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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:XA123456789|
```

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:XA112233445
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:XA111111111
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.

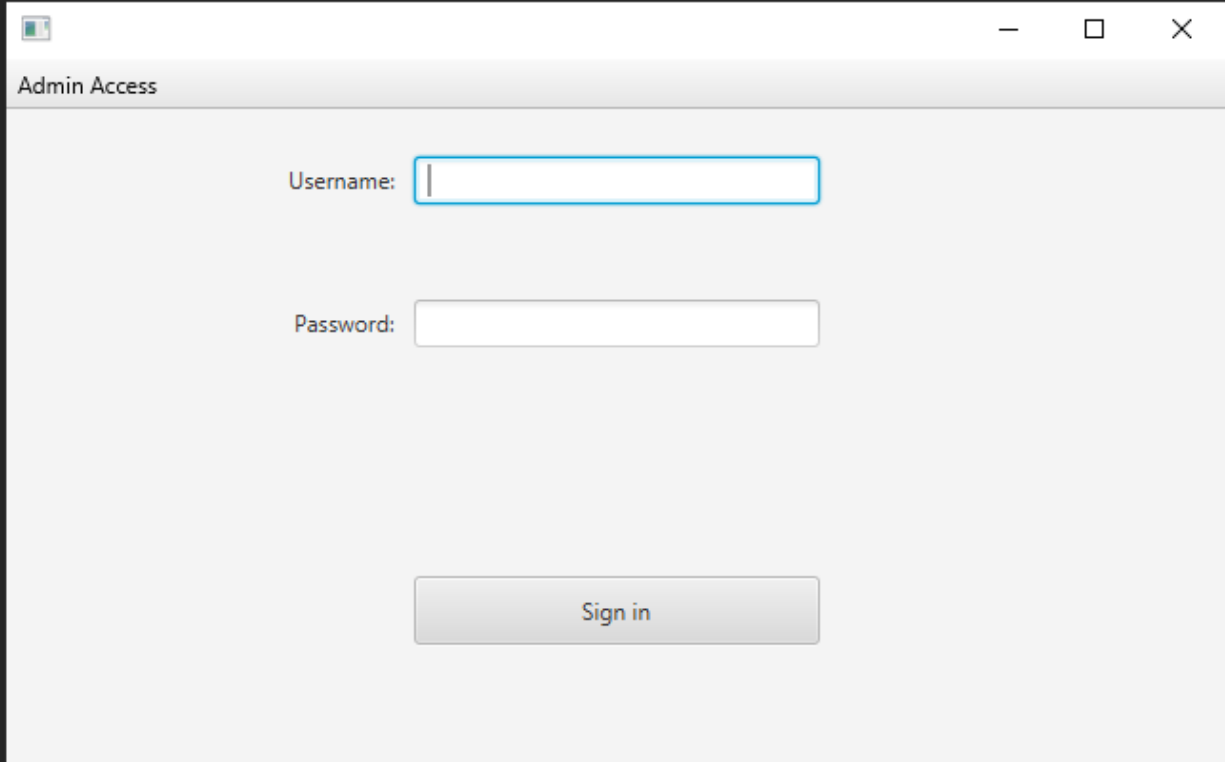
If a valid, activated ID, is input, one of the following messages will display, depending on if the swipe was an entrance/exit, respectively:

```
Swipe ID card:NA111111133  
Access granted. Door opened.
```

```
Swipe ID card:NA111111133  
Door opened.
```

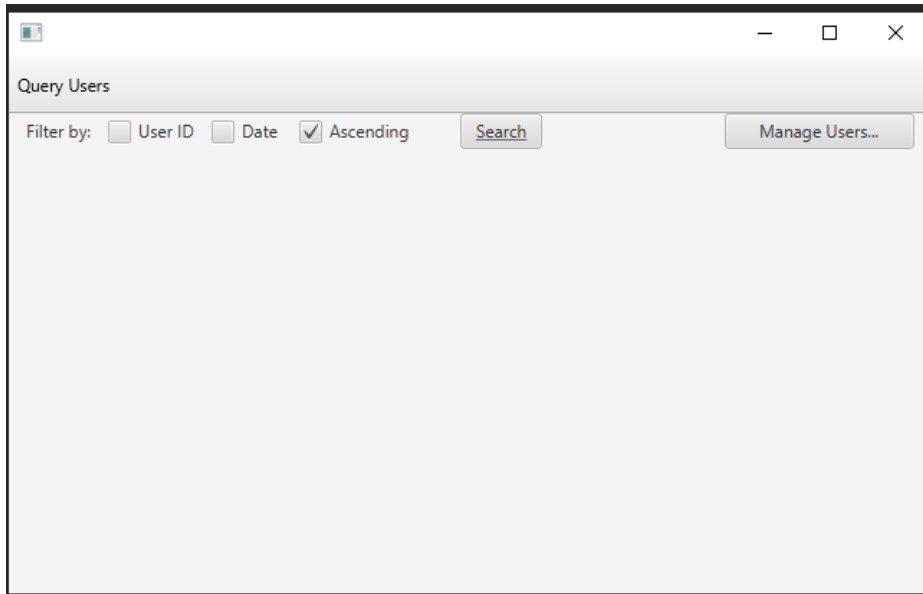
Note that students and faculty are treated completely identically. Both can be suspended by the admin and there are no differences when selecting 1 or 2 on the access screen. The only difference is the rank parameter in the users table, but this is not used beyond showing up when querying users in the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



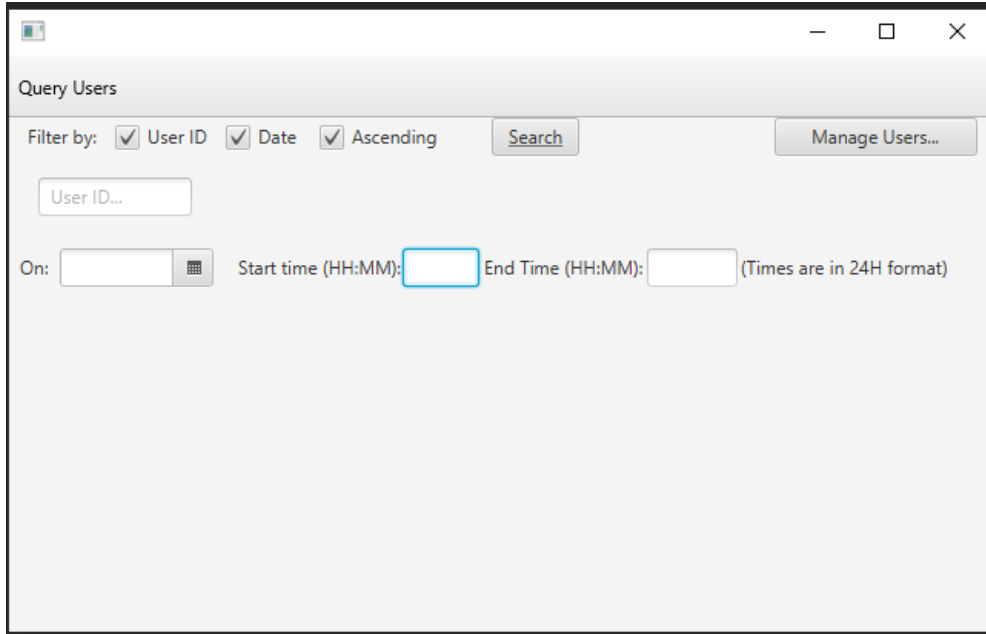
The image shows a screenshot of a web application window titled "Admin Access". The window has a standard Windows-style title bar with minimize, maximize, and close buttons. The main content area is light gray and contains two input fields. The first field is labeled "Username:" and has a blue border. The second field is labeled "Password:" and has a white border. Below these fields is a gray button with the text "Sign in".

If the correct username and password are input, upon hitting the sign in button the admin is brought to the following screen:



The screenshot shows a window titled "Query Users" with a standard Windows-style title bar (minimize, maximize, close buttons). Below the title bar, there is a filter section with the text "Filter by:" followed by three checkboxes: "User ID", "Date", and "Ascending". The "Ascending" checkbox is checked. To the right of these checkboxes is a "Search" button. Further to the right is a "Manage Users..." button. The main area of the window is empty.

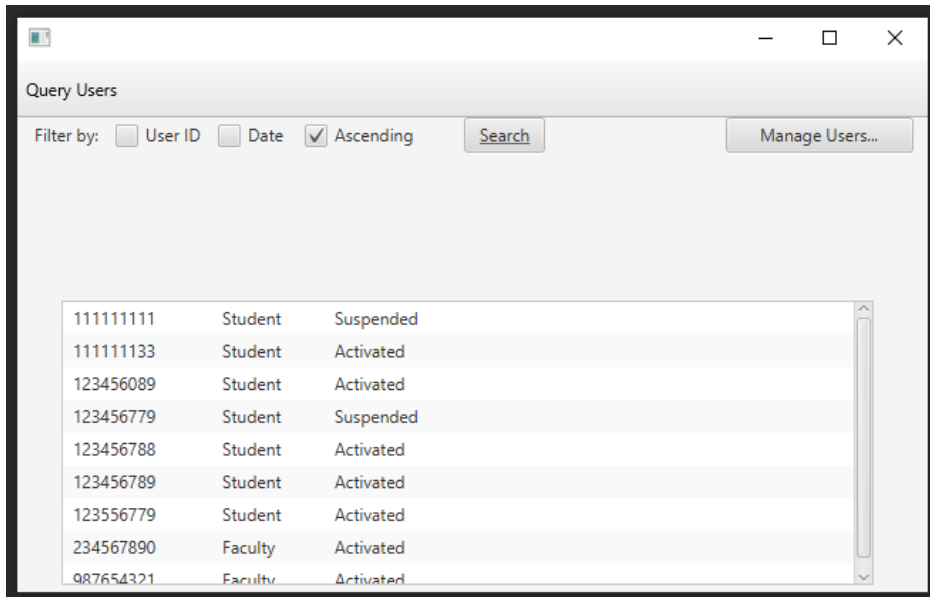
If the admin clicks the User ID button, a text prompt will appear to request which ID to search for. Clicking the date button will make a UI appear to get the desired date, and time range, like so:



The screenshot shows the "Query Users" window with the following elements: The "Filter by:" section now has three checked checkboxes: "User ID", "Date", and "Ascending". The "Search" button is still present. Below the filter section, there is a text input field labeled "User ID...". Below this, there is a section for time range selection. It starts with "On:" followed by a date picker icon. Then, it says "Start time (HH:MM):" followed by a time input field (which is highlighted with a blue border), "End Time (HH:MM):" followed by another time input field, and finally "(Times are in 24H format)". The "Manage Users..." button is still present on the right.

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.

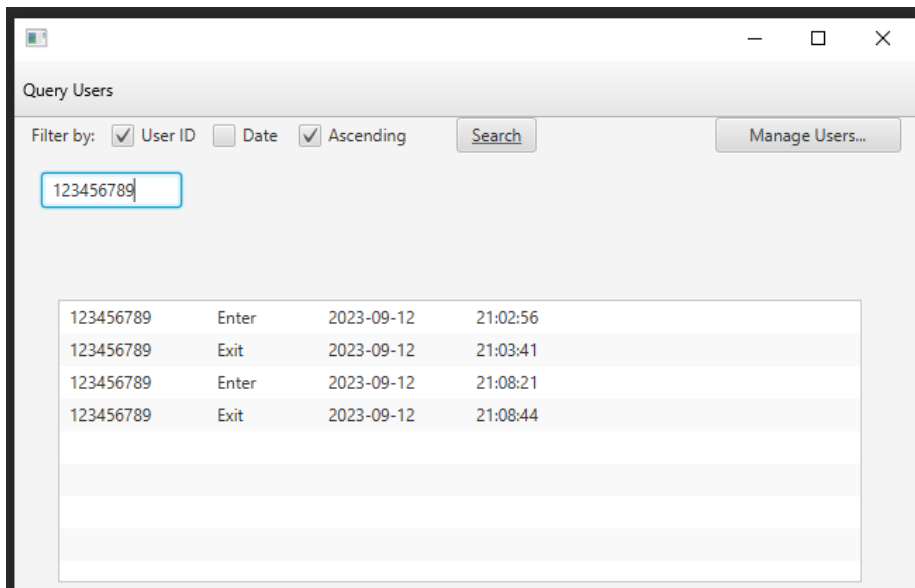
If neither the User ID box nor the Date box are checked, the result of the query will simply be a list of all user ids in the system, their ranks, and whether or not they are currently suspended.



The 'Query Users' window displays a list of users. The 'Filter by' section shows 'User ID' and 'Date' are unchecked, while 'Ascending' is checked. The 'Search' button is visible. The table below lists the results:

User ID	Rank	Status
111111111	Student	Suspended
111111133	Student	Activated
123456089	Student	Activated
123456779	Student	Suspended
123456788	Student	Activated
123456789	Student	Activated
123556779	Student	Activated
234567890	Faculty	Activated
987654321	Faculty	Activated

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.

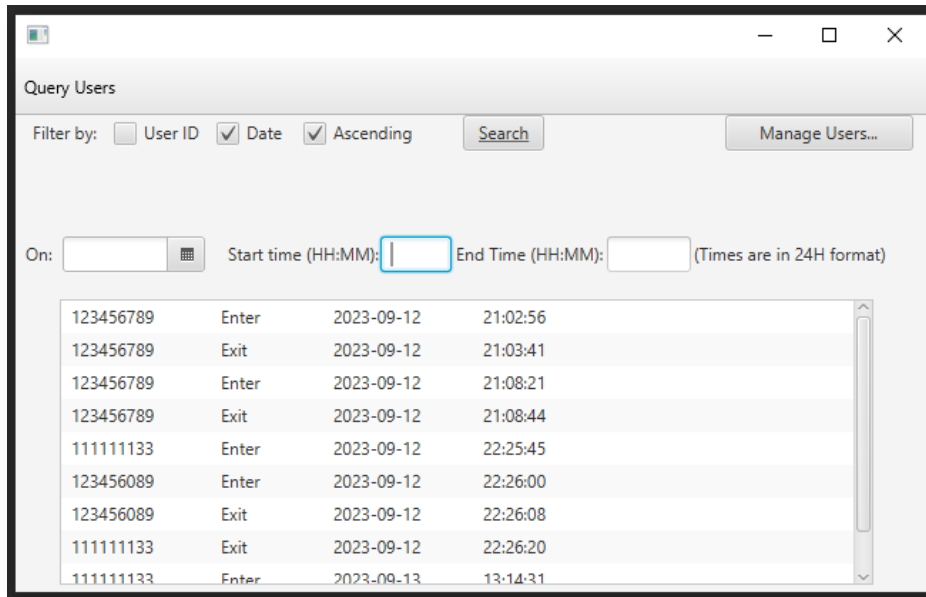


The 'Query Users' window displays a list of swipes for a specific user. The 'Filter by' section shows 'User ID' and 'Ascending' are checked, while 'Date' is unchecked. The 'Search' button is visible. The 'User ID' field contains the value '123456789'. The table below lists the results:

User ID	Action	Date	Time
123456789	Enter	2023-09-12	21:02:56
123456789	Exit	2023-09-12	21:03:41
123456789	Enter	2023-09-12	21:08:21
123456789	Exit	2023-09-12	21:08:44

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.



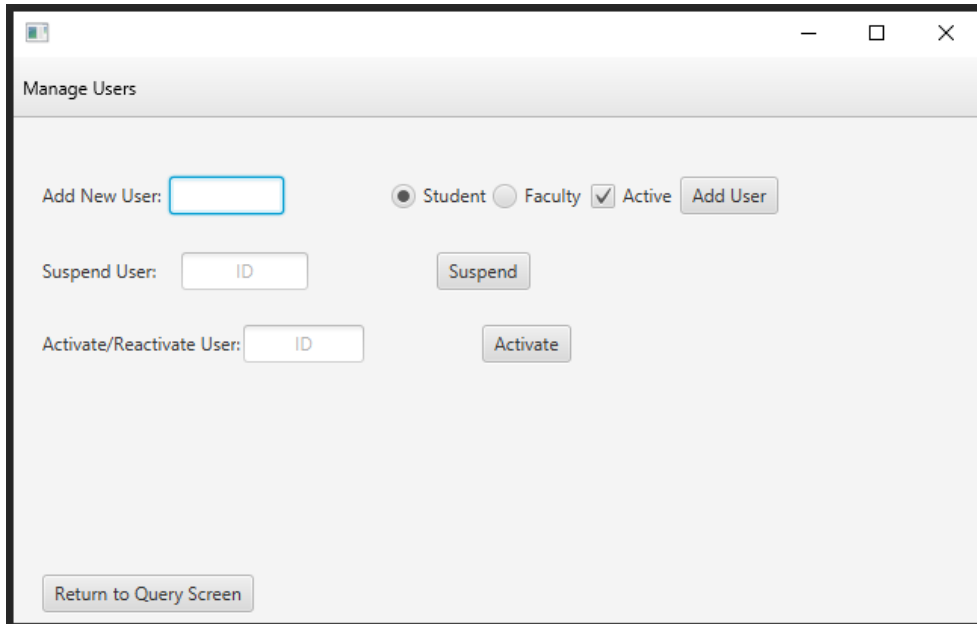
The screenshot shows a window titled "Query Users". At the top, there are filter options: "Filter by:" with checkboxes for "User ID" (unchecked), "Date" (checked), and "Ascending" (checked). There is a "Search" button and a "Manage Users..." button. Below the filters, there are input fields: "On:" with a calendar icon, "Start time (HH:MM):" (highlighted with a blue box), and "End Time (HH:MM):". A note "(Times are in 24H format)" is to the right. Below these fields is a table with the following data:

123456789	Enter	2023-09-12	21:02:56
123456789	Exit	2023-09-12	21:03:41
123456789	Enter	2023-09-12	21:08:21
123456789	Exit	2023-09-12	21:08:44
111111133	Enter	2023-09-12	22:25:45
123456089	Enter	2023-09-12	22:26:00
123456089	Exit	2023-09-12	22:26:08
111111133	Exit	2023-09-12	22:26:20
111111133	Enter	2023-09-13	13:14:31

- 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:

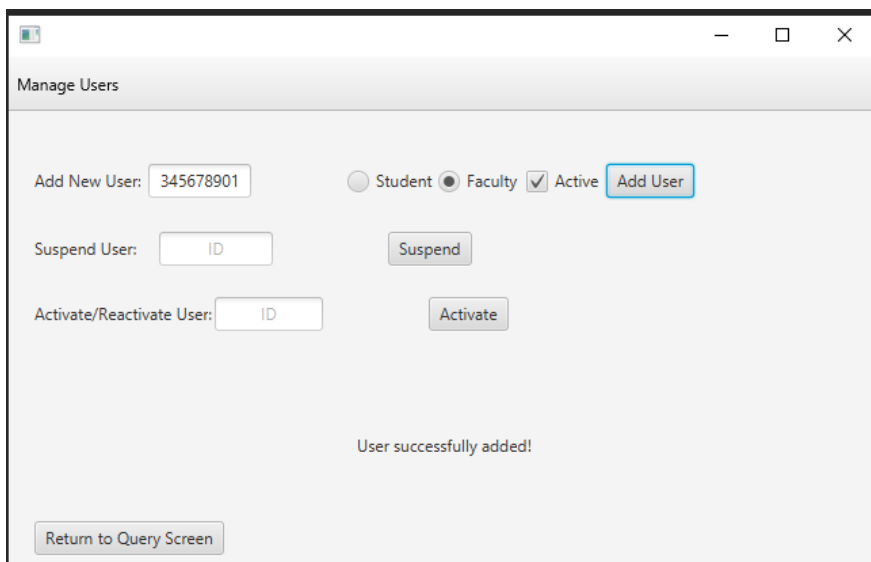


The screenshot shows a window titled "Manage Users" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains the following elements:

- Add New User:** A text input field is empty. To its right are two radio buttons: "Student" (selected) and "Faculty" (unselected). Further right is a checked checkbox labeled "Active". To the far right of this row is an "Add User" button.
- Suspend User:** A text input field labeled "ID" is empty. To its right is a "Suspend" button.
- Activate/Reactivate User:** A text input field labeled "ID" is empty. To its right is an "Activate" button.
- Return to Query Screen:** A button located at the bottom left of the window.

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.

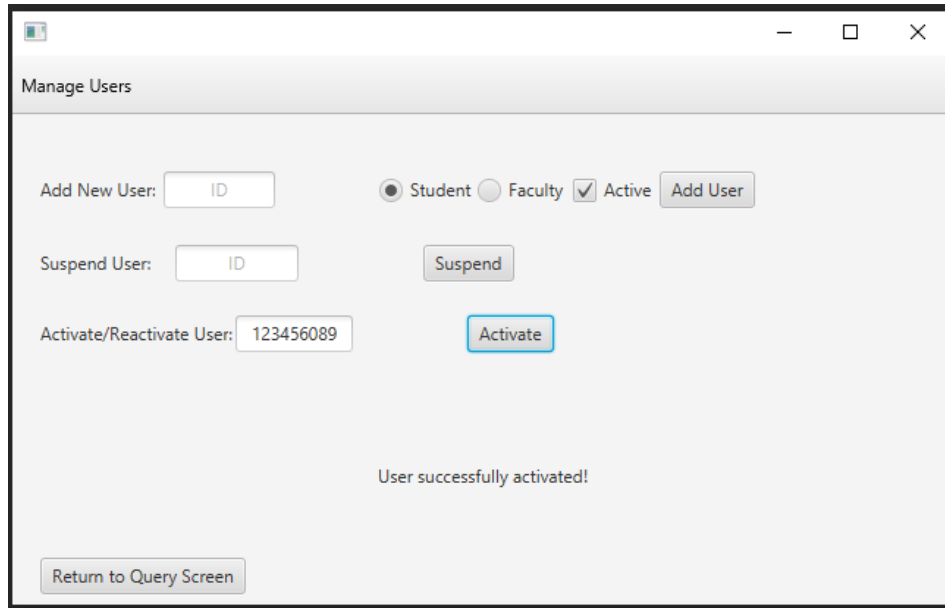


This screenshot shows the same "Manage Users" window after an action. The "Add User" button is highlighted with a blue border. The "Add New User" text input field now contains the value "345678901". The "Student" radio button is unselected, and the "Faculty" radio button is now selected. The "Active" checkbox remains checked. The "Suspend" and "Activate" buttons and their associated "ID" input fields remain unchanged. A message "User successfully added!" is displayed in the center of the window. The "Return to Query Screen" button is still at the bottom left.

The screenshot shows a window titled "Manage Users" with standard window controls (minimize, maximize, close). It contains three input sections: "Add New User:" with a text box containing "123456789", radio buttons for "Student" (selected) and "Faculty", a checked checkbox for "Active", and an "Add User" button; "Suspend User:" with a text box containing "ID" and a "Suspend" button; and "Activate/Reactivate User:" with a text box containing "ID" and an "Activate" button. A message "User already exists!" is displayed in the center. At the bottom left is a "Return to Query Screen" button.

“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.

The screenshot shows the same "Manage Users" window. The "Add New User:" section remains unchanged. In the "Suspend User:" section, the text box now contains "123456089" and the "Suspend" button is highlighted with a blue border. The "Activate/Reactivate User:" section remains unchanged. A message "User successfully suspended!" is displayed in the center. The "Return to Query Screen" button is still at the bottom left.



The image shows a window titled "Manage Users" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains three main sections for user management:

- Add New User:** A text input field labeled "ID" with the placeholder text "ID". To its right are two radio buttons: "Student" (selected) and "Faculty". Further right is a checked checkbox labeled "Active". A button labeled "Add User" is positioned to the right of the checkbox.
- Suspend User:** A text input field labeled "ID" with the placeholder text "ID". A button labeled "Suspend" is positioned to the right of the input field.
- Activate/Reactivate User:** A text input field containing the value "123456089". A button labeled "Activate" is positioned to the right of the input field.

Below these sections, a status message reads "User successfully activated!". At the bottom left, there is a button labeled "Return to Query Screen".

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.