CSE 360: Intro to Software Engineering Fall 2013

Project 1 – Airline Reservation System

1 Introduction

In this Project, you will modify an Airline Reservation System developed in Java. The source code of the project will be given with all the requirements for the project development. You need to modify the code according to the requirements. Part of the project is to make the project Web accessible. It is developed using Swings and Applets and your task is to make it Web accessible using a Web service.

2 Project Description

The first task is to create a requirement document based on the requirements provided and the source code. You will be given a template on which you create a requirement document.

The second task is to create a design document for this project. You should go through the source code provided, and come with a design document for the project that you are going to create.

The third task is to code. You are required to modify the existing code and with the help of other tools that may be necessary to satisfy the requirements.

The fourth task is to create test scripts and cases for testing. You create as many as test cases as you can. Testing will be done using crowdsourcing software or by other teams in the class. Testing done by other students of the class will be done independently.

2.1 Project requirements

In the Airline Reservation System provided to you, the application currently has provision to check for rates of travel for domestic as well as international flights from a particular location. This feature is available to the users without logging in to the application.

Once you login to the application, you have options to book a domestic flight or an international flight. The user needs to enter the starting location and the destination location along with the desired date of travel, number of people travelling and preferred class of travel. The application will search for available flights. Once the search has been done, the application will inform the user if the seats are available or not and if available, do they want to book the tickets. If the user wants to book the tickets, it will produce a summary page of the ticket with all the information.

The first requirement for this project is to use this code and make it Web accessible. The code is developed using Java Swings and applets which produces an applet when the program is run. Modify the code in such a way that the application is run in a Web browser instead of an applet. You can use whatever technique you want to make it Web accessible. Examples are using a Web service, applets in html tags, or PHP.

The second part of the requirement is to change the UI (user interface) of the application. You can be as creative as you can be in presenting the information to the user. Bonus point will be given to the teams which come up with innovative UI design.

The third part of the requirement is to create a database for this project. The data used in this project is stored in files. You need to create a database using any of the open source tools available to you and have all the data in there. Database that you use include MySQL, PostgreSQL, and SQLite.

The fourth part of the requirement is to add functionalities to the project. Currently the source code does not allow the user to select a different starting location. Add some data to the database and make sure the user can select a starting location from many different locations (choices).

Also, if a user searches for a flight that starts at one location and travels to another location, the application does not return the number of flights and the details associated with it. For example, if I want to fly from Phoenix to Seattle, the application needs to list the flights that can fly from Phoenix to Seattle on that particular day. The user can then select a flight and book that flight from the list.

In addition to that, you need to add a PDF viewer and an image viewer to the system. Both functionalities will enable you to upload a PDF / image document and to view them from the application. The PDF viewer can be used to upload ticket receipts as a

PDF (you can upload any PDF, not necessarily a receipt). While the image viewer enables the admin to upload flight logo (find some flight logo online and upload few). If your team comes with up with new functionality, bonus points may be awarded.

The fifth part of the requirement is to create test cases to test the functionality that you created. You need to create as many test cases as you can. When you code, make sure you test the application thoroughly as testing will be done by other teams / students of the class. If the student's, who test your code, find many bugs, points will be deducted from your score. It is important you spend time on identifying the requirements and design to minimize the bugs in the code. Inspect your own code or practice pair programming, or practice test-first development process as taught in the class.

3 Submission

Each group will upload the requirements document to the ASU Blackboard. One submission per group.

Design phase and coding phase are combined and at the end each group should send the TA a link to their working application. Each group should host their application in their own public domain. Each group would be given their login information for hosting their website in asu server later.

Inspection and testing will be performed on the code developed by other teams, and any faults detected need to be corrected.

Any questions should be forwarded to anyone of the TA's.

Enjoy this homework as you practice software engineering techniques.

```java
import javax.swing.*;
import java.awt.*;
import javax.swing.UIManager.*;

public class WindowUtilities
{
    public static void setNativeLookAndFeel()
    {
        try {
            for (LookAndFeelInfo info :
UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
```

```
                }
            } catch (Exception e) {
                // If Nimbus is not available, you can set the GUI to another
look and feel.
            }


    }
//UIManager.setLookAndFeel(UIManager.getCrossPlatformLookAndFeelClassName());
//UIManager.setLookAndFeel(
"com.sun.java.swing.plaf.motif.MotifLookAndFeel");
}
```