**Course Title:** Software Quality Assurance
**Course Code:** SE 403
Assignment on
**Object Oriented Software Testing (JUnit)**

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Batch: 47th

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Submission Date: 31-10-2021

# Object Oriented Software Testing (JUnit)

We perform unit testing (Junit) on our Java project name is **myapp** using Apache Maven software management and comprehension tool with the help of IntelliJ IDEA. For testing purpose we use several kinds of the plugins (like maven-clean-plugin, maven-site-plugin, maven-compiler-plugin and maven-surefire-plugin etc.), some dependencies (i.e. org.junit.jupiter, org.assertj etc.) and some api.
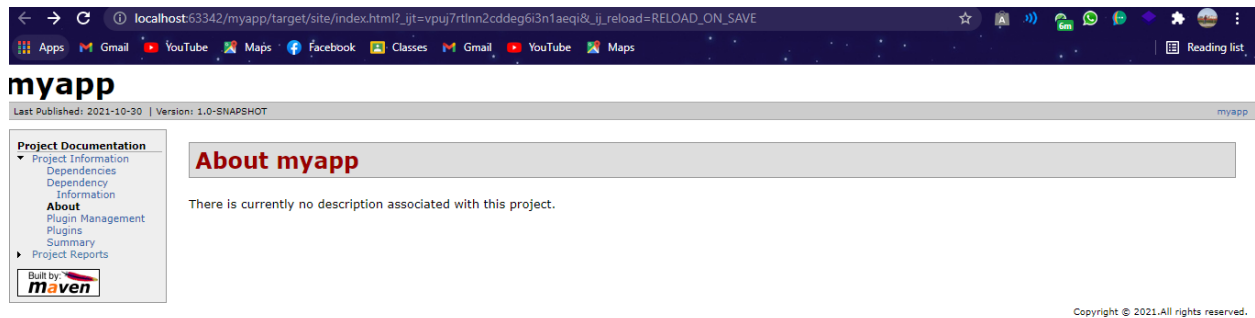
- ▪ **Screenshots of our java application project developed by IntelliJ IDEA**
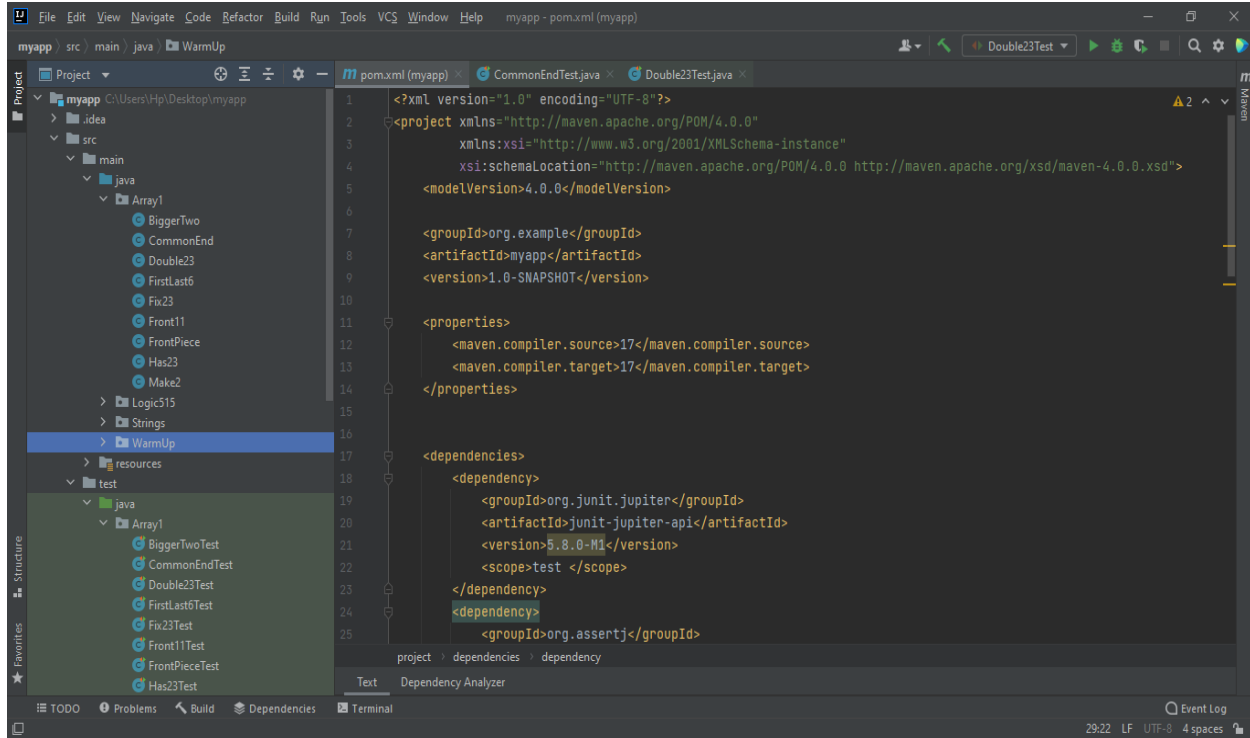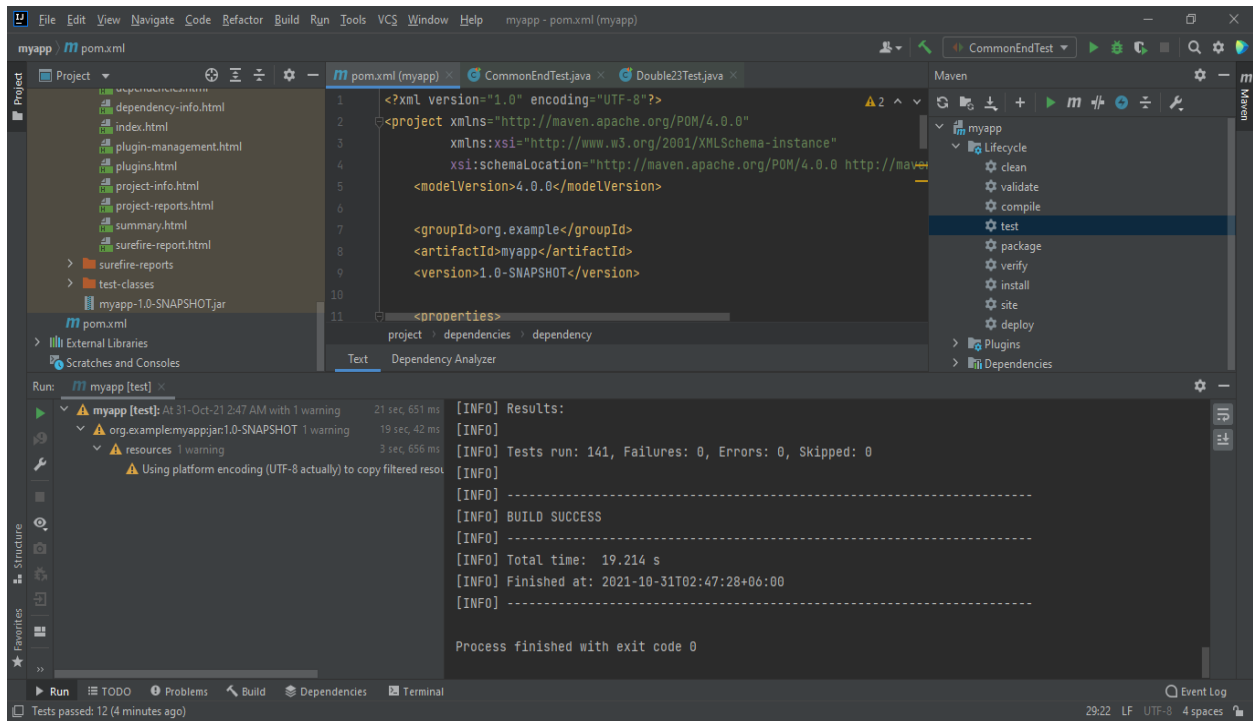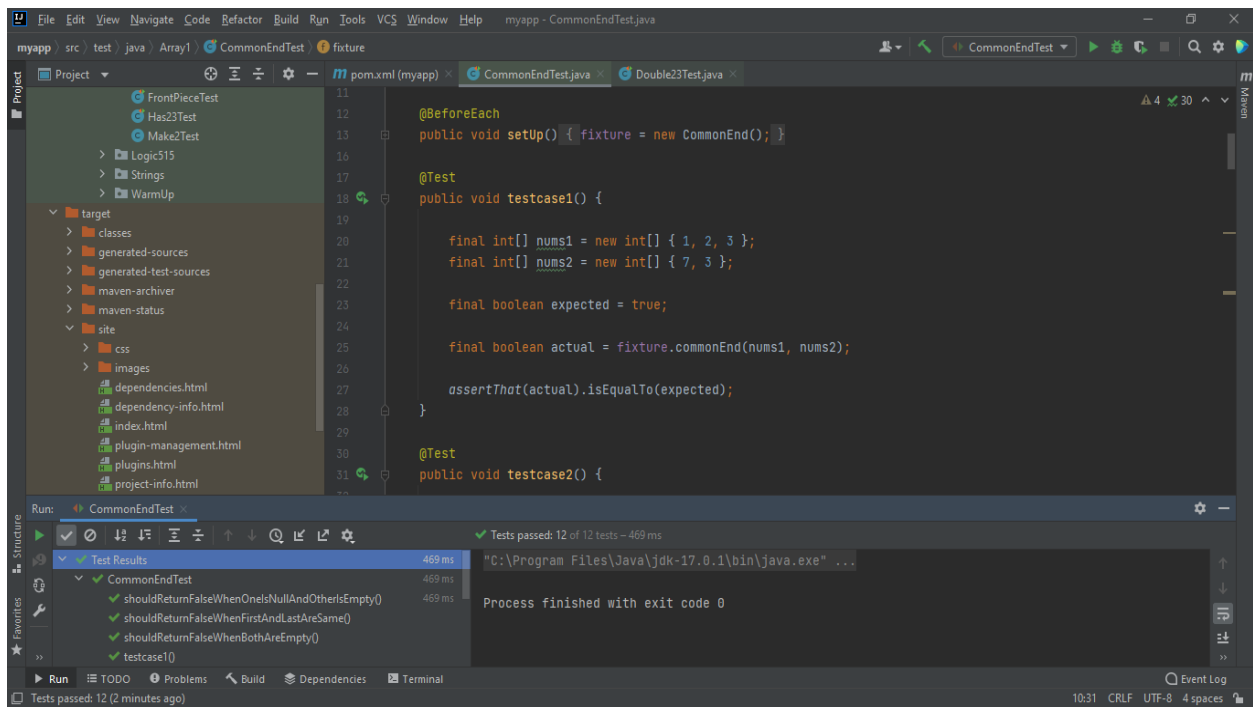
- # <u>Maven Project Reports</u>
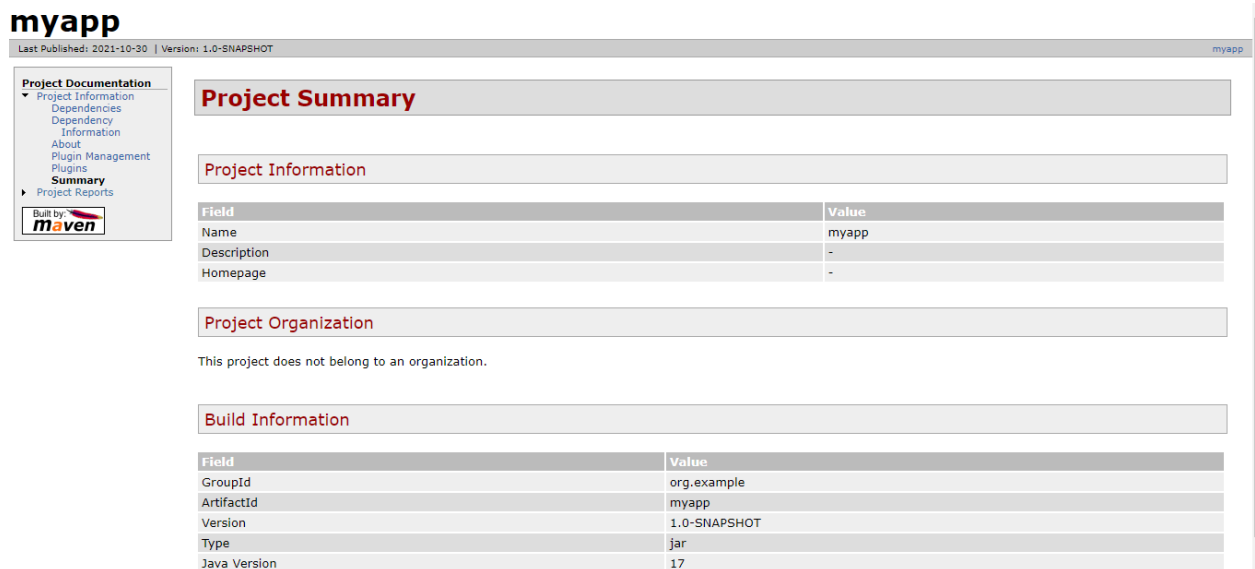  - ## ➢ **Screenshot of Maven About myapp page**



  - ## ➢ **Project Summery of myapp**



  - ## ➢ **Project Plugins**

## ➢ Generated Reports

**myapp**

Last Published: 2021-10-30 | Version: 1.0-SNAPSHOT                                                    myapp

**Project Documentation**
▸ Project Information
▾ Project Reports
   Surefire Report

Built by:
**maven**

### Generated Reports

This document provides an overview of the various reports that are automatically generated by Maven ⬈ . Each report is briefly described below.

#### Overview

| Document | Description |
|---|---|
| Surefire Report | Report on the test results of the project. |

## ➢ Surefire Report

myapp – Surefire Report                                                    ✕                    ⬂   ─  ◻  ✕

← → C   ⓘ localhost:63342/myapp/target/site/surefire-report.html                    ☆  Ⓐ ))) 🔒 🟢 🔵 ＊ ⋮  👤

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**myapp**

Last Published: 2021-10-30 | Version: 1.0-SNAPSHOT                                                    myapp
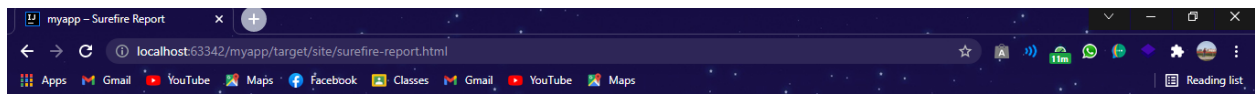
**Project Documentation**
▸ Project Information
▾ Project Reports
   **Surefire Report**

Built by:
**maven**

### Surefire Report

### Summary

[Summary] [Package List] [Test Cases]

| Tests | Errors | Failures | Skipped | Success Rate | Time |
|---|---|---|---|---|---|
| 141 | 0 | 0 | 0 | 100% | 0.407 |

Note: failures are anticipated and checked for with assertions while errors are unanticipated.

### Package List

[Summary] [Package List] [Test Cases]

| Package | Tests | Errors | Failures | Skipped | Success Rate | Time |
|---|---|---|---|---|---|---|
| WarmUp | 15 | 0 | 0 | 0 | 100% | 0.031 |
| Strings | 38 | 0 | 0 | 0 | 100% | 0.094 |
| Array1 | 59 | 0 | 0 | 0 | 100% | 0.25 |
| Logic515 | 29 | 0 | 0 | 0 | 100% | 0.032 |

Note: package statistics are not computed recursively, they only sum up all of its testsuites numbers.

#### WarmUp

| | Class | Tests | Errors | Failures | Skipped | Success Rate | Time |
|---|---|---|---|---|---|---|---|
| ⚠ | BackAroundTest | 3 | 0 | 0 | 0 | 100% | 0.016 |
| ⚠ | Close10Test | 3 | 0 | 0 | 0 | 100% | 0.015 |
| ⚠ | DelDelTest | 3 | 0 | 0 | 0 | 100% | 0 |
| ⚠ | Diff21Test | 3 | 0 | 0 | 0 | 100% | 0 |
| ⚠ | EndUpTest | 3 | 0 | 0 | 0 | 100% | 0 |

## Strings

| | Class | Tests | Errors | Failures | Skipped | Success Rate | Time |
|---|---|---|---|---|---|---|---|
| ⛁ | AtFirstTest | 5 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | ComboStringTest | 7 | 0 | 0 | 0 | 100% | 0.015 |
| ⛁ | ConCatTest | 6 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | DeFrontTest | 15 | 0 | 0 | 0 | 100% | 0.031 |
| ⛁ | EndsLyTest | 5 | 0 | 0 | 0 | 100% | 0.016 |

## Array1

| | Class | Tests | Errors | Failures | Skipped | Success Rate | Time |
|---|---|---|---|---|---|---|---|
| ⛁ | BiggerTwoTest | 8 | 0 | 0 | 0 | 100% | 0.172 |
| ⛁ | CommonEndTest | 12 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | Double23Test | 6 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | FirstLast6Test | 7 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | Fix23Test | 8 | 0 | 0 | 0 | 100% | 0.015 |
| ⛁ | Front11Test | 6 | 0 | 0 | 0 | 100% | 0 |
| ⛁ | FrontPieceTest | 5 | 0 | 0 | 0 | 100% | 0 |
| ⛁ | Has23Test | 7 | 0 | 0 | 0 | 100% | 0.015 |

## Logic515

| | Class | Tests | Errors | Failures | Skipped | Success Rate | Time |
|---|---|---|---|---|---|---|---|
| ⛁ | AlarmClockTest | 4 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | AnswerCellTest | 4 | 0 | 0 | 0 | 100% | 0 |
| ⛁ | BlueTicketTest | 6 | 0 | 0 | 0 | 100% | 0 |
| ⛁ | CaughtSpeedingTest | 8 | 0 | 0 | 0 | 100% | 0.016 |
| ⛁ | CigarPartyTest | 7 | 0 | 0 | 0 | 100% | 0 |

# Test Cases

## BiggerTwoTest

| | | |
|---|---|---|
| ⛁ | shouldReturnAWhenSumIsSame | 0.109 |
| ⛁ | shouldReturnNonEmptyWhenOneIsEmptyAndOtherIsNotEmpty | 0.016 |
| ⛁ | testcase1 | 0 |
| ⛁ | testcase2 | 0 |
| ⛁ | testcase3 | 0 |
| ⛁ | shouldReturnEmptyWhenBothAreNull | 0 |
| ⛁ | shouldReturnEmptyWhenBothAreEmpty | 0 |
| ⛁ | shouldReturnEmptyWhenOneIsNullAndOtherIsEmpty | 0.016 |

## CommonEndTest

| | | |
|---|---|---|
| ⛁ | shouldReturnFalseWhenOneIsNullAndOtherIsEmpty | 0 |
| ⛁ | shouldReturnFalseWhenFirstAndLastAreSame | 0 |
| ⛁ | shouldReturnFalseWhenBothAreEmpty | 0 |
| ⛁ | testcase1 | 0 |
| ⛁ | testcase2 | 0.016 |
| ⛁ | testcase3 | 0 |
| ⛁ | shouldReturnTrueWhenEndsAreSameValue | 0 |
| ⛁ | shouldReturnTrueWhenFirstAreSameValue | 0 |
| ⛁ | shouldReturnFalseWhenOneIsEmptyAndOtherIsNot | 0 |
| ⛁ | shouldReturnFalseWhenBothAreSingleElementAndNotSameValue | 0 |
| ⛁ | shouldReturnTrueWhenBothAreSingleElementAndSameValue | 0 |
| ⛁ | shouldReturnFalseWhenBothNull | 0 |

## Double23Test

| | | |
|---|---|---|
| ⛁ | testcase1 | 0 |
| ⛁ | testcase2 | 0 |
| ⛁ | testcase3 | 0 |
| ⛁ | shouldReturnFalseWhenNumsIsEmpty | 0 |
| ⛁ | shouldReturnFalseWhenNumsIsSingleElementAndNot2Or3 | 0 |
| ⛁ | shouldReturnFalseWhenNumsIsNull | 0 |

## FirstLast6Test

| | | |
|---|---|---|
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | shouldReturnFalseWhenNumIsNull | 0 |
| ⚠ | shouldReturnFalseWhenNumIsEmpty | 0 |
| ⚠ | shouldReturnTrueWhenNumHasSingleElement6 | 0 |
| ⚠ | shouldReturnFalseWhenNumHasSingleElementNon6 | 0 |

## Fix23Test

| | | |
|---|---|---|
| ⚠ | shouldReturnEmptyWhenNumsIsEmpty | 0.015 |
| ⚠ | shouldReturnValidWhenNumsIsDoubleElementAndNot2and3 | 0 |
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | shouldReturnEmptyWhenNumsIsNull | 0 |
| ⚠ | shouldReturnValidWhenNumsIsDoubleElementAnd2and3 | 0 |
| ⚠ | shouldReturnSameWhenNumsIsSingleElement | 0 |

## Front11Test

| | | |
|---|---|---|
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | shouldReturnEmptyWhenBothAreNull | 0 |
| ⚠ | shouldReturnEmptyWhenBothAreEmpty | 0 |
| ⚠ | shouldReturnFromBWhenAIsEmptyAndBIsNonEmpty | 0 |

## FrontPieceTest

| | | |
|---|---|---|
| ⚠ | shouldReturnEmptyWhenNumsIsEmpty | 0 |
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | shouldReturnEmptyWhenNumsIsNull | 0 |

## Has23Test

| | | |
|---|---|---|
| ⚠ | shouldReturnTrueWhenNumIsSingleElementAndHas2Or3 | 0 |
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | shouldReturnFalseWhenNumIsNull | 0 |
| ⚠ | shouldReturnFalseWhenNumIsEmpty | 0 |
| ⚠ | shouldReturnTrueWhenNumIsSingleElementAndDoesntHave2Or3 | 0 |

## AlarmClockTest

| | | |
|---|---|---|
| ⚠ | shouldReturnOffWhenVacationAndWeekday | 0.016 |
| ⚠ | shouldReturnOffWhenVacationAndWeekend | 0 |
| ⚠ | shouldReturnOffWhenNotVacationAndWeekday | 0 |
| ⚠ | shouldReturnOffWhenNotVacationAndWeekend | 0 |

## AnswerCellTest

| | | |
|---|---|---|
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | testcase4 | 0 |

## BlueTicketTest

| | | |
|---|---|---|
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | testcase4 | 0 |
| ⚠ | testcase5 | 0 |
| ⚠ | testcase6 | 0 |

## CaughtSpeedingTest

| | | | |
|---|---|---|---|
| ⚠ | shouldReturn1WhenSpeedIsInRangeAndNotBirthday | | 0 |
| ⚠ | shouldReturn1WhenSpeedIsHigherAndBirthday | | 0 |
| ⚠ | shouldReturn1WhenSpeedIsInRangeAndBirthday | | 0 |
| ⚠ | shouldReturn0WhenSpeedIsLessThanLowerLimitAndNotBirthday | | 0.016 |
| ⚠ | shouldReturn0WhenSpeedIsLessThanLowerLimitAndBirthday | | 0 |
| ⚠ | shouldReturn1WhenSpeedIsInRangeUpperAndNotBirthday | | 0 |
| ⚠ | shouldReturn1WhenSpeedIsInRangeUpperAndBirthday | | 0 |
| ⚠ | shouldReturn1WhenSpeedIsHigherAndNotBirthday | | 0 |

## CigarPartyTest

| | | | |
|---|---|---|---|
| ⚠ | shouldReturnFalseWhenNotAWeekendAndCigarsLessThan40 | | 0 |
| ⚠ | shouldReturnTrueWhenNotAWeekendAndCigarsGreaterThan40AndLessThan60 | | 0 |
| ⚠ | shouldReturnFalseWhenWeekendAndCigarsLessThan40 | | 0 |
| ⚠ | shouldReturnFalseWhenNotAWeekendAndCigarsGreaterThan60 | | 0 |
| ⚠ | shouldReturnTrueWhenNotAWeekendAndCigarsEqualTo40 | | 0 |
| ⚠ | shouldReturnTrueWhenNotAWeekendAndCigarsEqualTo60 | | 0 |
| ⚠ | shouldReturnTrueWhenWeekendAndCigarsGreaterThanOrEqualTo40 | | 0 |

## AtFirstTest

| | | | |
|---|---|---|---|
| ⚠ | | testcase1 | 0.016 |
| ⚠ | | testcase2 | 0 |
| ⚠ | | testcase3 | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsEmpty | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsNull | | 0 |

## ComboStringTest

| | | | |
|---|---|---|---|
| ⚠ | testcase1 | | 0.015 |
| ⚠ | testcase2 | | 0 |
| ⚠ | testcase3 | | 0 |
| ⚠ | testcase4 | | 0 |
| ⚠ | shouldReturnEmptyStringWhenBothOneIsEmptyAndOtherIsNull | | 0 |
| ⚠ | shouldReturnEmptyStringWhenBothAreEmpty | | 0 |
| ⚠ | shouldReturnEmptyStringWhenBothAreNull | | 0 |

## ConCatTest

| | | | |
|---|---|---|---|
| ⚠ | | testcase1 | 0 |
| ⚠ | | testcase2 | 0 |
| ⚠ | | testcase3 | 0 |
| ⚠ | shouldReturnEmptyStringWhenBothAreEmpty | | 0 |
| ⚠ | shouldReturnEmptyStringWhenOneIsNullAndOtherIsEmpty | | 0 |
| ⚠ | shouldReturnEmptyStringWhenBothAreNull | | 0 |

## DeFrontTest

| | | | |
|---|---|---|---|
| ⚠ | shouldReturnEmptyWhenStrIsSingleCharA | | 0 |
| ⚠ | testcase1 | | 0 |
| ⚠ | testcase2 | | 0 |
| ⚠ | testcase3 | | 0.015 |
| ⚠ | shouldReturnEmptyWhenStrIsSingleCharNotA | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsEmpty | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsMultiCharAB | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsNull | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsMultiCharNotANotB | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsDoubleCharNotANotB | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsDoubleCharANotB | | 0.016 |
| ⚠ | shouldReturnEmptyWhenStrIsDoubleCharNotAB | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsMultiCharANotB | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsMultiCharNotAB | | 0 |
| ⚠ | shouldReturnEmptyWhenStrIsDoubleCharAB | | 0 |

**EndsLyTest**

| | | |
|---|---|---|
| ⚠ | testcase1 | 0 |
| ⚠ | testcase2 | 0 |
| ⚠ | testcase3 | 0 |
| ⚠ | shouldReturnFalseWhenStrIsEmpty | 0 |
| ⚠ | shouldReturnFalseWhenStrIsNull | 0 |

**BackAroundTest**

| | | |
|---|---|---|
| ⚠ | shouldBackAroundWhenEmptyString | 0 |
| ⚠ | shouldBackAroundWhenMultiCharString | 0.016 |
| ⚠ | shouldBackAroundWhenSingleCharString | 0 |

**Close10Test**

| | | |
|---|---|---|
| ⚠ | shouldReturnNum1WhenNum1IsClose | 0 |
| ⚠ | shouldReturn0WhenBothAreEquallyClose | 0 |
| ⚠ | shouldReturnNum2WhenNum2IsClose | 0 |

**DelDelTest**

| | | |
|---|---|---|
| ⚠ | shouldReturnUpdatedStringWhenStringLengthIsGreatherThanEqualTo4AndContainDel | 0 |
| ⚠ | shouldReturnSameStringWhenStringLengthIsLessThan4 | 0 |
| ⚠ | shouldReturnSameStringWhenStringLengthIsGreatherThanEqualTo4AndDoesntContainDel | 0 |

**Diff21Test**

| | | |
|---|---|---|
| ⚠ | shouldReturnDiffIfNumberIsEqualTo21 | 0 |
| ⚠ | shouldReturnDiffIfNumberIsGreaterThan21 | 0 |
| ⚠ | shouldReturnDiffIfNumberIsLessTo19 | 0 |

**EndUpTest**

| | | |
|---|---|---|
| ⚠ | shouldReturnAllUpperCaseStringWhenStringLengthIsLessThanEqualTo3 | 0 |
| ⚠ | shouldReturnEmptyStringWhenStringIsEmpty | 0 |
| ⚠ | shouldReturnLast3UpperCaseStringWhenStringLengthIsGreaterThan3 | 0 |

**\*\* It's all about the JUnit Testing using Maven tool integrated with IntelliJ IDEA.**