Software Engineering (IT314)

Course instructors

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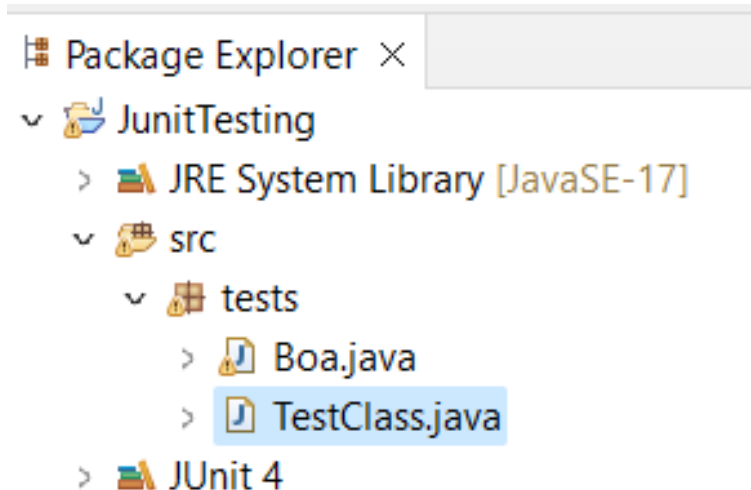
Prof. Manish Khare

Lab 8

Junit Testing

Date

19th April 2023
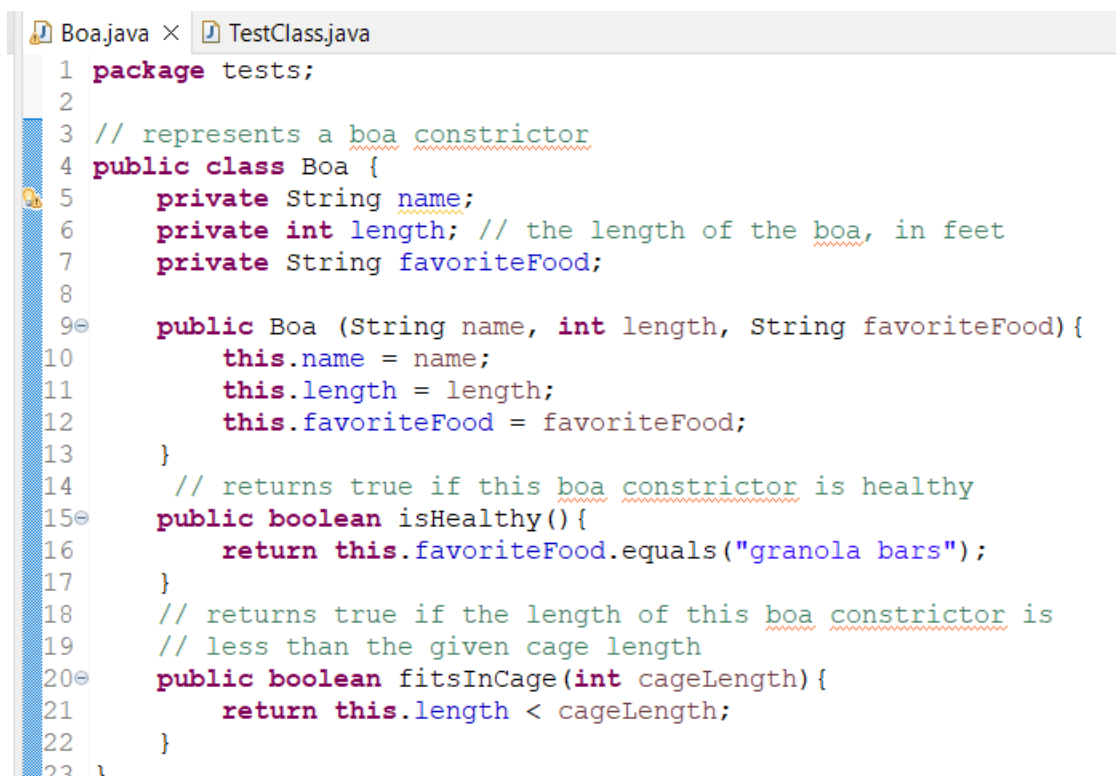
By

Bhavya Rajdev (202001067)

1> Creating a new eclipse project and a package within the project

Package Explorer ✕

- JunitTesting
  - JRE System Library [JavaSE-17]
  - src
    - tests
      - Boa.java
      - TestClass.java
  - JUnit 4

2> Creating a class for Boa

Boa.java ✕   TestClass.java

```java
1  package tests;
2
3  // represents a boa constrictor
4  public class Boa {
5      private String name;
6      private int length; // the length of the boa, in feet
7      private String favoriteFood;
8
9      public Boa (String name, int length, String favoriteFood){
10         this.name = name;
11         this.length = length;
12         this.favoriteFood = favoriteFood;
13     }
14      // returns true if this boa constrictor is healthy
15     public boolean isHealthy(){
16         return this.favoriteFood.equals("granola bars");
17     }
18     // returns true if the length of this boa constrictor is
19     // less than the given cage length
20     public boolean fitsInCage(int cageLength){
21         return this.length < cageLength;
22     }
23  }
```

3> Creating a junit test case with methods isHealthy and fitsInCage.

```java
package tests;

import static org.junit.Assert.*;
import org.junit.Before;
import org.junit.Test;

public class TestClass {
    private Boa jen, ken;

    @Before
    public void setUp() throws Exception {
        jen = new Boa("Jennifer", 2, "grapes");
        ken = new Boa ("Kenneth", 3, "granola bars");
    }

    @Test
    public void isHealthy() {
        fail("Not yet implemented");
    }

    @Test
    public void fitsInCage() {

    }
}
```
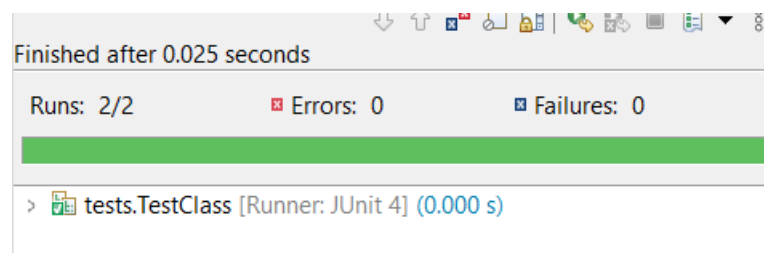
4> Creating setup method and annotating with @Before and creating jen and ken objects of Boa class.

```java
public class TestClass {
    private Boa jen, ken;

    @Before
    public void setUp() throws Exception {
        jen = new Boa("Jennifer", 2, "grapes");
        ken = new Boa ("Kenneth", 3, "granola bars");
    }
```

5> Writing tests for fitsInCage and isHealthy method

```
16    @Test
17    public void testIsHealthy() {
18        assertFalse(jen.isHealthy());
19        assertTrue(ken.isHealthy());
20    }
21
22    @Test
23    public void testFitsInCage() {
24        assertTrue(jen.fitsInCage(3));
25        assertFalse(jen.fitsInCage(2));
26        assertFalse(jen.fitsInCage(1));
27        assertFalse(jen.fitsInCage(0));
28        assertFalse(jen.fitsInCage(-1));
29        assertTrue(ken.fitsInCage(10));
30        assertFalse(ken.fitsInCage(3));
31        assertFalse(ken.fitsInCage(0));
32        assertFalse(ken.fitsInCage(-1));
33    }
34 }
```

6> Running both tests

Finished after 0.025 seconds

Runs: 2/2   ☒ Errors: 0   ☒ Failures: 0

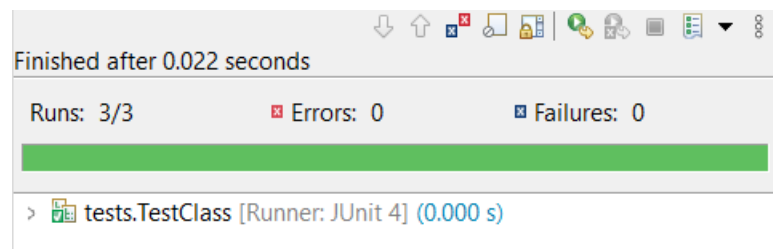> ⊞ tests.TestClass [Runner: JUnit 4] (0.000 s)

7> Writing code to convert length in inches

```
24    // produces the length of the Boa in inches
25    public int lengthInInches(){
26        return 12*this.length;
27
28    }
29 }
```

Writing the tests for length in inches.

```
35    
36    @Test
37    public void testLengthInInches() {
38        assertEquals(24, jen.lengthInInches());
39        assertEquals(36, ken.lengthInInches());
40    }
41 }
```

Running the tests

Finished after 0.022 seconds

Runs: 3/3   ❌ Errors: 0   ❌ Failures: 0

> tests.TestClass [Runner: JUnit 4] (0.000 s)