

## **CS585 Software Verification and Validation**

### **Programming Assignment - iBox**

#### **Due Date**

Wednesday, January 21, 2015

#### **Score**

20

#### **Questions and Directions**

In this assignment, you will be given an implemented simple version of Google Drive client written in Java. It can monitor the file changes (create a file, update a file, delete a file) occurred in one folder in your local machine, and synchronize all the changes to your Google Drive.

Your task is to add all the necessary unit tests, integration tests, code coverage, and static analysis into the project so that the project is sufficiently verified and validated.

#### **Task 0. Fork and Run the Base Project**

Please fork the project at <https://github.com/csupomona-cs585/ibox> into your own GitHub account. To learn how to fork a repository, please follow <https://help.github.com/articles/fork-a-repo/>.

Follow the instruction at the README file, and run the program locally. Please make sure to follow the instructions to create a Google Developer project and setup the credentials correctly.

#### **Task 1. Unit Test**

Add the necessary unit tests for all the classes in the project.

Please note that the unit tests should NOT rely on the Internet or talking to your Google account. Therefore, you will need to use mocking libraries or other test doubles to assist the unit test.

#### **Task 2. Integration Test**

Add integration tests to verify the key functions of the program. Specifically, you need to verify the whole local-to-remote sync-flow works correctly with your Google Drive account.

Note: you might need to add extra APIs or test code to read the status from your Google Drive to verify if the correct changes happens in your Google Drive after the local changes.

### **Task 3. Test with Maven**

Integrate your unit test and integration tests in the Maven build script. You should be able to run `mvn package` or `mvn verify` to trigger all the testing process.

### **Task 4. Code Coverage**

Integrate Cobertura into your project build process to report the code coverage status.

### **Task 5. Static Code Analysis Integration**

Integrate CheckStyle and FindBugs into your project build process.

### **Submission**

Please commit all the changes to your own GitHub project repo and email me the link.