**Assignment #4**

Due Date: 20/3/2018 at 23.55

Assignment type: Individual

Given is the following Java class

public class BinarySearch {

    public static int search(int[] collection, int value) {

        int size = collection.length;

        int lower = 0;

        int upper = size - 1;

        int middle;

        while (lower <= upper) {

            middle = (lower + upper) / 2;

            if (collection [middle] > value) {

                upper = upper - 1;

            } else if (collection [middle] < value) {

                lower = middle + 1;

            } else // we found the data

                return middle;

        }

        return -1;

    }

}

**Question #1**

**Testing a class using Eclipse and Junit.**

1. Did the program pass all the Junit test cases? Include a screen capture of the test results (50 pts)
2. If the class did not pass the test cases, how many of them failed. (25 pts)
3. If the class did not pass the test cases, can you located the problem? (25 pts)

Given are also the following test cases which have previously passed

|  |  |  |
| --- | --- | --- |
| **Array contents** | **Search value** | **Expected result** |
| 11, 22, 33, 44, 55, 66, 77 | 11 | 0 |
|  | 44 | 3 |
|  | 77 | 6 |
|  | 33 | 2 |
|  | 9 | -1 |
|  | 45 | -1 |
|  | 100 | -1 |
| 11, 22, 33, 44, 55, 66, 77, 88 | 11 | 0 |
|  | 44 | 3 |
|  | 55 | 4 |
|  | 77 | 6 |
|  | 88 | 7 |
|  | 33 | 2 |
|  | 9 | -1 |
|  | 45 | -1 |
|  | 100 | -1 |
| 11 | 11 | 0 |
|  | 9 | -1 |
|  | 45 | -1 |

You are supposed to run JUnit and test the above program for errors.

You can use for example JUnits assertEquals command

assertEquals is one of the methods provided by JUnit, to compare the expected and the obtained results. Its syntax is: assertEquals (<expectedValue>, <actualValue>)  
where <actualValue> is replaced by a call to the method that we want to test.

Some useful links:

<https://www.tutorialspoint.com/junit/junit_plug_with_eclipse.htm>

<https://dzone.com/articles/junit-tutorial-beginners>

https://javacodehouse.com/blog/junit-tutorial/