CS362

Assignment-5

Donghao Lin

Bug-Reports

int NumDaysInMonth = CalendarUtil.NumDaysInMonth(startYear, startMonth);

In line 173 in Appt.java

0 is January in startMonth, but is startMonth = 12, the method should not work well.

So, change to

int NumDaysInMonth = CalendarUtil.NumDaysInMonth(startYear, startMonth - 1);

if (startDay < 0 || startDay > NumDaysInMonth)

In line 174 in Appt.java

startDay can be 0 in the condition above, so it is logically incorrect.

Appointment can be created when startDay = 0.

Change to

if (startDay < 1 || startDay > NumDaysInMonth)

Debugging

I ran my random test and it did not run through all cases, so I check the code where the

test did not pass and fixed them.

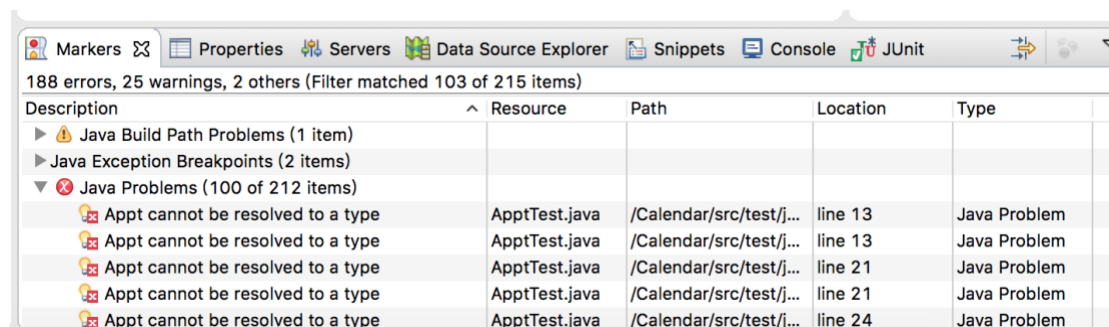int NumDaysInMonth = CalendarUtil.NumDaysInMonth(startYear, startMonth);

change to

int NumDaysInMonth = CalendarUtil.NumDaysInMonth(startYear, startMonth - 1);

if (startDay < 0 || startDay > NumDaysInMonth)

Change to

if (startDay < 1 || startDay > NumDaysInMonth)

I used Eclipse to debug the program. I imported the project and debugged as maven test and Junit Test. When I was debugging, I clicked all java files and it showed a lot of problems on the Markers section on the bottom of the tool. I did use Agan's principle in debugging Calendar, I read the code and made some bugs to make the program fail then changed only one variable one time to in testing.

Test-Reports

When I was testing Calendar, it sometimes came up with an error that the last date is earlier than first date in the test cases. And I think it is unreliable that my teammate's code has lots of bugs except the two above.

Pit Test Coverage Report

Package Summary

calendar

Number of Classes	Line Coverage	Mutation Coverage
6	69% 371/538	65% 156/240

Breakdown by Class

Name	Line Coverage		Mutation Coverage	
Appt.java	96%	95/99	100%	68/68
CalDay.java	99%	75/76	100%	37/37
CalendarMain.java	0%	0/76	0%	0/17
CalendarUtil.java	69%	9/13	7%	1/14
DataHandler.java	73%	191/260	49%	50/102
XmlParserErrorHandler.java	7%	1/14	0%	0/2

calendar

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
CalendarMain		0%		0%	4	4	76	76	2	2	1	1
DataHandler		83%		73%	21	57	36	260	0	16	0	1
XmlParserErrorHandler		3%		0%	5	6	13	14	4	5	0	1
Appt		95%		95%	3	58	4	99	1	36	0	1
CalDay		96%		82%	5	30	1	76	0	16	0	1
CalendarUtil		87%		70%	3	9	4	13	1	4	0	1
DateOutOfRangeException		57%		n/a	1	2	2	4	1	2	0	1
Total	642 of 2,244	71%	37 of 168	77%	42	166	136	542	9	81	1	7