

Assignment 9

Q1 : Junit1.java

```
import java.util.Scanner;

public class JunitAssign {
    public static void main(String... args) {
        Scanner read = new Scanner(System.in);
        System.out.println("Enter Any String :");
        String str = read.nextLine();
        System.out.print(getLength(str));
    }
    public static int getLength(String str) {
        return str.length();
    }
}
```

Junit1Test.java

```
package Amdocs;
import static org.junit.jupiter.api.Assertions.assertEquals;

import org.junit.jupiter.api.Test;

public class StudentClassTest {
    @Test
    public void test_getLength() {
        assertEquals(11, JunitAssign.getLength("I am Honest"));
    }
}
```

Q2:-

```
import org.junit.jupiter.api.Assertions;
import org.junit.jupiter.params.ParameterizedTest;
import org.junit.jupiter.params.provider.NullSource;

class Junittest2 {

    /*
     * @NullSource is an ArgumentsSource which provides a single null argument to the
     * annotated @ParameterizedTest method
     */
    @ParameterizedTest
    @NullSource
    public void getNullException(String argument) {
        Assertions.assertThrows(NullPointerException.class, () -> argument.length());
    }
}
```

Q3 :-

Junit3.java

```

package JunitTest;

public class Junit3 {
    public static int add(int a,int b) throws SumToFiveException {
        if(a+b == 5) {
            throw new SumToFiveException("Sum to five is Not Allowed");
        }
        return a+b;
    }
    public static int divide(int a,int b) {
        if(b == 0) {
            throw new ArithmeticException("Divide By Zero");
        }
        return a/b;
    }
    public static void main(String... args) {
    }
}

```

Junittest3.java

```

package JunitTest;
import static org.junit.Assert.assertEquals;

import org.junit.Test;

public class Junitest3 {

    @Test(expected = ArithmeticException.class)
    public void fail_getDivision() {
        Junit3.divide(10, 0);
    }

    @Test
    public void pass_getDivision() {
        assertEquals(5,Junit3.divide(10,2));
    }

    @Test(expected = SumToFiveException.class)
    public void fail_getAddition() throws SumToFiveException {
        Junit3.add(3,2);
    }

    @Test
    public void pass_getAddition() throws SumToFiveException {
        assertEquals(8,Junit3.add(10, -2));
    }
}

```

SumToFiveException.java

```

package JunitTest;

public class SumToFiveException extends Exception {
    /**
     */
    private static final long serialVersionUID = 1L;
}

```

```

        SumToFiveException(String s){
            super(s);
        }
    }
}

```

For Maven Project you run the `mvn clean verify surefire-report:report` command.

Run this for your project and check the build folder for the generated test report.

Q4:-

```

import static org.junit.Assert.assertEquals;

import java.util.Arrays;
import java.util.List;

import org.junit.jupiter.api.BeforeEach;
import org.junit.jupiter.api.DisplayName;
import org.junit.jupiter.api.Nested;
import org.junit.jupiter.api.Test;

public class Junittest4 {

    private List<String> list;

    @BeforeEach
    void setup() {
        list = Arrays.asList("Gaurav", "Success");
    }

    @Test
    void listTests() {
        assertEquals(2, list.size());
    }
    // write one tests named checkFirstElement() to check that the first list element
is "JUnit 4"
    // write one tests named checkSecondElement() to check that the first list element
is "JUnit 4"
    @DisplayName("Grouped tests for checking members")
    @Nested
    class CheckMembers {
        @Test
        void checkFirstElement() {
            assertEquals("Gaurav", list.get(0));
        }

        @Test
        void checkSecondElement() {
            assertEquals("Success", list.get(1));
        }
    }
}

```

Output -:

Junittest4

```
listTests(Junittest4)
Junittest4$CheckMembers
    checkFirstElement(Junittest4$CheckMembers)
    checkSecondElement(Junittest4$CheckMembers)
```

Q5:

Junittes5.java

```
import static org.junit.Assert.assertEquals;
import static org.junit.Assert.assertTrue;
import static org.junit.jupiter.api.Assertions.assertEquals;

import java.util.Arrays;
import java.util.List;

import org.junit.jupiter.api.AfterEach;
import org.junit.jupiter.api.BeforeEach;
import org.junit.jupiter.api.Disabled;
import org.junit.jupiter.api.DisplayName;
import org.junit.jupiter.api.RepeatedTest;
import org.junit.jupiter.api.Test;

public class junittest5 {

    private List<String> list;

    //This test run before each test case
    @DisplayName("Before Each")
    @BeforeEach
    void setup() {
        System.out.println("List Assignment - Before Each");
        list = Arrays.asList("Gaurav", "JUnit");
    }

    //This test run After each test case
    @DisplayName("After Each")
    @AfterEach
    public void afterEachOperation() {
        System.out.println("No Operation - After Each");
    }

    //checking Size of list must be equal to 2
    @Test
    void listTests() {
        assertEquals(2, list.size());
    }

    //Checking first element of list equals to "Gaurav"
    @Test
    public void getFirstElement() {
        assertTrue("Gaurav".equals(list.get(0)));
    }
}
```


JUnit Output:-

Junittest5

listTests()

getFirstElement()

Ensure correct handling of zero

repetition 1 of 5(0.008 s)

repetition 2 of 5(0.006 s)

repetition 3 of 5(0.004 s)

repetition 4 of 5(0.002 s)

repetition 5 of 5(0.004 s)