

Deliverable #5

Team Members: Hannah Posch, Alex Thropp, Daniel Lee, Daniel Baczmaga

Project: Glucosio

TeamCorrect

The GitHub repo for TeamCorrect CSCI 362 Project

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Daniel Lee, Hannah Posch, Alex Thropp, Daniel Baczmaga

Project Description

This repository contains test materials for the project Glucosio. We have built a test script, `runAllTests.sh`, that automates the testing of the Glucosio system.

Experiences

Fault injection was a fun experience because it meant breaking the code that we have been thoroughly testing. For our application, modifying the logic and expressions for the Glucose application made the most sense to ensure that the application was not comparing or calculating numbers correctly. We are happy with our fault injection as they test a variety of the functionality of the system. All 5 fault injections broke their respective functions and did not break additional functionality of the code. This illustrates how well the Glucosio application is low coupled and ensures the maximum functionality of the system overall.

Instructions to run faults

1. Open Terminal
2. git clone <https://github.com/csci-362-fall-2018-01/TeamCorrect>
3. cd TeamCorrect/TestAutomation/scripts (May need additional navigation, depending on where the repository was cloned to)
4. ./runAllTests.sh
5. Output will be stored in an html file which should open automatically in the default browser with the fault injection output on the bottom.

*If any of the above commands return permission denied, use 'sudo' in front of the command.

*If the ./runAllTests.sh returns command not found, use 'sudo chmod 755 runAllTests.sh', then './runAllTests.sh'

Faults

- 1) Test Case 06 Fault Injection:
 - a) File/Method: CholesterolReading.setLDLReading
 - b) Fault: LDL Reading was changed to HDL Reading
 - i) LDL Reading is not correctly set with input of 6.4
 - c) Output: LDL reading set to 0.0
- 2) Test Case 10 Fault Injection:
 - a) File/Method: ReadingTools.hourToSpinnerType
 - b) Fault: changed hour>20 to hour<20
 - c) Fault: changed hour>17 to hour<17
 - d) Fault: changed hour>13 to hour<13
 - e) Fault: changed hour>7 to hour<7
 - f) Fault: changed hour>4 to hour<4

- i) Logic is now incorrect for the expression
- g) Output:
 - i) Hour: 24, SpinnerType: 8, Time of day: night
 - ii) Hour: 8, SpinnerType: 5, Time of day: after dinner
 - iii) Hour: 4, SpinnerType: 5, Time of day: after dinner
 - iv) Hour: 19, SpinnerType: 5, Time of day: after dinner
- 3) Test Case 11 Fault Injection:
 - a) File/Method: InputFilterMinMax.isInRange
 - b) Fault: Changed operation signs in expression
 - i) (Original: $b > a ? c \geq a \ \&\& \ c \leq b : c \geq b \ \&\& \ c \leq a$)
 - ii) (Current: $b < a ? c \leq a \ \&\& \ c \geq b : c \leq b \ \&\& \ c \geq a$)
 - iii) Logic is now incorrect.
 - c) Output: Range Tester [12.0,1.5,8.2] = true
- 4) Test Case 14 Fault Injection:
 - a) File/Method: PressureReading.setMaxReading
 - b) Fault: Changed min to max and vice versa
 - i) Incorrect value returned for set max
 - c) Output: Max Reading returned = 0.0 Max Reading returned = 0.0
- 5) Test Case 20 Fault Injection:
 - a) File/Method: ReadingTools.parseReading
 - b) Fault: Set all returns to null.
 - i) All values return as null.
 - c) Output: str to number 6 = null