Date: 04/08/2022 Lab Session No.: 04

Task 4: Parameterized testing using JUnit

Aim: To perform parameterized testing for Triangle using JUnit.

Procedure:

Steps:

- 1. Creating Java project.
 - Click on File and select New project
 - Enter project name as com.Junit.traingle
 - Click on Next and then on Finish

2. Creating java Test Project

- Right click on com.Junit.traingle
- Click on properties and select tab java build path
- Click on source and click on Create New Folder.
- Give the folder name as test and click on next.
- Click on Finish and then on OK

3. Creating java class

- Right click on com.Junit.traingle and click on New.
- Click on class and give the class name as Triangle
- Click on Finish
- Type the following code

```
package com.Junit.traingle;

public class Traingle {
    public int shape(int a,int b,int c) {
        if(a>=b+c || b>=a+c || c>=a+b) {
            return 0;
        }
        else if(a==b && b==c) {
            return 1;
        }
        else if((a==b && b!=c) || (b==c && c!=a) || (c==a && c!=b)) {
            return 2;
        }
        else {
            return 3;
        }
    }
}
```

```
// 1-Equilateral Traingle
// 2-Isosceles Traingle
// 3-Scalene Traingle
```

4. Create java test class

- Right click on com.Junit.traingle and click on new
- Click on Junit test case.
- Change the name of folder src to Test in source folder tab.
- Click on browse and select Triangle class and click on Next.
- Click on Finish and then on OK.
- Add the following code

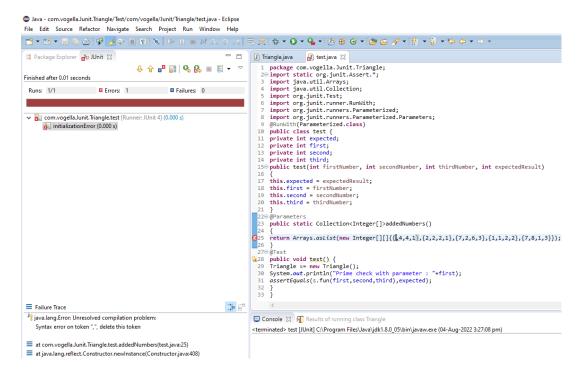
```
package com.Junit.traingle;
import static org.junit.Assert.*;
import org.junit.Test;
import java.util.Arrays;
import java.util.Collection;
import org.junit.runner.RunWith;
import org.junit.runners.Parameterized;
import org.junit.runners.Parameterized.Parameters;
@RunWith(Parameterized.class)
public class Traingle_test {
   int a;
   int b;
   int c;
   int res;
   public Traingle_test(int a,int b,int c,int res) {
         this.a=a;
         this.b=b;
         this.c=c;
         this.res=res;
   }
   @Parameters
   public static Collection<Integer[]> sides_checked(){
          return Arrays.asList(new Integer[][]{{3,4,5,2},{3,3,3,1}});
   }
   @Test
   public void test() {
         Traingle ct=new Traingle();
          System.out.println("Triangle with sides :"+a+", "+b+" and "+c);
          assertEquals(res,ct.shape(a, b, c));
   }
}
```

Output:

Pass Case for Triangle:

```
Java - com.vogella.Junit.Triangle/Test/com/vogella/Junit/Triangle/test.java - Eclipse
 File Edit Source Refactor Navigate Search Project Run Window Help
_ =
 Package Explorer JUnit ⊠
                                                                                  Finished after 0.016 seconds
  Runs: 5/5 ☐ Errors: 0 ☐ Failures: 0
 > Ecom.vogella.Junit.Triangle.test [Runner: JUnit 4] (0.000 s)
                                                                                   {
    this.expected = expectedResult;
    this.first = firstNumber;
    this.second = secondNumber;
    this.third = thirdNumber;
}
                                                                                    public static Collection<Integer[]>addedNumbers()
                                                                                    {
return Arrays.ast|ist(new Integer[][]{{4,4,4,1},{2,2,2,1},{7,2,6,3},{1,1,2,2},{7,8,1,3}});
                                                                                  public void test() {
    Triangle s= new Triangle();
    System.out.println("Prime check with parameter : "+first);
    assertEquals(s.fun(first,second,third),expected);
}
 Failure Trace
                                                                              Console 🛭 👔 Results of running class Triangle
                                                                              <terminated> test [JUnit] C:\Program Files\Java\jdk1.8.0_05\bin\javaw.exe (04-Aug-2022 3:23:59 pm)
                                                                             Prime check with parameter : 4
Prime check with parameter : 2
Prime check with parameter : 7
Prime check with parameter : 1
Prime check with parameter : 1
```

Fail Case for Triangle



Result: Performing parameterized testing using JUnit has been done successfully.

Roll No: 5C0 Section: CSE-B 17CS4704B SOFTWARE TESTING METHODOLOGIES LABORATORY Sheet:	
Evaluator's Observation	
Marks Secured:out of	
Full Name of the Evaluator:	Student's Signature
	Student's Signature
Signature of the Evaluator:	Date of Evaluation: