**Distributed Systems**
**Lab 4 – Enterprise Java Beans**

For this lab, we'll used Netbeans version 8.2. It can be downloaded here if you're trying it in your own PC.

https://mysliit-my.sharepoint.com/personal/supportit_sliit_lk/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fsupportit%5Fsliit%5Flk%2FDocuments%2Fsoft%2Fnetbeans%2D8%2E2%2Dwindows%2Eexe&parent=%2Fpersonal%2Fsupportit%5Fsliit%5Flk%2FDocuments%2Fsoft&ct=1616134512227&or=OWA-NT&cid=951792a0-5f50-ca25-a245-69ed8dd092f2&originalPath=aHR0cHM6Ly9teXNsaWl0LW15LnNoYXJlcG9pbnQuY29tLzp1Oi9nL3BlcnNvbmFsL3N1cHBvcnRpdF9zbGlpdF9say9FZFhhDdkdCaFlsZE12TUo5TldmZFRZY0JEcjRmN1k4MlVfUXk2RTFhc0ljMlVRP3J0aW1lPU9JeFpYcDdxMkVn

Download the Java EE version.

1. You may download the attached zip file and extract and open it with Netbeans using Open Project and opening the project in the root directory. Three projects including the enterprise application project, web project and EJB project should load. If you get any project errors, you may resolve them using the resolve window.

2. Right click the Enterprise project and click Build and then Click Deploy to build and deploy the Enterprise project.

3. Right click and Run the enterprise project to run it. You should see a browser where news items are displayed. Add new news items to see if works (you have to refresh the page to see the newly added items).

4.   Uncomment the callback *@PostConstruct* method (the method name is 'someMethod') in the NewsEntityFacade Stateless session bean in the *NewsApp-ejb* EJB project. Run the JEE application to see whether the line is printed on the Glassfish server window. When is this method called? Who is calling this method?

Now let's update the code to list the *NewsEntitySorted* Entity bean (which is not used currently) instead of the *NewsEntity* Entity bean.

5. Change the *findAll()* method in the *NewsEntityFacade* session bean in the *NewsApp-ejb* EJB project to fetch the *NewsEntitySorted* Entity beans from the datasource instead of the *NewsEntity* entity beans (check the TODO comment).

6.   Change the *ListNews.java* servlet (in the *NewsApp-war* web project) to show the *NewsEntitySorted*  news items instead of the *NewsEntity* items (check the TODO comment added). You may need to add new HTML code to display the date as well (check the TODO comment added).

7.   Change the *PostMessage* servlet (in the *NewsApp-war* web project) to send a message with the *NewsEntitySorted* entity bean and not the *NewsEntity* entity bean (check the TODO comment). Set the current date as the date field of the *NewsEntitySorted* entity bean (check the TODO comment).

8.  Update the *NewMessage* Message Driven bean in the *NewsApp-ejb* EJB project to save a *NewsEntitySorted* entity instead of a *NewsEntity* entity (check the TODO comment).

9.   Build the enterprise application again. Deploy again and run it. Now you should see the news items with the date. When you add a new news item, the date should be displayed. However, the newly added items are displayed at the bottom.

Now we'll do some modifications sort the news items in the descending order based on time, so that the latest items are displayed on top.

10.  Change the *ListNews* servlet to call the *findAllSortedDesc* method (check the TODO comment). Build, Deploy and Run the Enterprise project again. Now when you run the application the news items should appear in the descending order based on time (newest item first).

**Submission:**

Zip the modified code and the answer to the task 4 in a readme file as a single zip file and upload to the courseweb link. The name of the zip file should be your registration number.