

## LAB # 10

### JUnit Testing

**OBJECTIVE:** Study the concept of Test Driven Development under the framework of JUnit Testing.

#### Steps for creating JUnit Testing on Eclipse:

1. Create a project and add the following code in class:

```
public class JUnitTesting {
    public int square (int x) {
        return x*x;
    }
    public int countA(String word)
    {
        int count = 0;
        for (int i=0; i <word.length();i++)
        {
            if(word.charAt(i)=='a' ||
word.charAt(i)=='A')
            {
                count++;
            }
        }
        return count;
    }
}
```

```
class squareTest {
    @Test
    void test() {
        JUnitTesting obj=new
JUnitTesting();int
output=obj.square(5);
assertEquals(25, output);
    }
}
```

2. Run the code and get result:



3. If wrong expected value is added or there's a mistake in your logic then the test will be failed and this output will appear:



### Lab Task:

- Add another test case for countA function (which is given in code).

### CODE:

```
package lab10;
import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;

class count {
    @Test
    void test() {
        JUnitTesting obj=new JUnitTesting();
        int output=obj.countA("Zain");
        assertEquals(1, output);
    }
}
```

**OUTPUT**

- Make new project, make a class. Add 2 methods in it. One method will find the max integer present in the input integer array. The other method will find the min integer. Now create test cases for both these methods and test your code. Follow all the steps as mentioned above in the manual.

**CODE**

```
package scdlab10;

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

    public int min(int[] arr) {
        int i; int min = arr[0];
        for (i = 1; i < arr.length; i++)
            if (arr[i] < min) min = arr[i];
        return min;
    }
}
```

MINIMUM:

```
package scdlab10;
import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;

class minimum {
    @Test
    void test() {
        UnitTesting obj =new UnitTesting();
        int output = obj.min(new int[]{5,11,3,6,8});
        assertEquals(3, output);
    }
}
```

#### OUTPUT



#### MAXIMUM

```
package scdlab10;
import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;

class maximum {
    @Test
    void test() {
        UnitTesting obj =new UnitTesting();
        int output=obj.max(new int[]{5,11,3,6,8});
        assertEquals(11, output);
    }
}
```

