**ITC515: Professional Programming Practice**

**Term 2, 2020**

**Assessment 4 – Debugging: Simplification**

Lecturer: Recep Ulusoy

Prepared By:

Sonal Keraliya (11723650)

Contents

[1.Bug1: 3](#_Toc54005136)

[1.1 Automated Test Code: 3](#_Toc54005137)

[1.2 Explanation: 3](#_Toc54005138)

[Arrange 3](#_Toc54005139)

[Act 3](#_Toc54005140)

[Assert Equal 3](#_Toc54005141)

[1.3 Screenshot 3](#_Toc54005142)

[2.Bug 2: 5](#_Toc54005143)

[2.1 Automated Test Code: 5](#_Toc54005144)

[2.2 Explanation: 5](#_Toc54005145)

[Arrange 5](#_Toc54005146)

[Act 5](#_Toc54005147)

[Assert Equal 5](#_Toc54005148)

[2.3 Screenshot 6](#_Toc54005149)

# 1.Bug1:

## 1.1 Automated Test Code:

GitHub Test Code File URL : <https://github.com/sonalkeraliya/ITC515-assignment4/blob/master/ITC515-Debugging/test/TestBug1.java>

@Test

**void** testOverdueFine() {

// arrange

library.commitLoan(iLoan); // loan one book1 patron1

System.***out***.println("Loan Due Date:" + iLoan.getDueDate()); // print loan due date

calendar.incrementDate(3);

library.checkCurrentLoansOverDue(); // update loan related data

System.***out***.println("Current Date:" +calendar.getDate()); // print current date

// act

**double** overDueFine = 0.0;

**if** (iLoan.isOverDue()) {

overDueFine = library.calculateOverDueFine(iLoan);

iLoan.getPatron().incurFine(overDueFine);

}

System.***out***.println("Actual Fine:" +overDueFine); // print fine

// assert

*assertEquals*(1.00, overDueFine, 0.00);

}

## 1.2 Explanation:

Arrange**:**

Add book and patron as loan object:

After call function for borrow book:

Set current date after 2 days of actual current date

And call function for updated loan data which is affected loan due date

Act**:**

Actual declared fine variable and store their value in this variable

### Assert Equal

Expect fine value should be $1.00

1.3 Screenshot:

**1.Test code:**Graphical user interface, text, application

Description automatically generated

**2.Output**

Graphical user interface, text, application

Description automatically generated

# 2.Bug 2:

## 2.1 Automated Test Code:

GitHub Test Code File URL : <https://github.com/sonalkeraliya/ITC515-assignment4/blob/master/ITC515-Debugging/test/TestBug2.java>

}

## 2.2 Explanation:

Arrange**:**

Add book and patron as loan object:

After call function for borrow book:

Set current date after 2 days of actual current date

And call function for updated loan data which is affected loan due date

Act**:**

Actual declared fine variable and store their value in this variable

### Assert Equal

Expect fine value should be $2.00

2.3 Screenshot:

**1.Test code:**

@Test

**void** testOverdueFine() {

// arrange

library.commitLoan(iLoan); // loan one book1 patron1

System.***out***.println("Loan Due Date:" + iLoan.getDueDate()); // print loan due date

calendar.incrementDate(4);

library.checkCurrentLoansOverDue(); // update loan related data

System.***out***.println("Current Date:" +calendar.getDate()); // print current date

// act

**double** overDueFine = 0.0;

**if** (iLoan.isOverDue()) {

overDueFine = library.calculateOverDueFine(iLoan);

iLoan.getPatron().incurFine(overDueFine);

}

System.***out***.println("Actual Fine:" +overDueFine); // print fine

// assert

*assertEquals*(2.00, overDueFine, 0.00);

}

**2.Output**

Graphical user interface, text, application

Description automatically generated