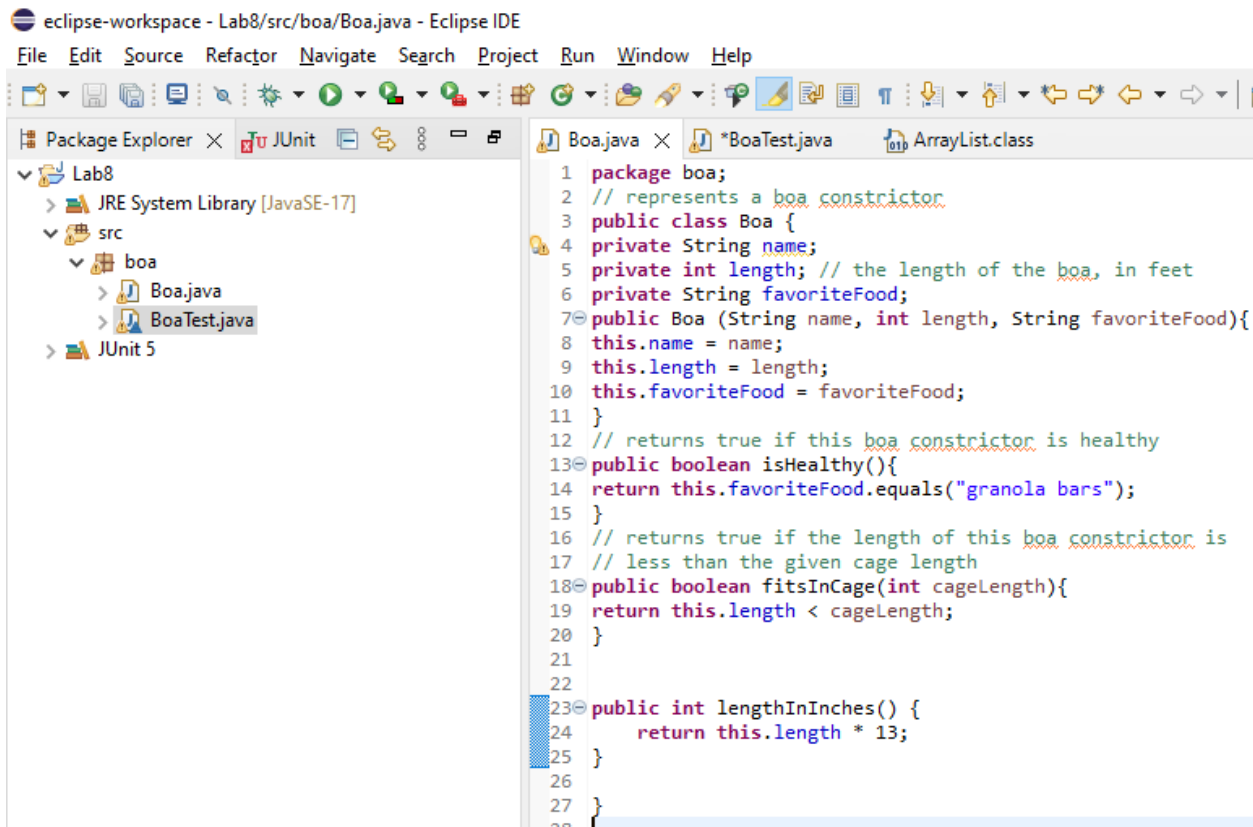# IT314

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LAB-8

Lab Exercises

**Create a new Eclipse project, and within the project create a package.
Create a class for a Boa.**

Write unit test case

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Package Explorer ×   JUnit

- Lab8
  - JRE System Library [JavaSE-17]
  - src
    - boa
      - Boa.java
      - BoaTest.java
  - JUnit 5

Boa.java   *BoaTest.java ×   ArrayList.class

```java
 8   class BoaTest {
 9
10       private static final int length = 0;
11       private Boa jen;
12       private Boa ken;
13
14       @Before
15       public void setUp() throws Exception {
16       jen = new Boa("Jennifer", 2, "grapes");
17       ken = new Boa ("Kenneth", 3, "granola bars");
18       }
19
20       @Test
21       public void testIsHealthy() {
22       assertFalse(jen.isHealthy());
23       assertTrue(ken.isHealthy());
24       }
25
26       @Test
27       public void testfitsInCage() {
28       assertFalse(jen.fitsInCage(1));
29       assertTrue(jen.fitsInCage(2));
30       assertTrue(jen.fitsInCage(3));
31       assertFalse(ken.fitsInCage(2));
32       assertTrue(ken.fitsInCage(3));
33       assertTrue(ken.fitsInCage(4));
34       }
35
36       @Test
37       public void testLengthInInches() {
38           Boa bigBoa = new Boa("Tom", 13, "mice");
39           assertEquals(169, bigBoa.lengthInInches());
40       }
```

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Package Explorer   JUnit ×

Finished after 0.073 seconds

Runs: 3/3   Errors: 2   Failures: 0

BoaTest [Runner: JUnit 5] (0.015 s)
  testfitsInCage() (0.010 s)
  testLengthInInches() (0.002 s)
  testIsHealthy() (0.001 s)

Boa.java   *BoaTest.java ×   ArrayList.class

```java
 8  class BoaTest {
 9
10      private static final int length = 0;
11      private Boa jen;
12      private Boa ken;
13
14      @Before
15      public void setUp() throws Exception {
16      jen = new Boa("Jennifer", 2, "grapes");
17      ken = new Boa ("Kenneth", 3, "granola bars");
18      }
19
20      @Test
21      public void testIsHealthy() {
22      assertFalse(jen.isHealthy());
23      assertTrue(ken.isHealthy());
24      }
25
26      @Test
27      public void testfitsInCage() {
28      assertFalse(jen.fitsInCage(1));
29      assertTrue(jen.fitsInCage(2));
30      assertTrue(jen.fitsInCage(3));
31      assertFalse(ken.fitsInCage(2));
32      assertTrue(ken.fitsInCage(3));
33      assertTrue(ken.fitsInCage(4));
34      }
35
36      @Test
37      public void testLengthInInches() {
38          Boa bigBoa = new Boa("Tom", 13, "mice");
39          assertEquals(169, bigBoa.lengthInInches());
40      }
```

Running Test Cases = 3
Failed Test Cases = 2

Modify the methods

testFitsInCage()

```java
@Test
public void testFitsInCage_1() {

    int cage = 1;
    boolean output = jen.fitsInCage(cage);
    assertEquals(output,false);
}

@Test
public void testFitsInCage_2() {

    int cage = 2;
    boolean output = ken.fitsInCage(cage);
    assertEquals(output,false);
}

@Test
public void testFitsInCage_3() {

    int cage = 10;
    boolean output = ken.fitsInCage(cage);
    assertEquals(output,true);
}

@Test
public void testFitsInCage_4() {

    int cage = 3;
    boolean output = ken.fitsInCage(cage);
    assertEquals(output,false);
}
```

testIsHealthy()

```java
@Test
public void testIsHealthy_1() {
    boolean output = ken.isHealthy();
    assertEquals(output,true);
}

@Test
public void testIsHealthy_2() {
    boolean output = jen.isHealthy();
    assertEquals(output,false);
}
```

Add a new method to the Boa class that produces length in inches

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      - BoaTest.java
  - JUnit 5

Boa.java ×   *BoaTest.java   ArrayList.class

```java
 1  package boa;
 2  // represents a boa constrictor
 3  public class Boa {
 4  private String name;
 5  private int length; // the length of the boa, in feet
 6  private String favoriteFood;
 7  public Boa (String name, int length, String favoriteFood){
 8  this.name = name;
 9  this.length = length;
10  this.favoriteFood = favoriteFood;
11  }
12  // returns true if this boa constrictor is healthy
13  public boolean isHealthy(){
14  return this.favoriteFood.equals("granola bars");
15  }
16  // returns true if the length of this boa constrictor is
17  // less than the given cage length
18  public boolean fitsInCage(int cageLength){
19  return this.length < cageLength;
20  }
21
22
23  public int lengthInInches() {
24      return this.length * 13;
25  }
26
27  }
```