**Bug report   
Assignment 1**

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* **Method:** [**getQuarter**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#getQuarter())**()**

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| **Test case** | **Expected** | **Actual** | **Status** |
| Create quarter and call the method. | 2 | 2 | Passed |

* **Method:** [**getYear**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#getYear())**()**

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| **Test case** | **Expected** | **Actual** | **Status** |
| Create quarter and call the method. | 2023 | 2023 | Passed |

* **Method:** [**Quarter**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#Quarter(int, int))(int quarter, int year)

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| **Test case** | **Expected** | **Actual** | **Status** |
| Basic | Q2/2023 | Q2/2023 | Passed |
| Year out of lower range (year = 1800). | IllegalArgumentException | IllegalArgumentException | Passed |
| Year out of upper range (year = 99999). | IllegalArgumentException | IllegalArgumentException | Passed |
| Quarter bigger than 4 (quarter = 6). | Not equal Q6/2000. | Q6/2000 | Failed |
| Quarter smaller than 1 (quarter = -1). | Not equal Q-1/2000 | Q-1/2000 | Failed |

* **Method:** [**Quarter**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#Quarter(java.util.Date))(java.util.Date time)

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| **Test case** | **Expected** | **Actual** | **Status** |
| Basic | Q2/2023 | Q2/2023 | Passed |
| Year out of lower range (year = 1800). | IllegalArgumentException | IllegalArgumentException | Passed |
| Year out of upper range (year = 999999). | IllegalArgumentException | IllegalArgumentException | Passed |

* **Method:** [**Quarter**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#Quarter(int, org.jfree.data.time.Year))(int quarter, [Year](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Year.html) year)

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| **Test case** | **Expected** | **Actual** | **Status** |
| Basic (quarter=3, year = 2018) | Q3/2018 | Q3/2018 | Passed |
| Quarter smaller than 1 (quarter = -1). | Not equal Q-1/2018 | Q-1/2018 | Failed |
| Quarter bigger than 4 (quarter = 9). | Not equal Q9/2018 | Q9/2018 | Failed |

* **Method:**[**Quarter**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#Quarter(java.util.Date, java.util.TimeZone))(java.util.Date time, java.util.TimeZone zone)

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| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Basic | Q2/2023 | Q2/2023 | Passed |
| Year out of lower range (year = 1800). | IllegalArgumentException | IllegalArgumentException | Passed |
| Year out of upper range (year = 999999). | IllegalArgumentException | IllegalArgumentException | Passed |

* **Method:** [**previous**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#previous())()

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| **Test case** | **Expected** | **Actual** | **Status** |
| Basic | Q1/2023 | Q1/2023 | Passed |
| Case of the same year Quarter(4,1995) | Q3/1995 | Q3/1995 | Passed |
| Case of the edge  Quarter(1,1900) | null | null | Passed |
| Case of a new year  Quarter(1,2000) | Q4/1999 | Q4/1999 | Passed |

* **Method:** [**next**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#previous())()

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| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Basic | Q3/2023 | Q3/2023 | Passed |
| Case of the same year Quarter(3,2007) | Q4/2007 | Q4/2007 | Passed |
| Case of the edge  Quarter(4,9999) | null | null | Passed |
| Case of a new year  Quarter(4,2007) | Q1/2008 | Q1/2008 | Passed |

* **Method:** [**getSerialIndex**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#getSerialIndex())()

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| **Test case** | **Expected** | **Actual** | **Status** |
| Basic  Quarter (1, 2000) | 8001L | 8001L | Passed |

**Note:** documentation doesn't show how it is calculated.

* **Method:** [**equals**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#equals(java.lang.Object))(java.lang.Object obj)

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| **Test case** | **Expected** | **Actual** | **Status** |
| Same  Object obj = new Quarter(2,2023) | true | true | Passed |
| Random object  Object obj = 5 | false | false | Passed |
| Different  Object obj = new Quarter(4,1998) | false | false | Passed |
| Equal self | true | true | Passed |

* **Method:** [**hashCode**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#hashCode())()

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| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Create 2 equal quarters and compare their hashcode  Quarter(2, 2003) | 25979  25979 | 25979  25979 | Passed |

* **Method:** [**compareTo**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#compareTo(java.lang.Object))(java.lang.Object o1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Quarter before specified object | negative | negative | Passed |
| Quarter after specified object | positive | positive | Passed |
| Quarter same as specified object | zero | zero | Passed |
| Wrong object  **Note:** documentation not showing how the code handles this case. | 1 | 1 | Passed |

* **Method:** [**toString**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#toString())()

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Basic | Q2/2023 | Q2/2023 | Passed |
| Wrong year 1800 | IllegalArgumentException | IllegalArgumentException | Passed |
| Wrong quarter 99,2016 | Not equal Q99/2016 | Q99/2016 | Failed |

* **Method:** [**getFirstMillisecond**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#getFirstMillisecond(java.util.Calendar))(java.util.Calendar calendar)

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| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Create a new calendar and Set the time to the first millisecond of the day.  Test with method getTimeInMillis() in calendar and compare both. | 1680300000000 | 1680300000000 | Passed |

* **Method:** [**getLastMillisecond**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#getLastMillisecond(java.util.Calendar))(java.util.Calendar calendar)

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| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| Create a new calendar and Set the time to the last millisecond of the day.  Test with method getTimeInMillis() in calendar and compare both. | 1680386399999 | 1688162399999 | Failed |

* **Method:** [**parseQuarter**](file:///D:\FCAI\Fourth%20year\Second%20term\Software%20testing\Assignment%201\ModifiedJavadoc\org\jfree\data\time\Quarter.html#parseQuarter(java.lang.String))(java.lang.String s)

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| --- | --- | --- | --- |
| **Test case** | **Expected** | **Actual** | **Status** |
| YYYY-QN | Q3/2016 | Q3/2016 | Passed |
| QN-YYYY | Q3/2016 | Q3/2016 | Passed |
| QN YYYY | Q3/2016 | Q3/2016 | Passed |
| YYYY QN | Q3/2016 | Q3/2016 | Passed |
| YYYY/QN | Q3/2016 | Q3/2016 | Passed |
| QN/YYYY | Q3/2016 | Q3/2016 | Passed |
| Wrong input  **Note:** documentation not showing how the code handles this case. | TimePeriodFormatException | TimePeriodFormatException | Passed |