**ITC515: Professional Programming Practice**

**Term 2, 2020**

**Assessment 4 – Debugging: Tracing**

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# 1.Tracing For bug1:

## 1.1 Screenshot and step explanation

Find out when patron borrow book:

Graphical user interface, application

Description automatically generated

A screenshot of a computer

Description automatically generated

**Add this book and patron in loan object:**

A screenshot of a computer

Description automatically generated

Patron and book added successfully but not commit loan success and move next step

Graphical user interface, application

Description automatically generated

This loan added in patron list

And back to set day after three day as current date and check current date set proper and related data to updated in loan status changed is overdue:

Graphical user interface, application

Description automatically generated

Now we can see the patron object fines owned not properly store: again, run this programming step:

Still Patron data do not store the value in overdue loan fine value

Now go find out the which function calculate the fine and return fines value:

A screenshot of a computer

Description automatically generated

Book status is on loan is proper display and now go into next step

Now loan status is changed is overdue:

A screenshot of a computer

Description automatically generated

Now check loan is overdue and print overdue fine loan:

Now find the point is printing the fine value in console. See below screenshot:

ReturnBookControl.java line number 60 display the output

Find out the which function calculate the fine value:

Now debugging only **bookScanned function in ReturnbookControl.java**

**Now remove all breakpoint in put in bookScanned functionGraphical user interface, text, application

Description automatically generated**

**Line number 52: store the value overdue fine .**

overDueFine = library.calculateOverDueFine(currentLoan);

now go to calculateOverDueFine function show the calculation of fine

Overdue day count only one day in this function show in below screen:

A screenshot of a computer

Description automatically generated

Now calculateOverDueFine function have bug

## 1.2 Finally, Location Point

we got point out the line number 248 have some mistake of count the number of day

A screenshot of a computer

Description automatically generated

Now go to getDaysDifference and show the calculation of fines

Graphical user interface, text, application

Description automatically generated

**In conclusion, line number 66 in Calendar.java file have some mistake**

**But after the return book when user enter option for LM list of patrons then show the $1.00 fine in patron object list**

**Now again start debugging:**

**Graphical user interface, text, email

Description automatically generated**

**Graphical user interface, text, application

Description automatically generated**

**Above image display is that fine added in patron variable finespayable but when again display the patrol list object again called function of calculation fine in same patron variable finespayable show below image and display the fines owned value is $2.00 instead of $1.00**

**Graphical user interface, application

Description automatically generated**

**Graphical user interface, text, application

Description automatically generated**

**After user enter the value of book damaged again count the overdue loan fine value added in patron list.**

# 2.Tracing For bug2:

## 2.1 Screenshot and step explanation

## 2.2 Finally, Location point of bug