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CMPSC 487W
Project 1

When initially starting the program, the user is greeted with the following interface:

```
Select access:
1. Student
2. Faculty
3. Admin

Your choice? (1 - 3):
```

If the user makes an invalid choice, it will continue to prompt them until they input either 1, 2, or 3. Inputting 1 or 2 will then prompt the user to swipe their ID card, like so:

```
Your choice? (1 - 3): 1

Swipe ID card:%A123456789
```

The program will ignore the first two characters and any characters after the nine characters after the first two, essentially extracting the ID from the input string. If the user attempts to input an invalid ID, the following message will be displayed, and the program will exit:

```
Swipe ID card:this isnt a valid ID format
Invalid ID!

Process finished with exit code 0
```

If they input a correctly formatted ID, but one that is not registered in the database, the following will be displayed:

```
Swipe ID card:%A112233445
User not found, contact the admin for access.

Process finished with exit code 0
```

If they input a correctly formatted ID that is in the database, but that ID is suspended, the following will be displayed:

```
Swipe ID card:%A111111111
Access denied. User is suspended.

Process finished with exit code 0
```

*The suspension check is only done if the user is attempting to get into the lab, to prevent anyone from becoming trapped in the lab if they are suspended while inside.
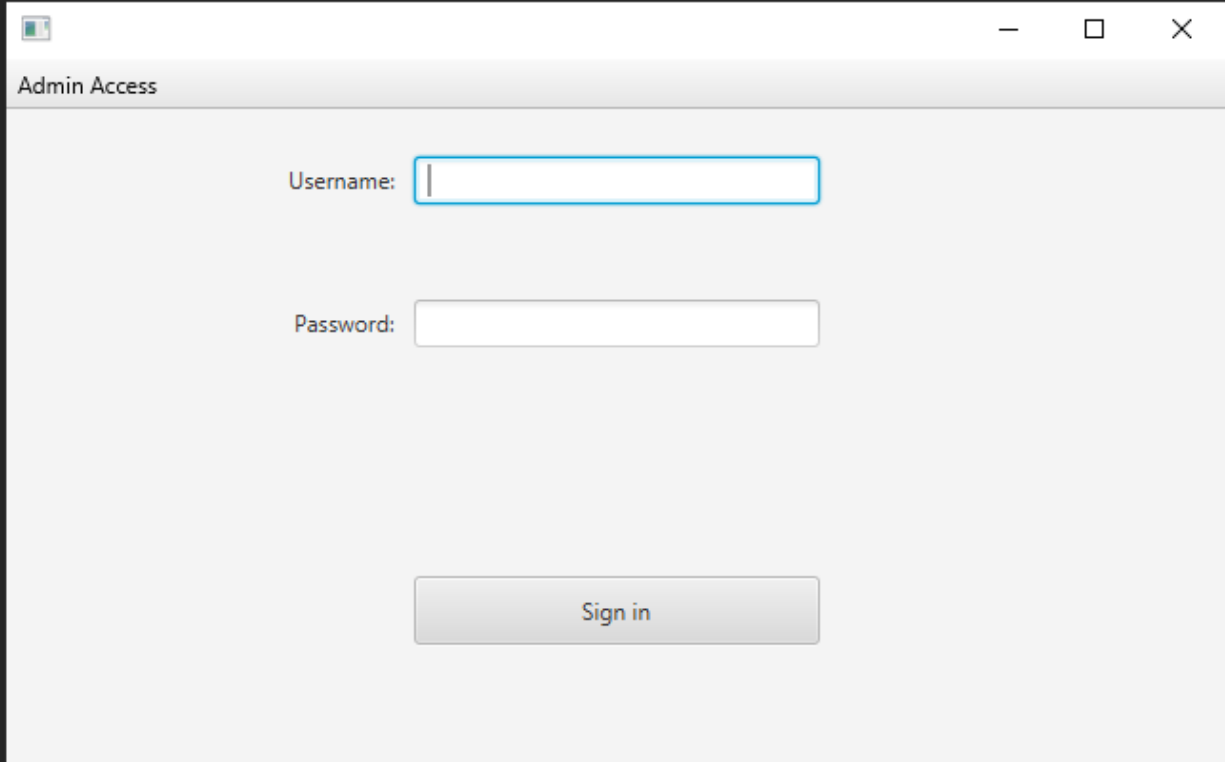
If a valid, activated ID, is input, one of the following messages will display, depending on if the swipe was an entrance/exit, respectively:

```
Swipe ID card:%A111111133
Access granted. Door opened.
```

```
Swipe ID card:%A111111133
Door opened.
```
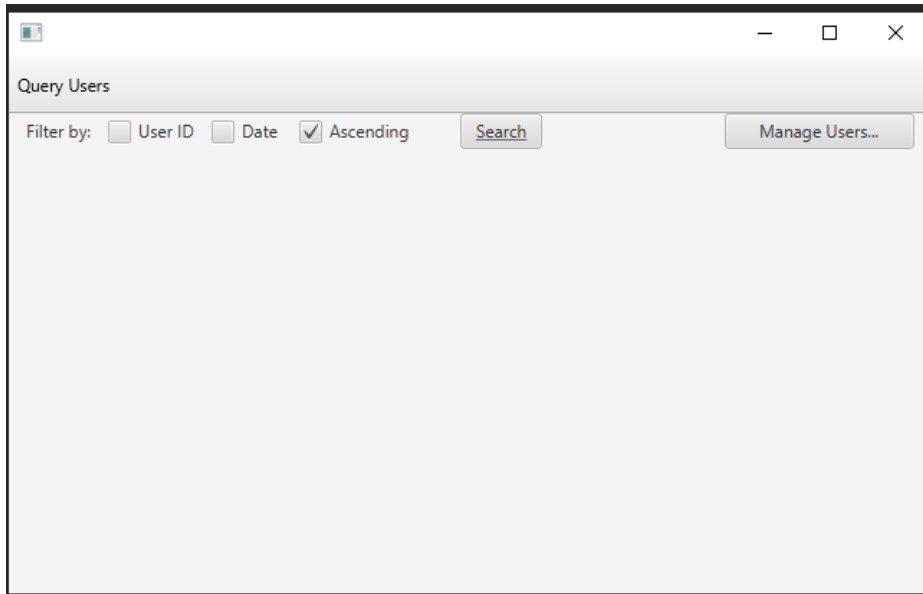
Note that students and faculty are treated completely identically. Both can be suspended by the admin and there are no differences when selecting 1 or 2 on the access screen. The only difference is the rank parameter in the users table, but this is not used beyond showing up when querying users in the admin control panel.

If 3 is selected on the access screen, the (presumably admin) will be greeted with the following login screen. For the purposes of demonstration, the username is "user" and the password is "pass". These are hardcoded, although future implementations may choose to run the username and password through a hash algorithm and then compare that to prevent anyone with access to the code from learning the username and password.
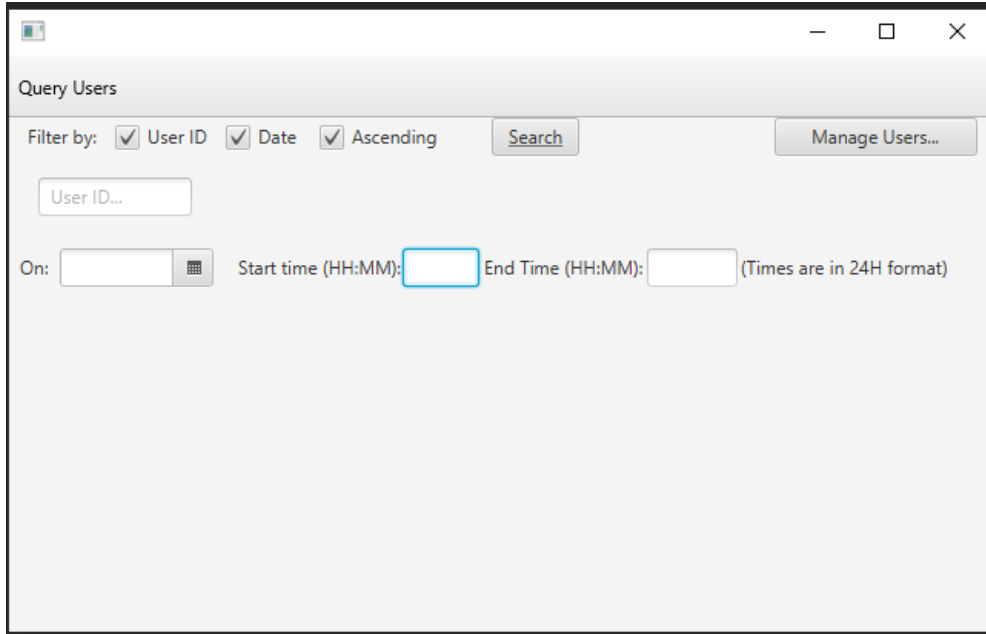
If the correct username and password are input, upon hitting the sign in button the admin is brought to the following screen:
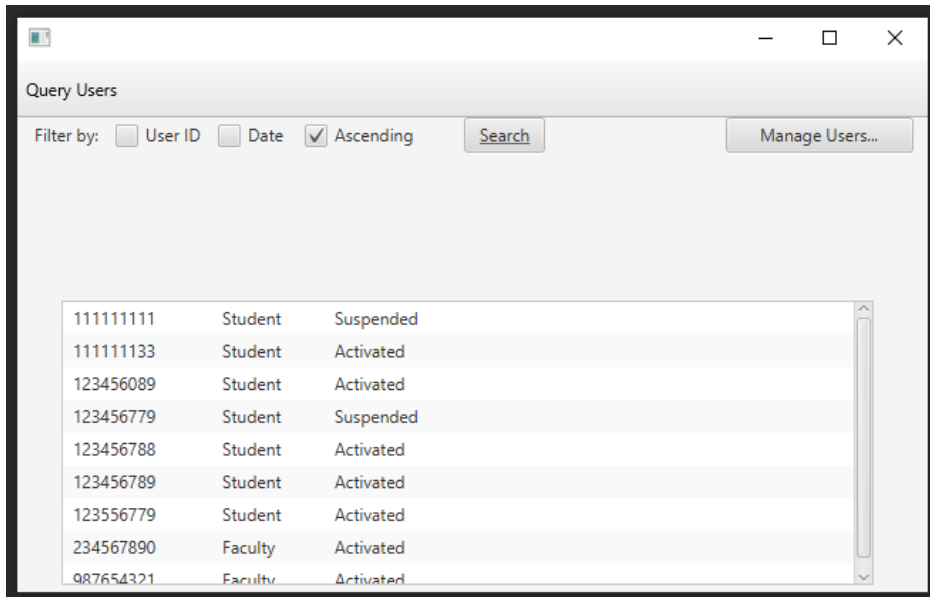

If the admin clicks the User ID button, a text prompt will appear to request which ID to search for. Clicking the date button will make a UI appear to get the desired date, and time range, like so:

Queries are only executed upon the search button being pressed, and assuming there are no input errors in any of the visible text fields. Attempting to execute a query with a bad input will display an error message and not execute the query. The ascending box controls which order the entries are displayed in.
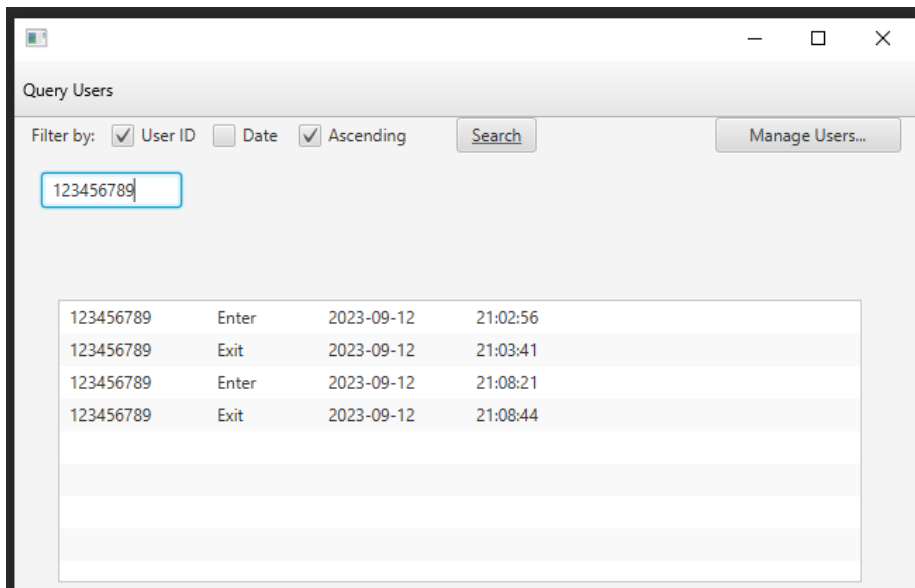
If neither the User ID box nor the Date box are checked, the result of the query will simply be a list of all user ids in the system, their ranks, and whether or not they are currently suspended.

If only the User ID box is checked with an appropriate ID in the respective field, it will show all swipes the user has ever done.
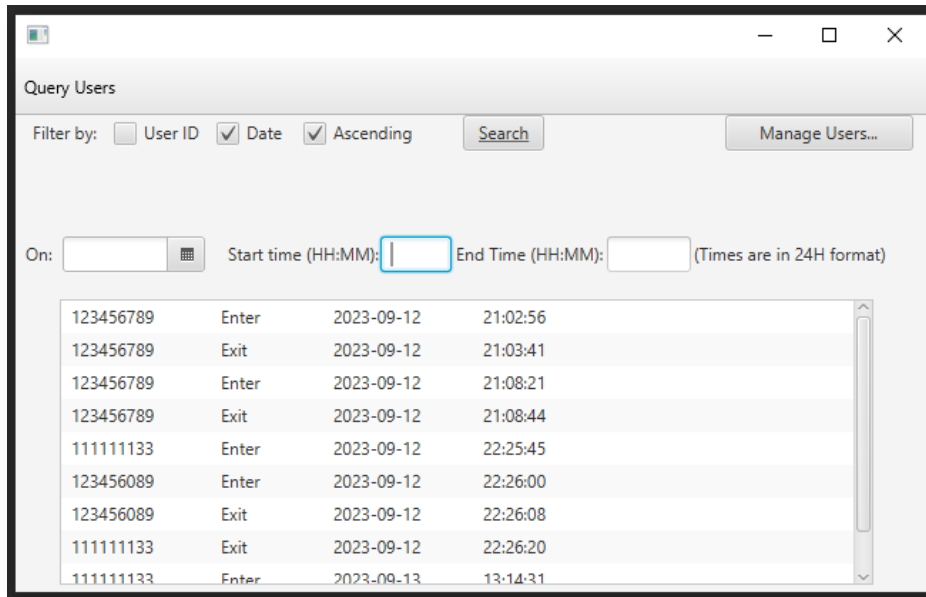
If the date box is checked, several things may happen depending on which fields have values:

- If there is no date given, it will display all swipes ever done on the machine. If times are given, they will be ignored.
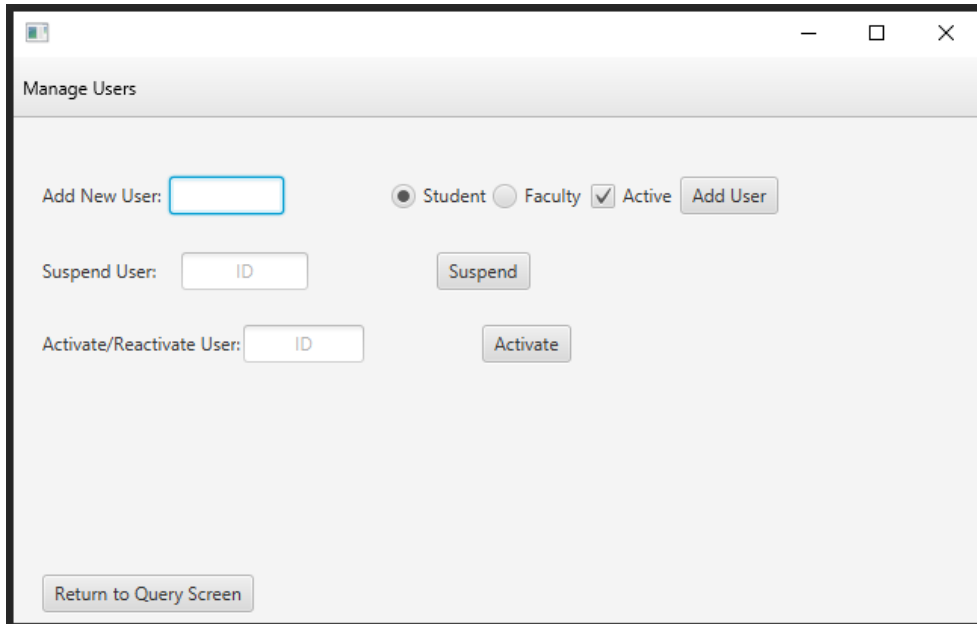

- If a date is given, but both time fields are left blank, it will display all the swipes that occurred on that specific day
- If a date and start time are given, it will only show swipes on that day past a specific time
- If a date and end time are given, it will only show swipes on that day before a specific time
- If the date, start time, and end time are all given, it will only show swipes on that day within the specified time range.

If the User ID box is also checked and the respective field has an appropriate (correctly formatted and existent) value, it will follow the same rules as above, except only for the user with the specified ID.

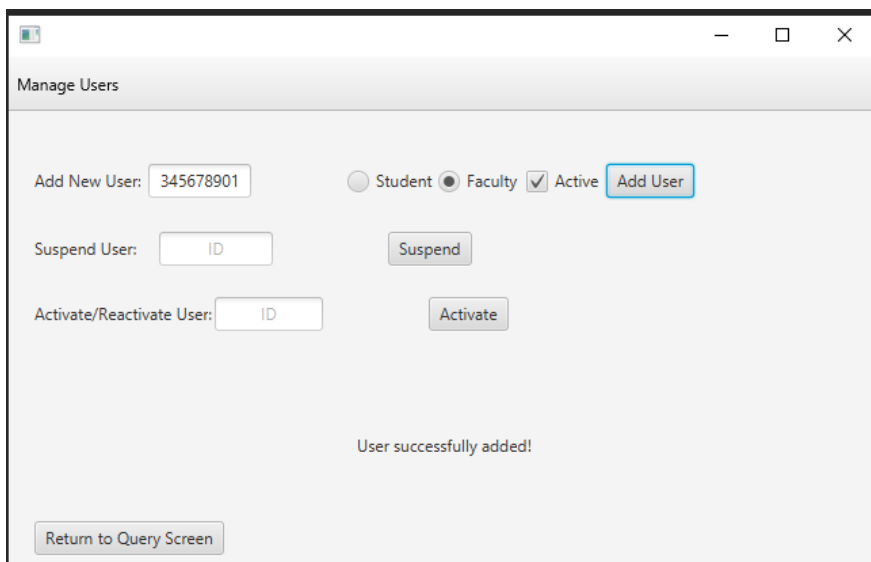Clicking the "Manage Users…" button at the top right will take the admin to the user control panel:

The bottom left button returns the admin to the previous screen.

The three rightmost buttons will attempt to add, suspend, and activate a given user account, respectively. All three will fail and display an error message upon trying to enter an invalid ID format (such as a non-number, or a number without 9 digits). "Add User" will fail if the user already exists within the database. Upon clicking the "Add User" button, a new user is created with the given ID and rank as selected by the checkbox. If the "Active" box is checked, the user will automatically be granted access to the sun lab upon creation, instead of needing to create the ID first and then activate it later.

"Suspend" and "Activate" will fail if the user does not exist within the database. All three will display an error message if they fail, or a success message otherwise.

Suspend and Activate do not display error messages when attempting to suspend/activate a user that is already suspended/activated. If they succeed, they will update the hasAccess variable in the users table, effectively revoking or granting access.