ASSIGNMENT 3

**Software Testing and Quality Assurance**

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Code :  
public class SumEvenNumbers {

public static int sum(int start, int end) {

if (start % 2 != 0) {

start++;

}

if (end % 2 != 0) {

end--;

}

int sum = 0;

for (int i = start; i <= end; i += 2) {

sum += i;

}

return sum;

}

}  
  
Test :   
  
import static org.junit.Assert.\*;

import org.junit.Test;

public class SumEvenNumbersTest {

@Test

public void testSumEvenNumbers() {

assertEquals(12, SumEvenNumbers.sum(2, 4));

assertEquals(30, SumEvenNumbers.sum(4, 7));

assertEquals(20, SumEvenNumbers.sum(5, 10));

assertEquals(0, SumEvenNumbers.sum(1, 3));

}

}  
use a mutation testing tool like PIT :  
<build>

<plugins>

<plugin>

<groupId>org.pitest</groupId>

<artifactId>pitest-maven</artifactId>

<version>1.5.2</version>

<dependencies>

<dependency>

<groupId>org.pitest</groupId>

<artifactId>pitest-junit5-plugin</artifactId>

<version>0.13</version>

</dependency>

</dependencies>

<executions>

<execution>

<id>mutation-test</id>

<goals>

<goal>mutationCoverage</goal>

</goals>

</execution>

</executions>

</plugin>

</plugins>

</build>  
  
  
The Final Report :   
>> Generated 6 mutations Killed 5 (83%)