CSSE 374: Lab 3-1

Background

Assume that you work for a company that is creating the next generation graphical user interfaces on top of the Java Swing Framework. Some of the interns in the company came up with a rough working prototype of the system (see **Lab3-1/src/problem**). Your manager has asked you to refactor their code to achieve the following:

F1. Currently only Windows, Labels, and TextBoxes are supported in the framework. Your manager would like to see the system support additional GUI widgets such as Button, List, and so on, but at a low maintenance cost. As a proof of concept, having a support for a regular command button is just fine for this feature. Furthermore, the command button just needs to have an UI. Implementation of the click functionality is not critical at the moment.

F2. Currently the system supports Windows and Ubuntu operating systems. Your manager would like to support more operating systems in the future, but again, with low maintenance hassle. As a proof of concept, having a support for the Mac OS would be just fine for this feature.

You manager would like to have an end product that requires minimum/no changes to the core logic of the system after refactoring.

Design

Create **Lab3-1/docs/Answer.pdf** with answers to the following problems:

Q1. Create a UML Class Diagram to present your design idea and explain it in a few lines. [**10 points**]

Implementation

Q2. Implement your solution in the **Lab3-1/src/problem** package. [**F1 - 15 points**, **F2 - 20 points**]

Testing

Q3: Implement necessary unit test cases in the **Lab3-1/test/problem** package that tests both **F1** and **F2**. As this is mostly a GUI application, a snapshot of the working system can also serve as an integration test, which you can append to the **Answer.pdf** file. [**5 points**]

Deliverable

Bundle your project in the **zip** format [**not rar**] and turn it in on Moodle.