

Name: Erik Bowling  
Date: April 14, 2023  
Class: 3300 DBMS  
Assignment: Project 3

## Project 3 Java CLI User Guide

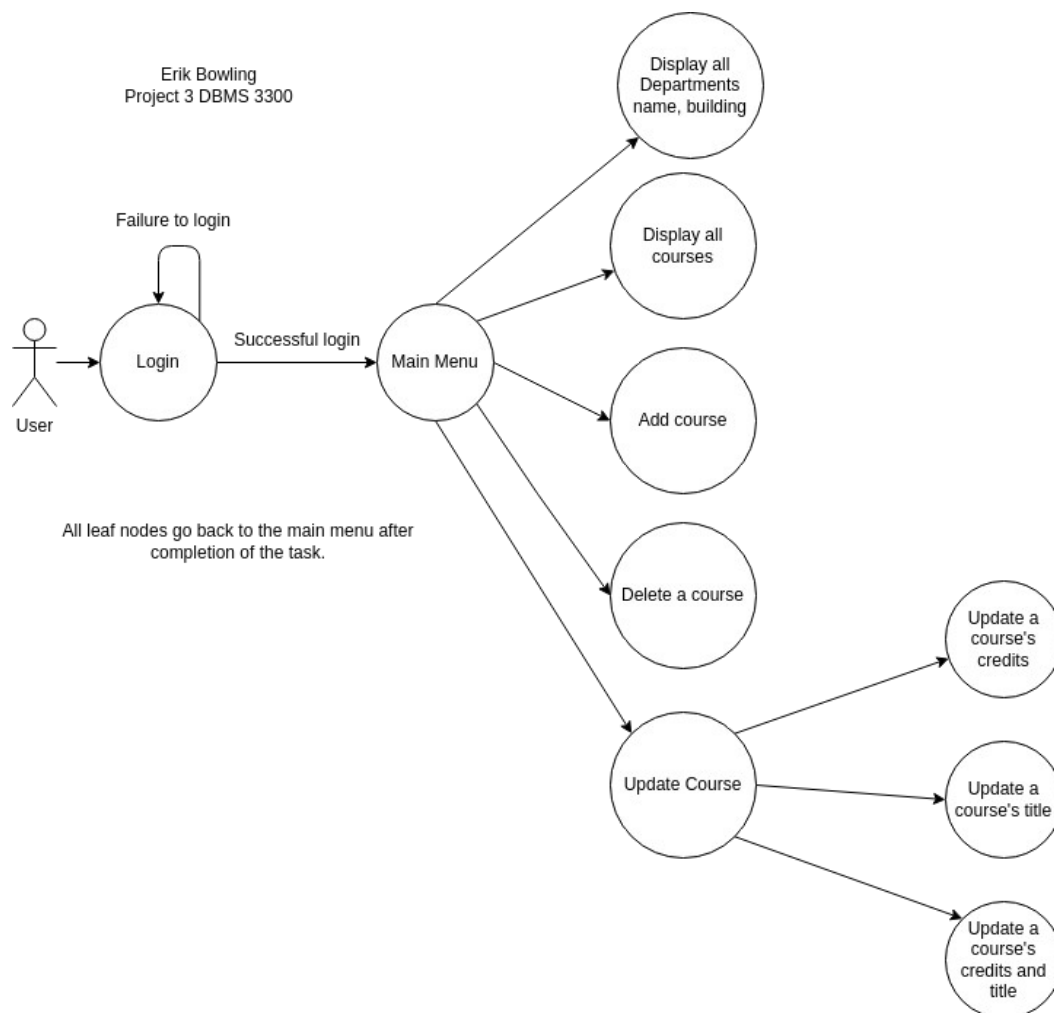
### Chapters

1. Introduction and dependencies
2. How to build the project
3. User Manual
4. Assumptions made

### 1. Introduction and Dependencies

This CLI is meant to be used on a locally hosted mysql server. The CLI also assumes the server has the Silberschatz university database installed and somewhat populated. If both of those things are true, then the application should work as intended.

The application flow:



## Dependencies

- The user has access read, write access to the course table.
- The user has access read access to the department table.
- The user must know their username and password
- The user must have the mysql java connector j jar file
  - <https://dev.mysql.com/downloads/connector/j/>

## 2. How to build the project

The application was built with a bash script that called the command

```
java -cp /usr/share/java/mysql-connector-j-8.0.32.jar project3.java
```

The general command looks something like this.

```
Java -cp <path to the connector j jar> <path to project .java>
```

The project should then open and run in the terminal window the command was entered.

Open a command line and run the command above with your unique paths.

### 3. User Manual

After the project is built and ran, the user will be in an introduction screen asking for login credentials.

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test
+-----+
|               Introduction               |
+-----+

This CLI is used to manipulate data in a local mysql
database. It assumes you are using the Silberschatz
university schema and have a database instantiated
already.

How to use:
* Follow the onscreen prompts and menus.
* Enter the numbers from the menus
* Have fun!

-Erik

+-----+
|               LOGIN               |
+-----+

Login with your mysql login credentials
Enter nothing for the username to quit.

Username: root

Password: db123

Database connected!

+-----+
|               MAIN MENU           |
+-----+
| Enter |      Option      |
+-----+
| 1     | Display all departments |
| 2     | Display all courses    |
| 3     | Add a course           |
| 4     | Delete a course        |
| 5     | Update a course        |
| 0     | Exit                   |
+-----+

Choice: 
```

Upon successful login, the user will see the main menu shown above. The user now has 6 choices.

### Choice 1: Display all departments

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test

-Erik

+-----+
|          LOGIN          |
+-----+
Login with your mysql login credentials
Enter nothing for the username to quit.

Username: root
Password: db123
Database connected!

+-----+
|          MAIN MENU          |
+-----+
| Enter |      Option      |
+-----+
| 1     | Display all departments |
| 2     | Display all courses    |
| 3     | Add a course           |
| 4     | Delete a course        |
| 5     | Update a course        |
| 0     | Exit                   |
+-----+

Choice: 1

+-----+
| DEPT NAME | BUILDING |
+-----+
| Biology   | Watson   |
| Comp. Sci. | Taylor   |
| Elec. Eng. | Taylor   |
| Finance   | Painter  |
| History   | Painter  |
| Music     | Packard  |
| Physics   | Watson   |
+-----+

Press enter to continue...

```

This option will show all the departments. Namely their name, and the building they are in.

## Choice 2: Display all courses

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test
| History | Painter |
| Music  | Packard|
| Physics| Watson |
+-----+
Press enter to continue...

+-----+
| MAIN MENU |
+-----+
| Enter | Option |
+-----+
| 1 | Display all departments |
| 2 | Display all courses |
| 3 | Add a course |
| 4 | Delete a course |
| 5 | Update a course |
| 0 | Exit |
+-----+

Choice: 2

+-----+-----+-----+-----+
| Course ID | Title | Department | Credits |
+-----+-----+-----+-----+
| BIO-101 | Intro. to Biology | Biology | 4 |
| BIO-301 | Genetics | Biology | 4 |
| BIO-399 | Computational Biology | Biology | 3 |
| CS-101 | Intro. to Computer Science | Comp. Sci. | 4 |
| CS-190 | Game Design | Comp. Sci. | 4 |
| CS-315 | Robotics | Comp. Sci. | 6 |
| CS-319 | Image Processing | Comp. Sci. | 3 |
| CS-347 | Database System Concepts | Comp. Sci. | 3 |
| EE-181 | Intro. to Digital Systems | Elec. Eng. | 3 |
| FIN-201 | Investment Banking | Finance | 3 |
| HIS-351 | World History | History | 3 |
| MU-199 | Music Video Production | Music | 3 |
| PHY-101 | Physical Principles | Physics | 4 |
| PP-100 | aime good | Biology | 98 |
+-----+-----+-----+-----+

Press enter to continue...
█
```

This option displays all info about courses.

### Choice 3: Add a course

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test

Choice: 1
+-----+
| DEPT NAME | BUILDING |
+-----+
| Biology   | Watson   |
| Comp. Sci. | Taylor   |
| Elec. Eng. | Taylor   |
| Finance    | Painter  |
| History    | Painter  |
| Music      | Packard  |
| Physics    | Watson   |
+-----+

Press enter to continue...

+-----+
|          MAIN MENU          |
+-----+
| Enter | Option |
+-----+
| 1     | Display all departments |
| 2     | Display all courses     |
| 3     | Add a course            |
| 4     | Delete a course         |
| 5     | Update a course         |
| 0     | Exit                   |
+-----+

Choice: 3
+-----+
|          ADD COURSE          |
+-----+
Course ID: Test-100
Course Title: Test_course
Department Name (Must match existing dept): Biology
Credit Hours: 12
+-----+
| COURSE ADDED SUCCESSFULLY |
+-----+

Press enter to continue...
█
```

This option lets the user enter in all the course information, and enter the course into the DB. Another run of option 2 will show the added course.

## Choice 4: Delete course

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test

| 5 | Update a course |
| 0 | Exit            |
+-----+
Choice: 3
+-----+
| ADD COURSE |
+-----+
Course ID: Test-100
Course Title: Test_course
Department Name (Must match existing dept): Biology
Credit Hours: 12
+-----+
| COURSE ADDED SUCCESSFULLY |
+-----+

Press enter to continue...

+-----+
| MAIN MENU |
+-----+
| Enter | Option |
+-----+
| 1 | Display all departments |
| 2 | Display all courses |
| 3 | Add a course |
| 4 | Delete a course |
| 5 | Update a course |
| 0 | Exit |
+-----+

Choice: 4
+-----+
| DELETE COURSE |
+-----+
Course ID: Test-100
+-----+
| SUCCESFULLY DELETED COURSE |
+-----+

Press enter to continue...
```

This option takes a course id and deletes the course with that ID from the database.



## Choice 5: Update a course

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test
Course ID: Test-100
+-----+
| SUCCESSFULLY DELETED COURSE |
+-----+

Press enter to continue...

+-----+
| MAIN MENU |
+-----+
| Enter | Option |
+-----+
| 1 | Display all departments |
| 2 | Display all courses |
| 3 | Add a course |
| 4 | Delete a course |
| 5 | Update a course |
| 0 | Exit |
+-----+

Choice: 5

+-----+
| Enter | Option |
+-----+
| 1 | Update Title |
| 2 | Update Credits |
| 3 | Update Title and credits |
| 0 | Exit |
+-----+

Choice: 1

What course to modify? (course_id): CS-101
What is the new title?: Computer science is cool

+-----+
| UPDATED | VALUE |
+-----+
| TITLE | Computer science is cool |
+-----+

Press enter to continue...
```

This option lets the user modify an existing course based on an ID. The user has 3 options.

- Update title
- Update credits
- Update both

The above picture is an example of the first option. You can also refer to the diagram above for an abstracted view of this process.

The other two options are very similar to this first one.

## Choice 0:

```
erik@erik-MS-7B98: ~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test

+-----+
Choice: 5
+-----+
| Enter |      Option      |
+-----+
| 1     | Update Title     |
| 2     | Update Credits   |
| 3     | Update Title and credits |
| 0     | Exit             |
+-----+
Choice: 1

What course to modify? (course_id): CS-101
What is the new title?: Computer science is cool

+-----+
| UPDATED |      VALUE      |
+-----+
| TITLE   | Computer science is cool |
+-----+

Press enter to continue...

+-----+
|      MAIN MENU      |
+-----+
| Enter |      Option      |
+-----+
| 1     | Display all departments |
| 2     | Display all courses     |
| 3     | Add a course            |
| 4     | Delete a course         |
| 5     | Update a course         |
| 0     | Exit                    |
+-----+

Choice: 0

+-----+
|      GOODBYE      |
+-----+

erik@erik-MS-7B98:~/Documents/school/3300_DBMS/project3/DBMS_proj_3/test$
```

Choice 0 is the way the user exits the application.

## 4. Assumptions

Some assumptions I made while building this have to do with the formatting of the data. I didn't account for the maximum length some of the column values may have. Depending on the database, the data formatting may be a bit wonky. Reasonable data looks good though.

I also assumed the order of the columns in the tables. If the order of the tables would change, the output of this program would change. It could cause some confusion if the data changed a bit. But if you are using the Silberschatz university schema, it should work fine.

\* I tested this using the small relational insert file given to us in class. I did not run this against the large one.