Fundamentals of Software Engineering (M1l322908)

Week 7 Lab Exercise: First Year Case Study

Objectives:

> To allow you to gain an understanding of the first year case study at first hand by using NetBeans and to undertake tasks which involve changing some of the source files for the case study to observe the effects.
>
> (*NB Your Lab instructor will help you to if you have any problems with the tasks required in this Lab exercise.*)

Task 1:

The purpose of this task is to allow you to become familiar with the operation of the first year case study application.

Start VMware player.

Double click on SEBE-Win7x86 (32-bit) Ent virtual machine via Windows Explorer. (and choose the .vmx file)

Now start NetBeans 8.0

a)

> The first year case study project should be installed in NetBeans 8, if it is not follow the instructions below.
>
> Open the first year case study project using NetBeans.
>
> Start NetBeans in the Java Virtual machine. This is likely to be the version
>
> NetBeans 8.0. Once NetBeans is running, select File | Open project
>
> The project should be in the folder
>
> C:\work\netbeansfirstyear\FirstYearCaseStudy
>
> If you get a "Missing Server Error", Select Resolve Missing Server Problem and then Select the Server Tomcat First Year Case Study.

b) Start the JavaDB database server via the services tab in NetBeans. MAKE SURE
> THAT YOU DO THIS before running the application.

To start the JavaDB database :

Click the services tab in NetBeans

Click on the + next to Databases

Right Click JavaDB and select Start Server

Starting JavaDB using Netbeans is one of many possible ways in which the database server can be started.

c) Run the case study Web application.

Return to the projects tab and right click on FirstYearCaseStudy then select run from the menu which appears.

Log in using mpolo as the user and password as the password.

d) Work with the Web application to explore its functionality. Note that the application should be considered to be in the RUP Transition phase and therefore not bug free or complete and ready for stakeholder use. Refer to your 'First Year Case Study' lecture notes, specifically the use case diagram on slide 5 to determine if all the use cases have been implemented.

Task 2:

The purpose of this task is to allow you to become familiar with the database tables used to store the information manipulated by the first year case study application.

a) Follow the instructions below, which detail how to use NetBeans to open a connection to the JavaDB database and how to view the tables and their content. If you have any problems ask your lab supervisor.

First of all click on the services Tab

Next Right click on Databases and select new Connection.

In the Driver entry make sure that JavaDB (Network) is selected then press next.

In the Host entry enter localhost

In the Port entry enter 1527

In the Database entry enter c:\work\netbeansfirstyear\Databases\JavaDB\gcutours. Check first gcutours is installed in this location. You should be able to browse to a folder called gcutours. If it is not there, download and install the file from Blackboard.

Enter admin for the user name and password.

Check the Show JDBC URL box (This is for interest only)

Now click OK. If all is well a new connection now appears to the gcutours database.

Click on the + next to the link to the database, then Click on the + next to ADMIN and then click on the plus next to Tables.

To explore each table, right click on each table and select View Data

b) Explore the database tables and their content so that you gain some familiarity with the data they contain. Please refer to your 'First Year Case Study' lecture notes, and specifically slide 11 of the handout. Make a note of some of the users along with their password. Each time you log in try logging in as a different user.

Task 3:

The purpose of this task is to allow you to become familiar with the files used in the first year

case study that are presented by the application's presentation logic and which are visible to users of the application when it is running. Click on the Projects Tab then click + in front of First year case Study then click + in front of web pages. You should now see FrontPage.jsp.

a) Open the file FrontPage.jsp. This is the start page for the case study application. A jsp file is a file that can contain a mixture of HTML and Java code.

b) Locate the 'p' element containing the text starting with 'Welcome to GCUTours'.

c) Use the NetBeans editor to modify this welcome message to anything of your choosing.

d) Run the application again and observe the effects of your modification.

e) Make additional changes to other elements in the jsp file as suggested by your supervisor or if you are already familiar with HTML make changes you have thought of yourself. Of particular interest are changes which leave the information presented by the page intact but change the styling of the page. If you are familiar with CSS you may wish to edit any relevant CSS files used in the application to observe the effects.

Task 4:

The purpose of this task is to allow you to become familiar with the Java class files used in the first year case study. These files contain the presentation logic, business logic and data access logic Java code as well as Java implementations of the domain classes used to hold information loaded from the database. Please refer to your 'First Year Case Study' handout, specifically pages 12 to 17 of the handout.

a) Open the 'Tour.java' file. This is the source file for the Tour domain class.

b) Locate the 'getPackageName' method.

c) Change the line of code

   return holidayPackage.getName();

   to

   return "Year1" + holidayPackage.getName();

d) Run the application and observe the effect of the changes made to the Java source file. Making this change does not make any real sense as far as the proper operation of the application is concerned and is suggested here only to allow you to see that a change to Java code affects what is presented by the application to its users. Revert back to the original code once you have seen the effect of the change.

e) Modify the application Java code so that a discount of 10% on the cost of a holiday is given when a group of six or more adults is present in the group.

f) Run the application again to observe the effects of your new code and to test the application to prove that it offers the discount.

g) If time allows, implement additional changes to the functionality of the application as suggested by your lab supervisor.

Task 6

You should spend the remaining time in this lab session working in your teams for the coursework. You should now be able to come to some conclusion regarding a suitable

architecture for the proposed system in your coursework. Talk this through with your fellow students in your group. You will need to provide some justification in your coursework for you choice.