separate line:

```
float []nums={1.1f, 2.2f, 3.3f};
```

a)for (int i = 0; i < 3; i++) { System.out.print(nums[i] + "\n"); }
b)for (int i = 1; i
c)for (int i = 0; i
d)for (int i = 1; i < 3; i++) { System.out.print(nums[i] + "\n"); }

Thank you

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وصلّى الله وبارك على سيّدنا محمّد

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