CAB302 Software Development Assignment 2

Testing Guide for Part 2
Semester 1, 2016

Due date: Thursday, 2 June 2016 (Week 13)
Weighting: 35% in total (17.5% for Part 1, 17.5% for Part 2)
Assessment type: Group assignment, working in pairs.
Version: 1.0: Tuesday, 31 May 31, 2016, 6:42PM.

Introduction:

In part 2 of the spec we discussed a number of possible cases for exploration of GUI Testing for the assignment. I have made it clear that the testing we want to explore here is limited in scope and nothing like what we would actually perform in reality. But we have to keep the task bounded and manageable. As noted in the spec document, it is best if you can test the GUI logic implemented by your partner and vice versa, but compromise is almost inevitable here.

Overall there are three distinct aspects we want to test:

1. Do we handle the input data properly?
2. Do we display correctly to the text area?
3. Do we chart things properly?

In the spec I gave an example of a GUI testing script, and we need you to think through these to cover some of these scenarios. For the sake of all our sanity, we will not assess these scenarios directly – you will not need to submit them – but the example is there to guide your thinking. The aspects of testing are broadly about functionality – making sure we do things correctly for correct input – and about handling error *gracefully*. I have made the requirement very generous in that you only have to submit five separate testing examples. I will specify some of these and you will have to create the others.

Later on today I will release a template for the presentation of your results. As discussed in the spec, the simplest way of demonstrating that this all works is to capture appropriate screen shots, and to submit them as part of a powerpoint or pdf slide-deck. In each case, we should see the input fields and the system response. In Test 1, the bad input data, we will need to do this twice – for four screens in total. For the others, two screen shots will be sufficient. In the case of the text area, please make sure that the screen shot includes the last lines, like these below:

125:781:F42:J180:P102:Y872:T1196:E125:Q496:R36958
126:1584:F42:J180:P102:Y855:T1179:E142:Q496:R38667

20160525_203007: End of Simulation
Final Totals: [F4424:J18922:P10652:Y88120:T122118:E17908:R39305]

We will now consider the test cases.

Do we handle the input data properly?

This is obviously all about the parameters and whether they are correct and whether you handle errors gracefully – not through unhandled exceptions causing the whole system to crash. The variations depend on whether you catch the errors as the come in or allow the exception to be thrown by the Simulator constructor – thrown and caught, of course.

Here is a semi-formal version of the invalid data script. [Recall that PAG means Perform a Gesture, which is a neutral way of saying do something without making it a button or some other specific widget]. The plain font is what you do. The italicised text is what the system does.

Script 1: Invalid Input

1. *PAG to modify the fare class probabilities so that they have the following values:*
    a. *[firstProb=0.3, businessProb=0.4, premiumProb=0.3, economyProb=0.7]*
2. *The System display: (A) shows the probabilities as set or (B) prevents erroneous entry, gracefully directing the user back to correct the values. If (B) we are finished.*
3. *If (A), PAG to commence the simulation*
4. *The System identifies that the probabilities are invalid, and allows the user to correct the values.*
5. *PAG to reset the values to [firstProb=0.03, businessProb=0.14, premiumProb=0.13, economyProb=0.7]*
6. *The System display shows the probabilities as set.*

We will continue the script and set other parameters badly. Note that we should not be restarting here.

7. *PAG to modify the mean daily bookings to have the value -500.*
8. *The System display: (A) shows the mean daily bookings as set or (B) prevents erroneous entry, gracefully directing the user back to correct the value. If (B) we are finished.*
9. *If (A), PAG to commence the simulation*
10. *The System identifies that the value is invalid, and allows the user to correct the values.*
11. *PAG to modify the mean daily bookings to have value 1300.*
12. *The System display shows the value as set.*

Do we display to the text area properly?

Here we require that you run the GUISimulator with two valid parameter sets. One of these is going to be chosen for you, the other can be selected by you from one of the logs we supplied as an example. The process to be followed is very similar to the script above, though I won't document that formally.

Test 2 Parameter settings required are:
[meanDailyBookings=1300.0, sdDailyBookings=429.0, seed=100, firstProb=0.03, businessProb=0.14, premiumProb=0.13, economyProb=0.7, maxQueueSize=0, cancellationProb=1.0]

Test 3 is for you to choose from supplied logs.

*Below we discuss the issues surrounding charts. I will specify one, and demand that you specify another. If you have **NOT** completed the charting component of part 2, you can still get **MOST** of the testing marks by replacing tests 4 and 5 with additional tests of the text area (like tests 2 and 3) based on the settings below.*

Do we chart things properly?

In this final aspect of the assignment, we will require you to confirm that you can correctly chart the output from the simulation. This is again quite simple. We will need only two screenshots for each test – the parameter settings and the relevant chart. The requirements are as follows:

Test 4: (Chart 1):
Simulator [meanDailyBookings=2000.0, sdDailyBookings=660.0, seed=100, firstProb=0.1, businessProb=0.2, premiumProb=0.0, economyProb=0.7, maxQueueSize=1000, cancellationProb=0.1]

Test 5: (Chart 2):
Simulator [meanDailyBookings=1600.0, sdDailyBookings=528.0, seed=100, firstProb=0.1, businessProb=0.2, premiumProb=0.1, economyProb=0.6, maxQueueSize=50000, cancellationProb=0.1]

A note on Automation:
There is no requirement for automation of these GUI tests. Automation helps significantly with the first few, but cannot assist a great deal with the charting questions. Given the small number of tests required, it is probably less painful to follow the screenshot route, but I will supply guidance should people wish to give it a try – please email me if interested.