

=====

ISTE-330 Faculty Research Database Directions for Project

=====

Authors:

- Bain, Brandon
- Benkleman, Adam
- Bhakta, Aisha
- Ismaili, Shpend
- Nura, Leon

Date: April 17, 2025

Project Phase: Part 2 - Data Layer Implementation

How to Compile the Program

Requirements:

- Java JDK 8 or later
- MySQL database server running locally
- MySQL JDBC Driver (mysql-connector-java-X.X.XX.jar)

Steps:

1. Source faculty_research_group1.sql
2. Place all `.java` files in the same directory:
 - FacultyResearchDataLayer_Group1.java
 - FacultyResearchPresentationLayer_Group1.java
3. Compile using this command:
 > javac -cp .;mysql-connector-java-8.0.33.jar FacultyResearchDataLayer_Group1.java
 FacultyResearchPresentationLayer_Group1.java

(Use `:` instead of `;` on Mac/Linux)

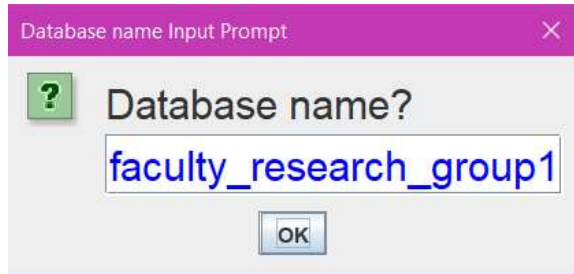
How to Run the Program

- > java -cp .;mysql-connector-java-8.0.33.jar FacultyResearchPresentationLayer_Group1
- All user logins and information are stored in the Abstracts.pdf document

Database Login

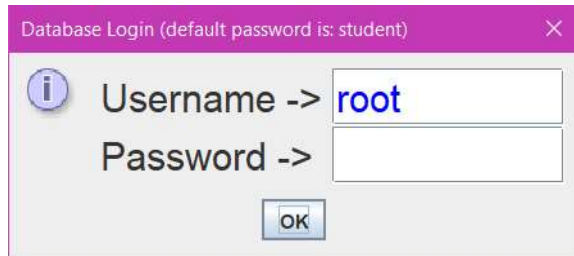
Database Input Prompt - GUI

- This is auto-filled with “faculty_research_group1”, so just click “ok”



Database Login - GUI

- This is auto-filled with the username “root”.
- The password field is blank. The data layer will use “student” if left blank.
- You can just click “ok” to log in.
- takes you to the Login/Register menu - (page 3)



Login

Login/Register - CLI

1. Login

- takes you to the login menu - (page 3)

2. Register

- takes you to the registration menu - (page 4)
- Once successfully registered, takes you to the User Menu based on your user type
 - Faculty - (page 5)
 - Student - (page 5)
 - Outside - (page 5)

3. Exit - closes the database connections and exits the program

Login - GUI

- Must enter a username
- Password can be left blank if you didn't enter a password when registering
- Upon successful login, takes you to the User Menu based on your user type
 - Faculty - (page 5)
 - Student - (page 5)
 - Outside - (page 5)



The screenshot shows a 'User Login' dialog box. It features a purple header bar with the text 'User Login' and a close button (X). Below the header, there is an information icon (i) and two text input fields. The first field is labeled 'Username ->' and the second is labeled 'Password ->'. At the bottom of the dialog, there is an 'OK' button.

----- User Registration -----

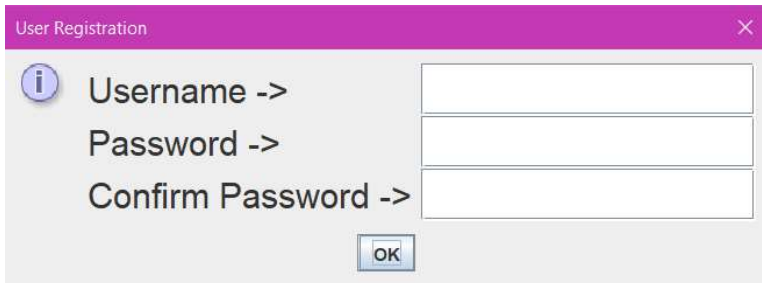
Register User - CLI -----

What kind of user are you registering as?

1. Faculty User - sets user type to "Faculty"
 2. Student User - sets user type to "Student"
 3. Outside User - sets user type to "Outside"
 4. Go Back - takes you back to the Login/Register Menu - (page 3)
- Unless "Go Back" is selected, takes you to the user registration menu - (page 4)

User Registration - GUI -----

- Must enter a username (cannot have a space and cannot already exist)
- Passwords must match (and must not be blank if registering as a Faculty)
- Starts the Transaction once the user input validates
- adds the user login to the database
- takes you to the Register User Information menu - (page 4)



Register User Information - CLI -----

Enter your user information!

Name:

Email:

Building No: - only if user is registering as Faculty

Office No: - only if user is registered as Faculty

- Once the user input is complete and the user login information is added to the database successfully, asks for the user's abstract (faculty only) and/or interests

- Faculty:

Abstract/Interest

1. Add Abstract - takes you to the Add Abstract menu - (page 6)

2. Add Interest - takes you to the Add Interest menu - (page 7)
 3. Add Both - takes you to the Add Abstract menu, then the Add Interest menu
- Student or Outside user - takes you to the Add Interest menu - (page 7)
 - Commits the Transaction if the Abstract and/or Interest is successfully added
 - Rollback the Transaction if the Abstract and/or Interest is not added successfully

User Menus

Faculty Menu - CLI

1. Abstracts Menu - takes you to the Abstracts Menu - (page 6)
2. Interests Menu - takes you to the Interests Menu - (page 7)
3. Search for Students with similar interests
 - displays a list of student contact information, who have similar interests to you
4. Log Out - sends you back to the Login/Register page - (page 3)

Student Menu - CLI

1. Interests Menu - takes you to the Interests Menu - (page 7)
2. Search for Faculty with similar interests
 - displays a list of outside contact information, who have similar interests to you
3. Search for Outsiders with similar interests
 - displays a list of outside contact information, who have similar interests to you
4. Log Out - sends you back to the Login/Register page - (page 3)

Outside Menu - CLI

1. Interests Menu - takes you to the Interests Menu - (page 7)
2. Search for Students with similar interests
 - displays a list of student contact information, who have similar interests to you
3. Log Out - sends you back to the Login/Register page - (page 3)

Abstracts Menus

Abstract Menu - CLI

1. Show Abstracts - displays a list of abstracts that you have
2. Add Abstract - sends you to the Add Abstract menu - (page 6)
3. Update Abstract
 - Starts the Transaction
 - sends you to the Delete Abstract menu - (page 6)
 - sends you to the Add Abstract menu - (page 6)
 - Commits the Transaction if the update was successful
 - Rollback the Transaction if the update was unsuccessful
4. Remove Abstract - sends you to the Delete Abstract menu - (page 6)
5. Back to Faculty Menu - sends you back to the Faculty Menu - (page 5)

Add Abstract Menu - CLI

Enter the entire abstract you want to add.

- either gets the id for the abstract, or adds it if it's a new abstract
- adds the faculty-abstract association to the database

Delete Abstract Menu - CLI

- display a numbered list of all the faculty user's abstracts

Which abstract do you want to delete?

- deletes the faculty-abstract association from the database

----- Interests Menus -----

Interests Menu - CLI -----

1. Show Interests - displays a list of interests that you have
2. Add Interest - sends you to the Add Interest menu - (page 7)
3. Update Interest
 - Starts the Transaction
 - sends you to the Delete Interest menu - (page 7)
 - sends you to the Add Interest menu - (page 7)
 - Commits the Transaction if the update was successful
 - Rollback the Transaction if the update was unsuccessful
4. Remove Interest - sends you to the Delete Interest menu - (page 7)
5. Back to User Menu - sends you back to your User Menu - (page 5)

Add Interest Menu - CLI -----

Enter the interest(s) you want to add.
(use commas to add more than one)
- either gets the id for the interest, or adds it if it's a new interest
- adds the user-interest association to the database

Delete Interest Menu - CLI -----

- displays a numbered list of the user's interests
Which interest do you want to delete?
- deletes the user-interest association from the database

Additional Information

- Passwords are encrypted with SHA-1 before being stored or validated.
- New users must register via the `registerUsername()` method before using the system.

Java File with `main()` Method

- The main method is located in:
`FacultyResearchPresentationLayer_Group1.java`

This class launches the login interface and connects to the database.

MySQL Database Info

- Database name: `faculty_research_group1`
- SQL schema file: `faculty_research_group1.sql`
- Default MySQL credentials:
 - Username: `root`
 - Password: `student`

To create the database, run the `.sql` file using your MySQL client or:

```
> mysql -u root -p < faculty_research_group1.sql
```

Key Features Implemented

FacultyResearchDataLayer_Group1.java:

- Secure password encryption using SHA-1
- Faculty login and user registration
- Insertion of faculty abstracts
- Association of faculty with abstracts
- Retrieval of a faculty's abstracts
- Retrieval of faculty contact info
- Handling of user info for Students, Faculty, and Outside users
- Support for all core database insert/select logic
- Searching for other users with similar interests

Abstract File: Abstracts.docx

- contains all the login information for each “hard-coded” faculty member (count: 4), student user (count: 5), and outside user (count: 1)

Notes

- All methods include comments explaining purpose and usage, along with who the method is created by.
- Comments at the top of each Java file list the authors' names and the date.
- GUI password input uses a `JPasswordField` for secure entry.