Integrative Programming Java RMI Project

2:30 - 4:00 TF
Group 7

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I. Project Description

This project aims to create a project management tool using Java RMI. Functionalities differ from each type of user. The three types of users: the admin, project leaders and project members. The admin will be able to start and stop the server, as well as register users and create projects. The project leaders will be able to add and remove users to their assigned projects, upload files, view the list of uploaded files to a project, update project status and access to the chat facility. The project members will be able to view the projects they are added to, upload files and access to the chat facility. The project is console-based and will use MySQL to store data.
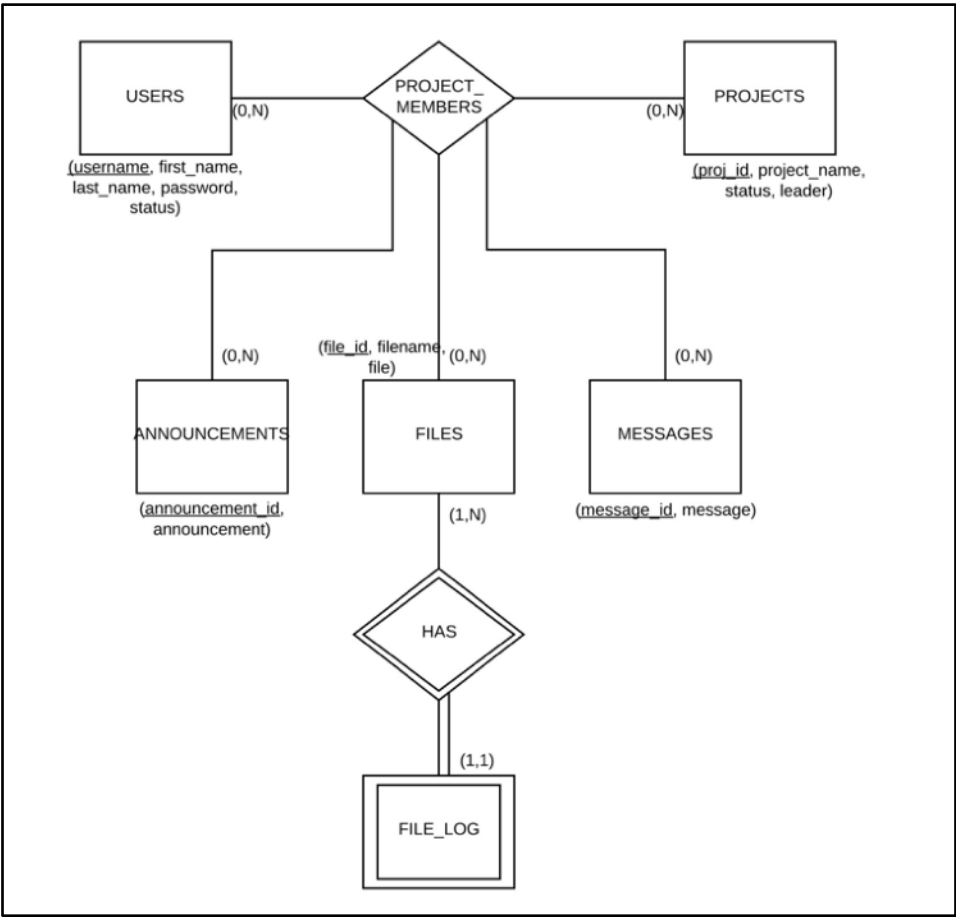
II. Data design

Figure A. Database ERD.

All of the data regarding this program is stored in one scheme using MySQL. The schema has 6 entities and one many-to-many table generated from the relationship between the users and projects since a project can have more than user and a user can have more than one project. All files uploaded, messages sent, and announcement posted are mapped to the PROJECT_MEMBERS relationship. Also each file uploaded keeps track of any revisions that are stored in the FILE_LOG entity.

III. Project Setup

A. Set up database on localhost

To be able to have access to the SQL database schema which is called rmi_project.sql. You must have a local SQL server (i.e. MAMP, WAMP, XAMPP) where you would have access to phpMyAdmin where you could import the

schema. Once the server is setup, you would have information on the port where you can access the SQL server and your SQL account credentials as well in the local server home web page.

Figure 1. MySQL information in MAMP web starter page.

B. How to setup the server

To run the server, open terminal or cmd in the folder (in this situation it is in the executable jar folder) where the rmi_project.jar resides in. Then type in **java -jar rmi_project.jar**. (Don't forget to turn on your local server in order to connect to the SQL server).

Figure 2. Execute .jar file and connect to SQL local server.

Once successfully connected to the local server, the program would prompt you for admin credentials. Enter **admin** for username and **admin** for password as well.

Figure 3. Log-in as admin and admin interface.

C. How to run the client

To run the client, go to Source Code/rmi_project/build and open up terminal or cmd there and type in **java -cp classes rmi_project.Client** to run the client.

Figure 4. Run client and enter registered user credentials.

Logging in as client would require credentials that are registered, the IP address of the device where the server is running, and the port number of the server which is 2000.

IV. Admin Functionalities

A. Starting and stopping the server

To start the register the server into the rmi registry, enter option 1 to start the server and it will allow clients to access the server.

Figure 5. Start server.

To stop the server, simple choose option 8 which will also exit the program.

B. Registering and Removing users

To register users into the database, click on option 2 and fill out the needed credentials: username (must be unique!), user's first name, user's last name, and the user's password.

Figure 6. Register user.

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To remove users, click on option 3 and enter the username of the user to be removed.

```
Enter choice: 3
Remove a user

Enter username of user to be removed: kenancea
Successfully removed user
```

Figure 7. Remove user.

C. Update user status

Other than removing a user, a user might just be inactive and you can set the user's status to inactive by picking option 4.

```
Enter choice: 4
Enter username of user you want to update: batman
User status successfully updated!
Press any key to continue...
```

Figure 8. Change user status to inactive.

D. Creating a project

Creating a project would require you also to specify a leader from the pool of registered users. Choose option 5 to do so.

```
Enter choice: 5
New Project

Enter project name: Networks
Enter project leader username: batman
A new project was successfully added!
Press any key to continue...
```

Figure 9. Add new project.

E. Viewing completed and on-going projects

The program lets the admin view the on-going (option 6) and completed (option 7) projects.

```
Enter choice: 6
On-going projects

ID     Project Name          Project Leader
1      Integ Lab             haileesteinfeld
2      Webtech Lec           erikatorio
3      Integ Lec             erikatorio
5      Networks              batman

Press any key to continue...
```

Figure 10. View on-going projects.

Figure 11. View completed projects.

V. Project Leader Functionalities

Choosing a project from the lists of projects upon login will determine your user privileges.

Figure 12. Choose project.

A. Viewing projects

The project leader can view projects that are assigned to him or her as leader (option 1) or view projects where he or she is just a member (option 2).

Figure 13. View projects as project leader.

Figure 14. View projects as project member.

B. Adding and removing users to a project

As project leader, this gives him or her the privilege to add or remove users to the current project being accessed by choosing option 3.

```
Enter choice: 3
Enter username of member to be added to this project: batman
Member added!
Press any key to continue...
```

Figure 15. Add project member.

You can also remove a user from the project as well by choosing option 4.

```
Enter choice: 4
Enter username of member to be removed from this project: batman
Member successfully removed!
Press any key to continue...
```

Figure 16. Remove project member.

C. Updating project status

To set a project to completed status, choose option 5.

```
Enter choice: 5
Project completed!
Press any key to continue...
```

Figure 17. Make project status to complete.

D. File Upload, File download and viewing of File Revisions

To upload a file in a project, choose option 6 and input the complete path of the file you are to upload.

```
Enter choice: 6
Enter file path of file to be uploaded: /Users/erika/Documents/3rd Year 2nd Sem/
Integ Prog Lab/Finals/testing.jpg
Successfully uploaded file!
Press any key to continue...
```

Figure 18. File upload.

To download a file uploaded in a project, choose option 8 and it will display all the uploaded files you can choose from to download. Input the file name and the path where you want to save the file in your own device and press enter to download.

```
Enter choice: 8
--------------------------Project Files-----------------------------
testing2.jpg
Enter file name you want to download: testing2.jpg
Enter path directory where you want to place your download: /Users/erika/Downloa
ds
Download Success.
```

Figure 19. File download.

Other than uploading, you can also view any file revisions done on the uploaded files in a project by choosing option 7.

```
Enter choice: 7
--------------------------Project Files----------------------------
testing2.jpg

Enter file name to see its revisions: testing2.jpg
--------------------------testing2.jpg----------------------------
erikatorio     04-16-2018 11:04
haileesteinfeld     04-16-2018 12:04
haileesteinfeld     04-16-2018 12:04
Press any key to continue...
```

Figure 20. View file revisions.

E. Project Chat

This program allows you to communicate and view the messages regarding a certain project. You can do this by choosing option 9.

```
Enter choice: 9
Webtech Lec messages
[erikatorio] : hi
[erikatorio] : hello
[haileesteinfeld] : hey
[haileesteinfeld] : sup
Press any key to send your own message...

Enter your message: how is your task going so far?
Message sent!
Press any key to continue...
```

Figure 21. Project Chat.

F. Posting of announcements

As project leader, he or she is allowed to post announcements that will be viewed by the project members upon logging in. You can do this by choosing option 10.

```
Enter choice: 10
Input the announcement for project Integ Lab: everthing is due on friday (April
20)
Announcement posted!
```

Figure 22. Announcement posting.

VI. Project Member Functionalities

As a project user chooses a project where he or she is just a project member, he or she will be shown the announcements posted by the project leader at the start.

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Figure 23. Project announcements.

A. Viewing projects

Project members are only able to view the on-going projects they are added to. To do so, choose option 1.

Figure 24. View projects user is added to.

B. File Upload, File download and viewing of File Revisions

The file upload functionality (option 2), download functionality (option 4) and viewing of file revisions (option 3) for project members is the same as the project leaders'.

C. Project Chat

The project chat functionality (option 5) for project members is the same as the project leaders'.

References:

Java JDBC API. (2018). Retrieved from https://docs.oracle.com/javase/8/docs/technote s/guides/jdbc/.

MySQL Statement Syntax. (2018). Retrieved from https://dev.mysql.com/doc/refman/5.7/e n/sql-syntax.html.

Getting started using Java RMI. (2018). Retrieved from https://docs.oracle.com/java se/7/docs/technotes/guides/rmi/hello/hello-world.html.