

**Group Members:**

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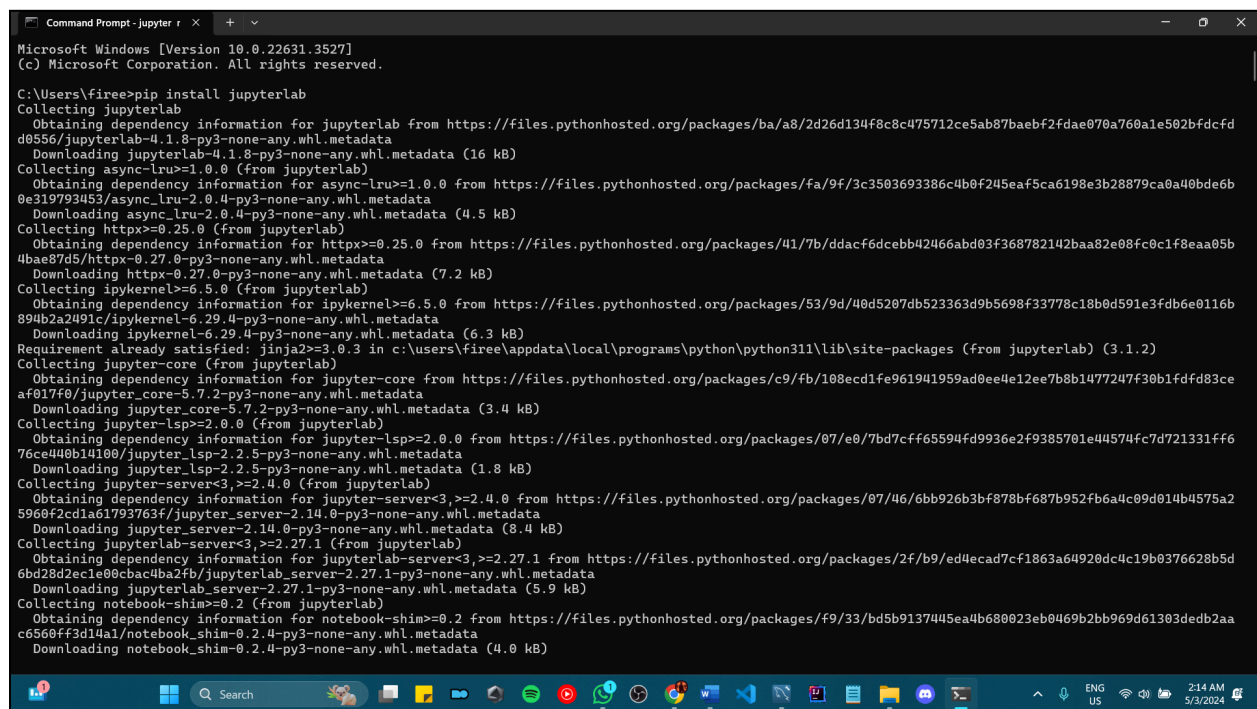
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1. In the project, we used Python programming language and wrote the code in the Jupyter Notebook, to run the project you will need to install the Jupyter Notebook using the link: <https://jupyter.org/install>
2. After installing Jupyter Notebook, open the command prompt(run as administration) and type the below command to install the jupyter lab. Note: Make sure you have Python installed. If not download it from here: [\(https://www.python.org/downloads/\)](https://www.python.org/downloads/)

**pip install jupyterlab**



```
Microsoft Windows [Version 10.0.22631.3527]
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C:\Users\firee>pip install jupyterlab
Collecting jupyterlab
  Obtaining dependency information for jupyterlab from https://files.pythonhosted.org/packages/ba/a8/2d26d134f8c8c475712ce5ab87baebf2fd9ae070a760a1e502bdfdcfd08556/jupyterlab-4.1.8-py3-none-any.whl.metadata
  Downloading jupyterlab-4.1.8-py3-none-any.whl.metadata (16 kB)
Collecting jupyterlab==4.1.8 (from jupyterlab)
  Obtaining dependency information for jupyterlab==4.1.8 from https://files.pythonhosted.org/packages/fa/9f/3c3503693386c4b0f245eaf5ca619e3b28879ca0a40bde6b0e3197924853/async_lru-2.0.4-py3-none-any.whl.metadata
  Downloading async_lru-2.0.4-py3-none-any.whl.metadata (4.5 kB)
Collecting httpx>=0.25.0 (from jupyterlab)
  Obtaining dependency information for httpx>=0.25.0 from https://files.pythonhosted.org/packages/41/7b/ddacf6dcebb42466abd03f368782142baa82e08fc0c1f8eaa05b4bae87d5/httpx-0.27.0-py3-none-any.whl.metadata
  Downloading httpx-0.27.0-py3-none-any.whl.metadata (7.2 kB)
Collecting ipykernel>=6.5.0 (from jupyterlab)
  Obtaining dependency information for ipykernel>=6.5.0 from https://files.pythonhosted.org/packages/53/9d/40d5207db523363d9b5698f33778c18b0d591e3fdb6e0116b894b2a2491c/ipykernel-6.29.4-py3-none-any.whl.metadata
  Downloading ipykernel-6.29.4-py3-none-any.whl.metadata (6.3 kB)
Requirement already satisfied: Jinja2>=3.0.3 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyterlab) (3.1.2)
Collecting jupyter-core (from jupyterlab)
  Obtaining dependency information for jupyter-core from https://files.pythonhosted.org/packages/c9/fb/108ecd1fe961941959ad0ee4e12ee7b8b1477247f30b1fd83ceaf017f0/jupyter_core-5.7.2-py3-none-any.whl.metadata
  Downloading jupyter_core-5.7.2-py3-none-any.whl.metadata (3.4 kB)
Collecting jupyter-lsp>=2.0.0 (from jupyterlab)
  Obtaining dependency information for jupyter-lsp>=2.0.0 from https://files.pythonhosted.org/packages/07/e0/7bd7cfff65594fd936e2f9385701e44574fc7d721331fff676ce440b14100/jupyter_lsp-2.2.5-py3-none-any.whl.metadata
  Downloading jupyter_lsp-2.2.5-py3-none-any.whl.metadata (1.8 kB)
Collecting jupyter-server<3,>=2.4.0 (from jupyterlab)
  Obtaining dependency information for jupyter-server<3,>=2.4.0 from https://files.pythonhosted.org/packages/07/46/6bb926b3bf878bf687b952fb6a4c09d014b4575a25960f2cd1a61793763f/jupyter_server-2.14.0-py3-none-any.whl.metadata
  Downloading jupyter_server-2.14.0-py3-none-any.whl.metadata (8.4 kB)
Collecting jupyterlab-server<3,>=2.27.1 (from jupyterlab)
  Obtaining dependency information for jupyterlab-server<3,>=2.27.1 from https://files.pythonhosted.org/packages/2f/b9/ed4ecad7c7f1863a64920dc4c19b0376628b5d6bd28d2ec1e00cbac4ba2fb/jupyterlab_server-2.27.1-py3-none-any.whl.metadata
  Downloading jupyterlab_server-2.27.1-py3-none-any.whl.metadata (5.9 kB)
Collecting notebook-shim>=0.2 (from jupyterlab)
  Obtaining dependency information for notebook-shim>=0.2 from https://files.pythonhosted.org/packages/f9/33/bd5b9137445ea4b680023eb0469b2bb969d61303dedb2aac6560ff3d14a1/notebook_shim-0.2.4-py3-none-any.whl.metadata
  Downloading notebook_shim-0.2.4-py3-none-any.whl.metadata (4.0 kB)
```

3. Next, type another command to install the Jupyter Notebook as shown below:

**pip install notebook**

```
Command Prompt - jupyter r x + v
C:\Users\firee>
C:\Users\firee>
C:\Users\firee>pip install notebook
Collecting notebook
  Obtaining dependency information for notebook from https://files.pythonhosted.org/packages/08/e6/e032f6a4d3da85c4bd38b6ff96de51347bfb0d932ea1d2ccfd89c6374c8a/notebook-7.1.3-py3-none-any.whl.metadata
  Downloading notebook-7.1.3-py3-none-any.whl.metadata (10 kB)
Requirement already satisfied: jupyter-server<3,>=2.4.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from notebook) (2.14.0)
Requirement already satisfied: jupyterlab-server<3,>=2.22.1 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from notebook) (2.27.1)
Requirement already satisfied: jupyterlab<4.2,>=4.1.1 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from notebook) (4.1.8)
Requirement already satisfied: notebook-shim<0.3,>=0.2 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from notebook) (0.2.4)
Requirement already satisfied: tornado<=6.2.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from notebook) (6.4)
Requirement already satisfied: anyio<=3.1.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (4.3.0)
Requirement already satisfied: argon2-cffi<=21.1 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (23.1.0)
Requirement already satisfied: Jinja2<=3.0.3 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (3.1.2)
Requirement already satisfied: jupyter-client<=7.4.4 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (8.6.1)
Requirement already satisfied: jupyter-core<=5.0.*,>=4.12 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (5.7.2)
Requirement already satisfied: jupyter-events<=0.9.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (0.10.0)
Requirement already satisfied: jupyter-server-terminals<=0.4.4 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (0.5.3)
Requirement already satisfied: nbconvert<=6.4.4 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (7.16.4)
Requirement already satisfied: nbformat<=5.3.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (5.10.4)
Requirement already satisfied: overrides<=5.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (7.7.0)
Requirement already satisfied: packaging<=22.0 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (23.2)
Requirement already satisfied: prometheus-client<=0.9 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (0.20.0)
Requirement already satisfied: pywinpty<=2.0.1 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (2.0.13)
Requirement already satisfied: pyzmq<=24 in c:\users\firee\appdata\local\programs\python\python311\lib\site-packages (from jupyter-server<3,>=2.4.0->notebook) (26.0.3)
```

4. We need to establish a database connectivity with our programming interface so once you have installed the notebook, install 'MySQL connector' by using the below command:

**pip install mysql-connector-python**

```
Command Prompt - jupyter n x Windows PowerShell x + v
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

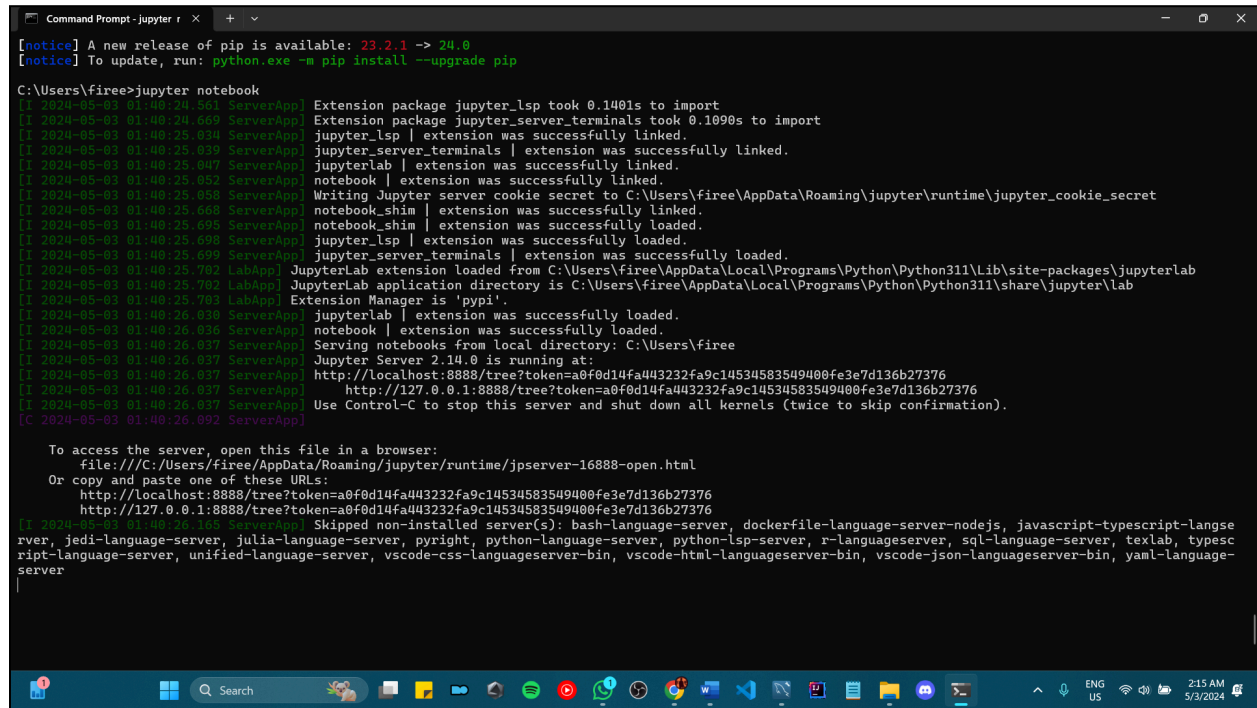
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\firee> pip install mysql-connector-python
Collecting mysql-connector-python
  Obtaining dependency information for mysql-connector-python from https://files.pythonhosted.org/packages/38/b4/44efe46d5aff497b6009e4755a5e26a99fd8fe2769857dffa21fad941767/mysql_connector_python-8.4.0-cp311-cp311-win_amd64.whl.metadata
  Downloading mysql_connector_python-8.4.0-cp311-cp311-win_amd64.whl.metadata (2.0 kB)
  Downloading mysql_connector_python-8.4.0-cp311-cp311-win_amd64.whl (14.5 MB)
    14.5 MB 44.5 MB/s eta 0:00:00
Installing collected packages: mysql-connector-python
Successfully installed mysql-connector-python-8.4.0

[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip
PS C:\Users\firee>
```

5. Now to open the Jupyter Notebook type the command in the command prompt as given below:

## jupyter notebook



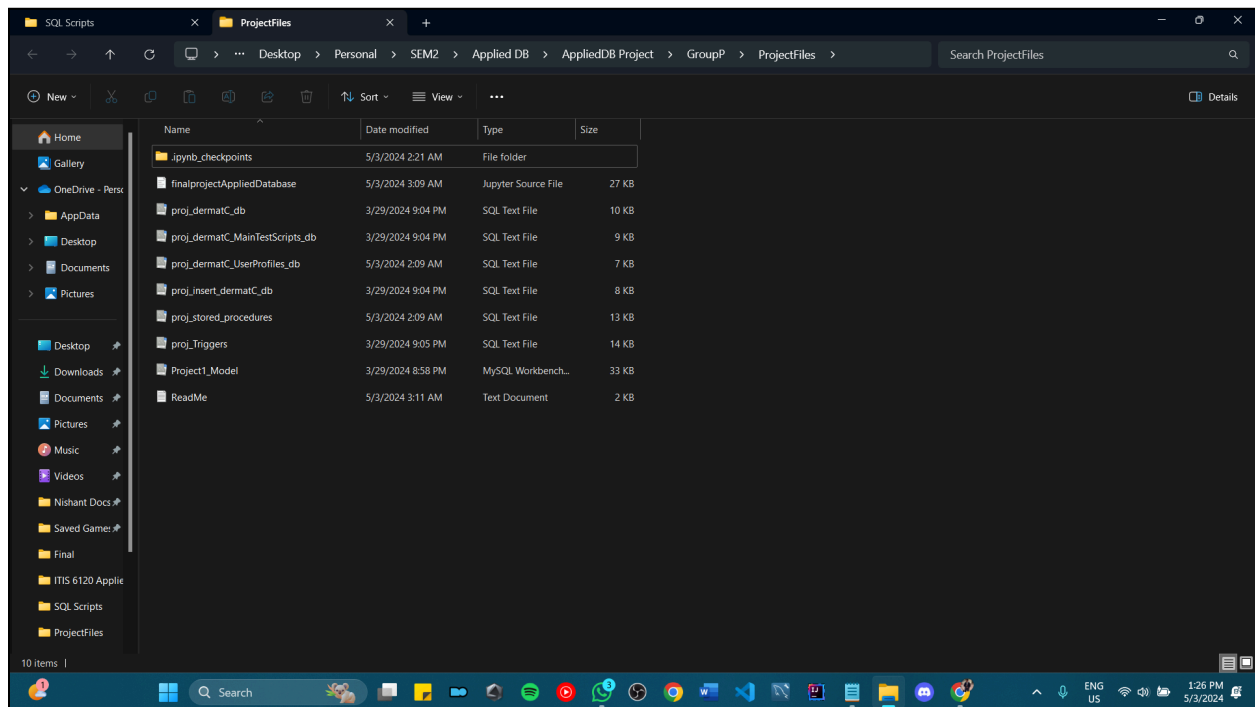
```
[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\firee>jupyter notebook
[I 2024-05-03 01:40:24.591 ServerApp] Extension package jupyter_lsp took 0.1401s to import
[I 2024-05-03 01:40:24.569 ServerApp] Extension package jupyter_server_terminals took 0.1090s to import
[I 2024-05-03 01:40:25.834 ServerApp] jupyter_lsp | extension was successfully linked.
[I 2024-05-03 01:40:25.839 ServerApp] jupyter_server_terminals | extension was successfully linked.
[I 2024-05-03 01:40:25.847 ServerApp] jupyterlab | extension was successfully linked.
[I 2024-05-03 01:40:25.852 ServerApp] notebook | extension was successfully linked.
[I 2024-05-03 01:40:25.858 ServerApp] Writing Jupyter server cookie secret to C:\Users\firee\AppData\Roaming\jupyter\runtime\jupyter_cookie_secret
[I 2024-05-03 01:40:25.668 ServerApp] notebook_shim | extension was successfully linked.
[I 2024-05-03 01:40:25.695 ServerApp] notebook_shim | extension was successfully loaded.
[I 2024-05-03 01:40:25.698 ServerApp] jupyter_lsp | extension was successfully loaded.
[I 2024-05-03 01:40:25.699 ServerApp] jupyter_server_terminals | extension was successfully loaded.
[I 2024-05-03 01:40:25.702 LabApp] JupyterLab extension loaded from C:\Users\firee\AppData\Local\Programs\Python\Python311\Lib\site-packages\jupyterlab
[I 2024-05-03 01:40:25.702 LabApp] JupyterLab application directory is C:\Users\firee\AppData\Local\Programs\Python\Python311\share\jupyter\lab
[I 2024-05-03 01:40:25.703 LabApp] Extension Manager is 'pypi'.
[I 2024-05-03 01:40:26.038 ServerApp] JupyterLab | extension was successfully loaded.
[I 2024-05-03 01:40:26.036 ServerApp] notebook | extension was successfully loaded.
[I 2024-05-03 01:40:26.037 ServerApp] Serving notebooks from local directory: C:\Users\firee
[I 2024-05-03 01:40:26.037 ServerApp] Jupyter Server 2.14.0 is running at:
[I 2024-05-03 01:40:26.037 ServerApp] http://localhost:8888/tree?token=a0f0d14fa443232fa9c14534583549400fe3e7d136b27376
[I 2024-05-03 01:40:26.037 ServerApp] http://127.0.0.1:8888/tree?token=a0f0d14fa443232fa9c14534583549400fe3e7d136b27376
[I 2024-05-03 01:40:26.037 ServerApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).

[C 2024-05-03 01:40:26.092 ServerApp]

To access the server, open this file in a browser:
file:///C:/Users/firee/AppData/Roaming/jupyter/runtime/jpserver-16888-open.html
Or copy and paste one of these URLs:
http://localhost:8888/tree?token=a0f0d14fa443232fa9c14534583549400fe3e7d136b27376
http://127.0.0.1:8888/tree?token=a0f0d14fa443232fa9c14534583549400fe3e7d136b27376
[I 2024-05-03 01:40:26.165 ServerApp] Skipped non-installed server(s): bash-language-server, dockerfile-language-server-nodejs, javascript-typescript-langs
erver, jedi-language-server, julia-language-server, pyright, python-language-server, python-lsp-server, r-languageserver, sql-language-server, texlab, typesc
ript-language-server, unified-language-server, vscode-css-languageserver-bin, vscode-html-languageserver-bin, vscode-json-languageserver-bin, yaml-language
-server
```

6. Now we are ready to use the project files, to do that download the project folder and extract the files to the working directory that you need to run your project on.



7. Based on the screenshot in step 6 the working directory path will be:

**C:\Users\firee\OneDrive\Desktop\Personal\SEM2\Applied DB\AppliedDB Project\GroupP\ProjectFiles**

After setting up the working directory to execute the scripts, type the command as shown below:

**jupyter notebook**

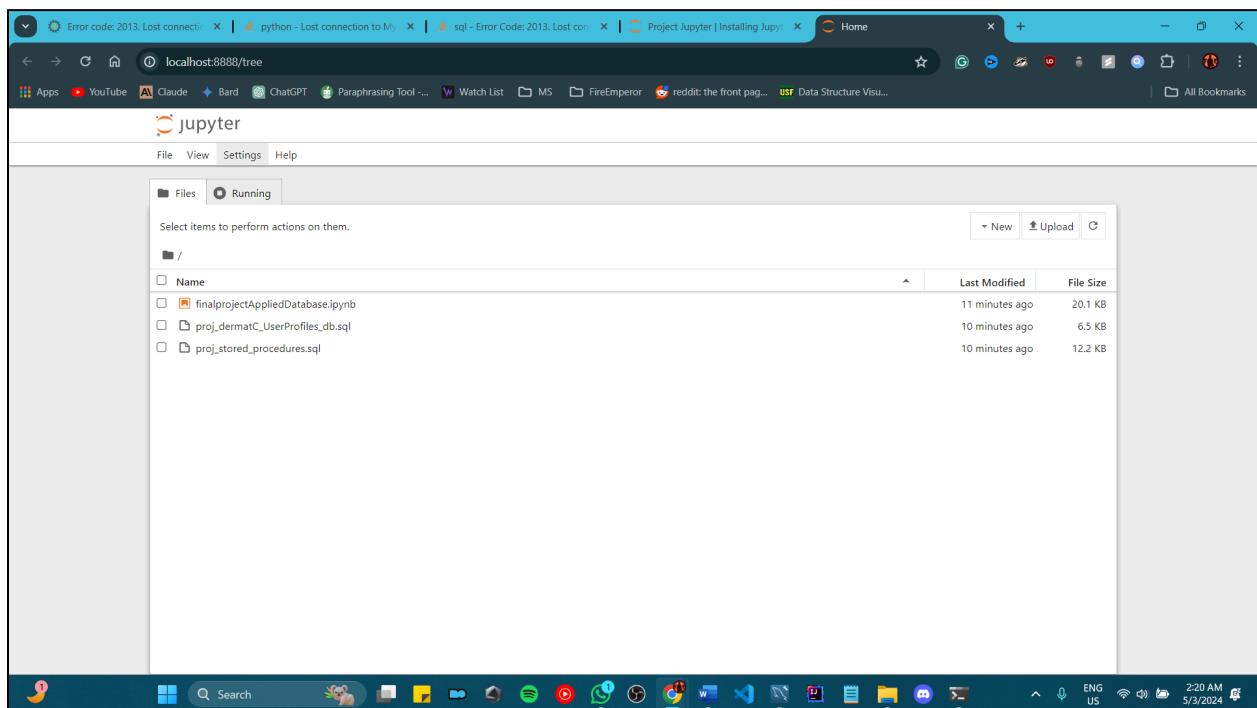
```
Command Prompt - jupyter r x + v
Microsoft Windows [Version 10.0.22631.3527]
(c) Microsoft Corporation. All rights reserved.

C:\Users\firee>cd C:\Users\firee\OneDrive\Desktop\Personal\SEM2\Applied DB\AppliedDB Project\GroupP\ProjectFiles

C:\Users\firee\OneDrive\Desktop\Personal\SEM2\Applied DB\AppliedDB Project\GroupP\ProjectFiles>jupyter notebook
[1 2024-05-03 13:28:00.650 ServerApp] Extension package jupyter_lsp took 0.2211s to import
[1 2024-05-03 13:28:00.786 ServerApp] Extension package jupyter_server_terminals took 0.1301s to import
[1 2024-05-03 13:28:01.323 ServerApp] jupyter_lsp | extension was successfully linked.
[1 2024-05-03 13:28:01.329 ServerApp] jupyter_server_terminals | extension was successfully linked.
[1 2024-05-03 13:28:01.335 ServerApp] jupyterlab | extension was successfully linked.
[1 2024-05-03 13:28:01.343 ServerApp] notebook | extension was successfully linked.
[1 2024-05-03 13:28:02.223 ServerApp] notebook_shim | extension was successfully linked.
[1 2024-05-03 13:28:02.267 ServerApp] notebook_shim | extension was successfully loaded.
[1 2024-05-03 13:28:02.272 ServerApp] jupyter_lsp | extension was successfully loaded.
[1 2024-05-03 13:28:02.278 ServerApp] jupyter_server_terminals | extension was successfully loaded.
[1 2024-05-03 13:28:02.278 LabApp] JupyterLab extension loaded from C:\Users\firee\AppData\Local\Programs\Python\Python311\Lib\site-packages\jupyterlab
[1 2024-05-03 13:28:02.279 LabApp] JupyterLab application directory is C:\Users\firee\AppData\Local\Programs\Python\Python311\share\jupyter\lab
[1 2024-05-03 13:28:02.279 LabApp] Extension Manager is 'pypi'.
[1 2024-05-03 13:28:02.641 ServerApp] jupyterlab | extension was successfully loaded.
[1 2024-05-03 13:28:02.647 ServerApp] notebook | extension was successfully loaded.
[1 2024-05-03 13:28:02.648 ServerApp] Serving notebooks from local directory: C:\Users\firee\OneDrive\Desktop\Personal\SEM2\Applied DB\AppliedDB Project\GroupP\ProjectFiles
[1 2024-05-03 13:28:02.649 ServerApp] Jupyter Server 2.14.0 is running at:
[1 2024-05-03 13:28:02.649 ServerApp] http://localhost:8888/tree?token=122ff6a7f12b09916717ca37da4646027793e6d777c72a9d
[1 2024-05-03 13:28:02.649 ServerApp] http://127.0.0.1:8888/tree?token=122ff6a7f12b09916717ca37da4646027793e6d777c72a9d
[1 2024-05-03 13:28:02.649 ServerApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 2024-05-03 13:28:02.753 ServerApp]

To access the server, open this file in a browser:
file:///C:/Users/firee/AppData/Roaming/jupyter/runtime/jpserver-29920-open.html
Or copy and paste one of these URLs:
http://localhost:8888/tree?token=122ff6a7f12b09916717ca37da4646027793e6d777c72a9d
http://127.0.0.1:8888/tree?token=122ff6a7f12b09916717ca37da4646027793e6d777c72a9d
[1 2024-05-03 13:28:02.753 ServerApp] Skipped non-installed server(s): bash-language-server, dockerfile-language-server-nodejs, javascript-typescript-langse
rver, jedi-language-server, julia-language-server, pyright, python-language-server, python-lsp-server, r-languageserver, sql-language-server, texlab, typesc
ript-language-server, unified-language-server, vscode-css-languageserver-bin, vscode-html-languageserver-bin, vscode-json-languageserver-bin, yaml-language-
server
```

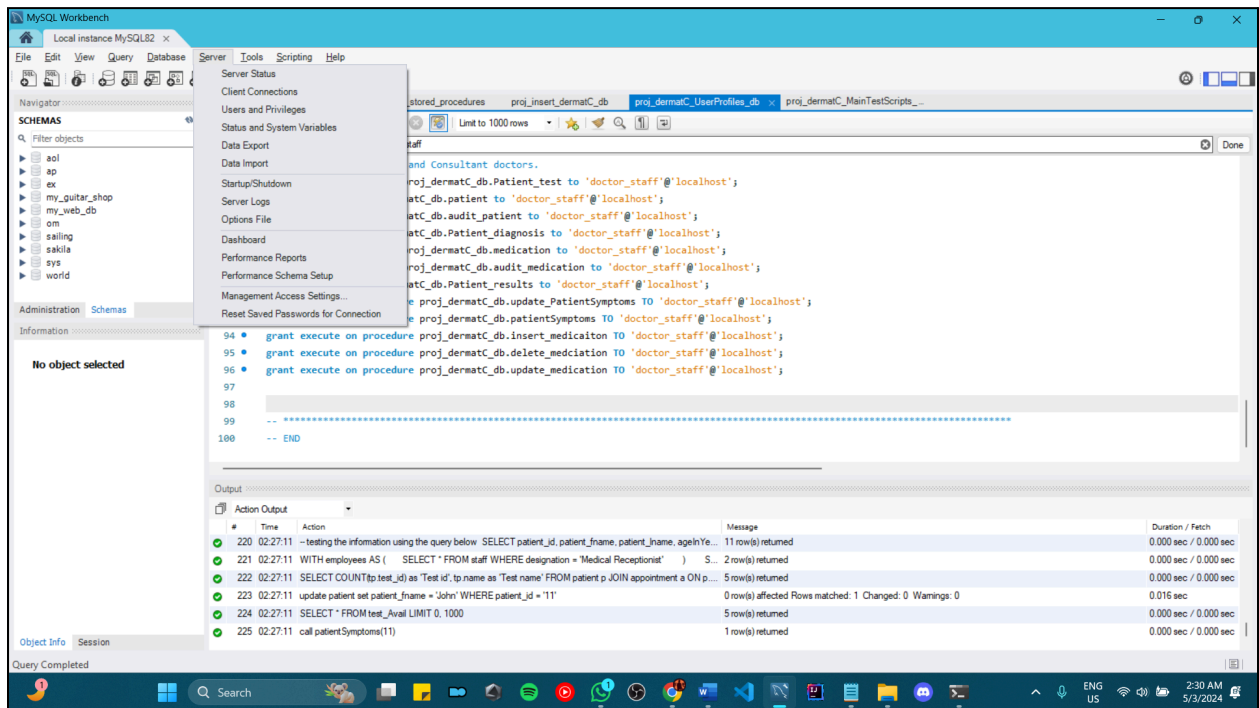
8. Step 7 opens the Jupyter Notebook and you need to open the project file by double-clicking on the 'finalprojectAppliedDatabase.ipynb' file shown below screenshot:



9. Now you have completed the Python programming interface setup, you need to set up the database, follow the below instructions for the same:
- Install the MySQL Workbench using the link- <https://dev.mysql.com/downloads/workbench/>
  - After completing the installation create a MySQL connection  
Refer to the below link:  
<https://dev.mysql.com/doc/workbench/en/wb-getting-started-tutorial-create-connection.html>
  - Open the created MySQL connection >> Connect to the MySQL server providing the password that you used while setting up the MySQL connection >> Click on the 'File' tab >> Click on the 'Open SQL Script...' >> Now locate to the project working directory to open and execute the SQL scripts one by one in a sequence shown below:
    - Run the proj\_dermatC\_db.sql script file for creating the database tables.
    - Run the proj\_Triggers.sql file which contains triggers.
    - Run proj\_stored\_procedures.sql file which contains queries for stored procedures.
    - Run proj\_insert\_dermatC\_db.sql which contains sample data that can be inserted into tables.
    - Run proj\_dermatC\_UserProfiles\_db.sql to create the users and share them among the staff based on their position.
    - Run proj\_dermatC\_MainTestScripts\_db.sql file is used to check the supporting functionality of the database.

**Note:** we have commented on some drop conditions in the file proj\_dermatC\_UserProfiles\_db.sql, as when setting up the database for the first time, we don't have any users in the database. You can uncomment it if the users already exist

- After running the SQL scripts click on the 'Server' tab >> click on the 'Users and Privileges'.

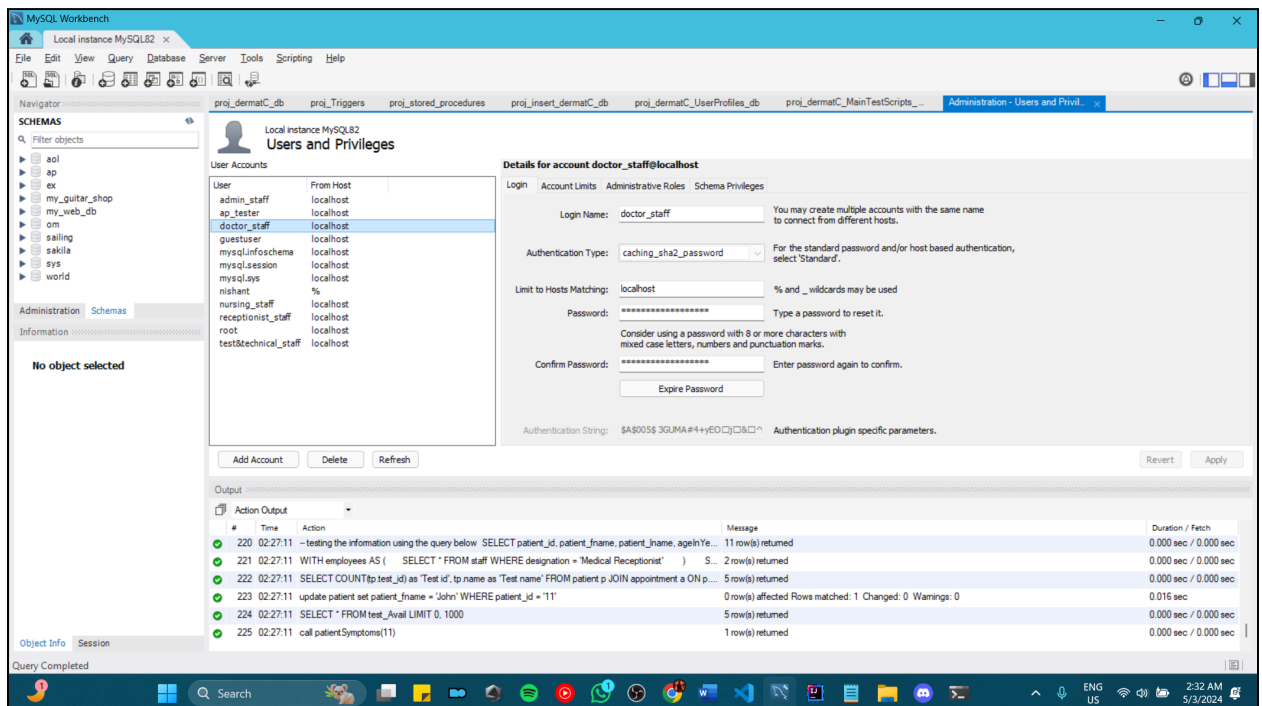


- e. To create all the users and set the privileges, we already executed the proj\_dermatC\_UserProfiles\_db.sql file. Now to set the passwords for the users, connect to the database, then click on 'Server -> Users and Privileges'. Select the user and set the password. (shown in the below screenshot) This step is performed to implement user authentication and user role access management.

In my system, the users and their respective credentials are as follows(refer to an example):

(username/password):

1. admin\_staff/P@ssw0rd@1234
2. test&technical\_staff/Test1234!
3. doctor\_staff/Test1234!
4. receptionist\_staff/Test1234!
5. nursing\_staff/Test1234!



10. Here the database setup(step 9) is completed, now go back to the Jupyter Notebook where you opened the project file in Step 8.
11. Before running the project, In our project, We had several users for our system but we have worked on two user roles and provided users privileges based on their role access, they are as follows:
- a. Admin staff as 'admin\_staff'

The access with the admin\_staff user will be similar to the administrator role which can perform all database-related operations on the database. (we have granted them permission to read, insert, update, delete, OR execute the stored procedure)

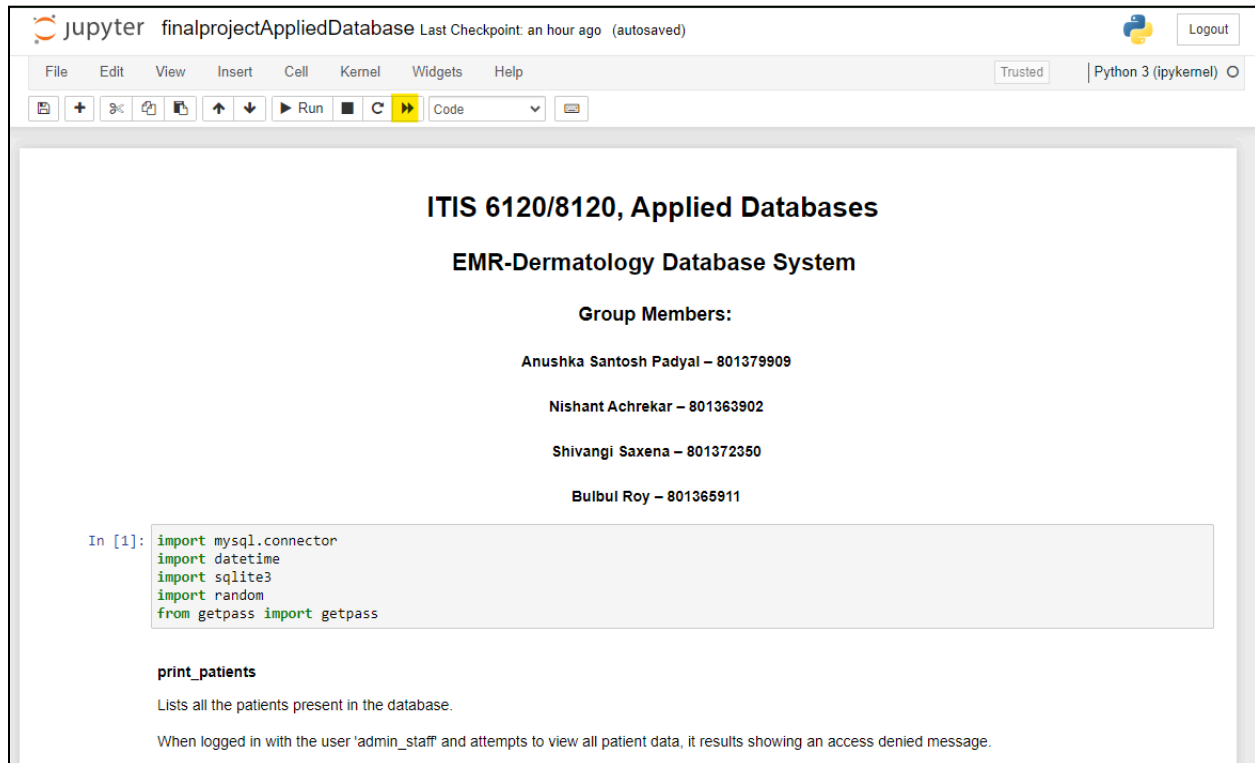
- b. Test & Technical staff as 'test&technical\_staff'

The test&technical\_staff user has limited capabilities in the system. Hence, if we log in with a 'test&technical\_staff' user, we cannot insert, update, delete, or execute any stored procedure in the database system.

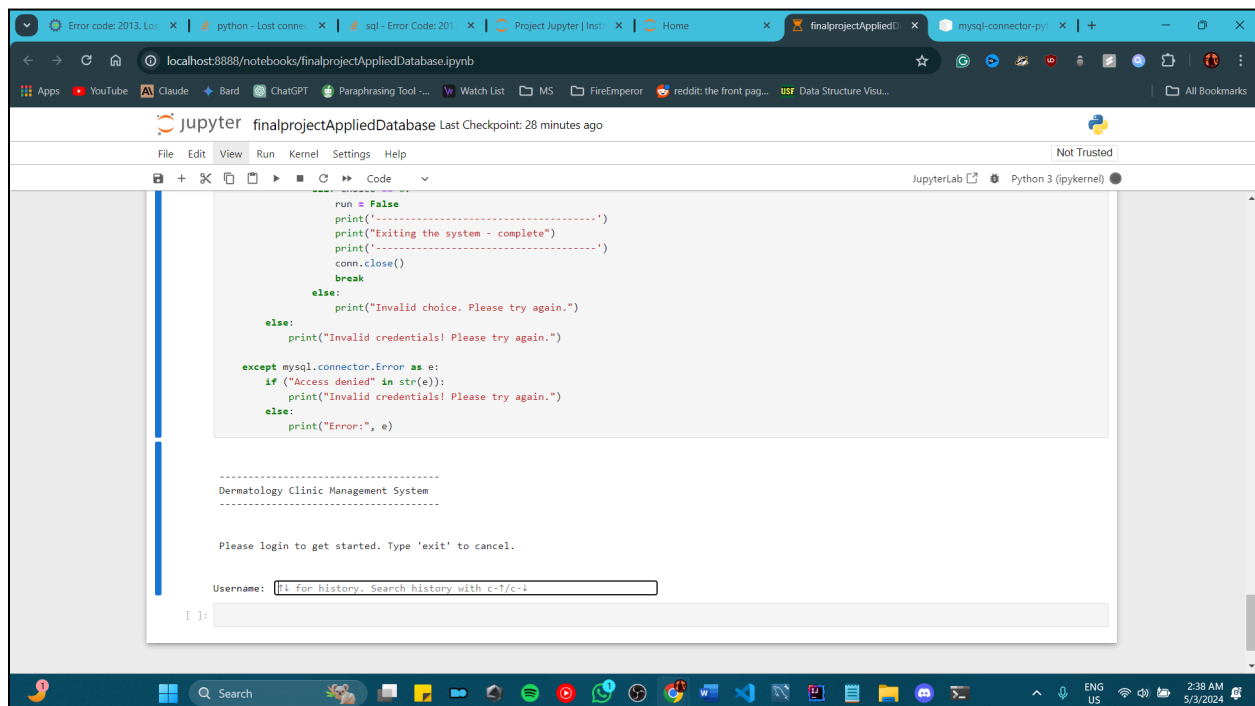


- c. We are giving a call to the 4 stored procedures for performing CRUD operations:
- getAllPatientNames - This stored procedure will fetch all patients' first and last names from the patient table.
  - PatientInsert - This stored procedure inserts a record into the patient table.
  - patientUpdate - This stored procedure will allow the user to update an existing record from the patient table.
  - delete\_patientInfo - Deletes the data record from the patient table using the patient ID.

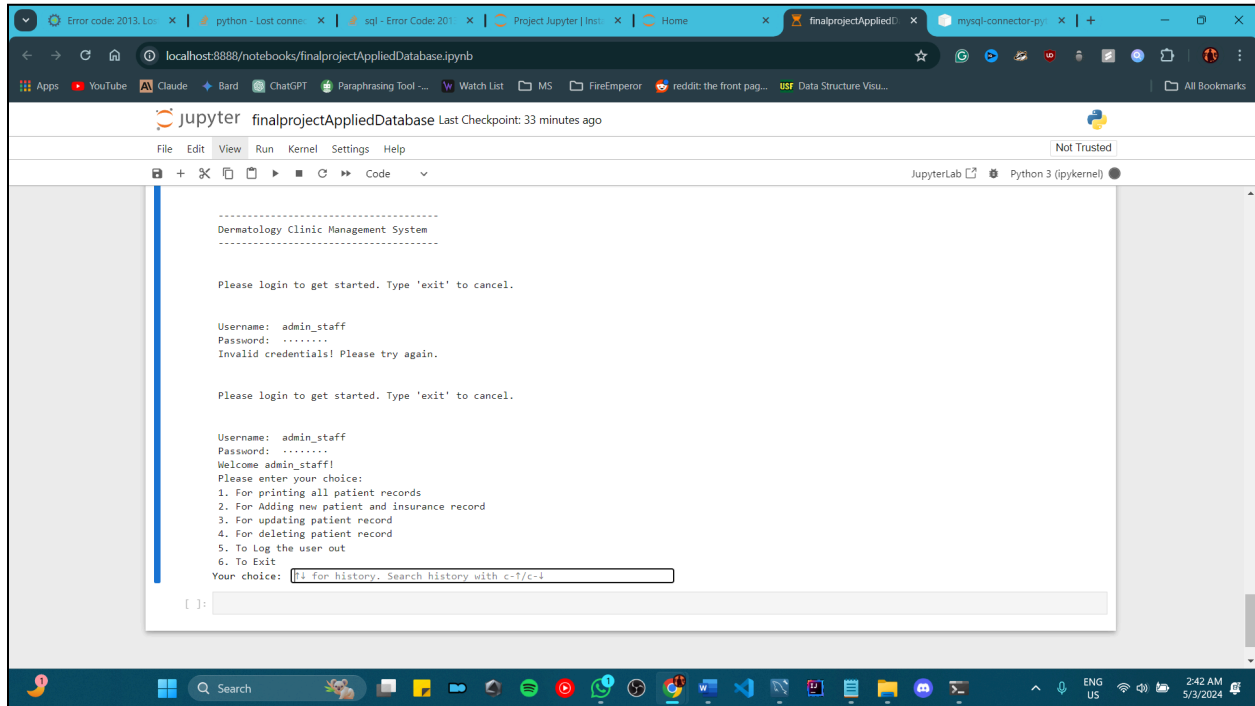
12. Start running the cells by clicking on the icon highlighted below screenshot and follow the instructions in the notebook:



13. Now you are on the homepage of the application and it will ask you for the username and password as shown below:



14. After executing the cells it will ask you to provide a username and password. You will need to enter the username and passwords(for example the username is admin\_staff and the password is P@ssw0rd@1234, you can also refer to step 9. e).



```
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Dermatology Clinic Management System

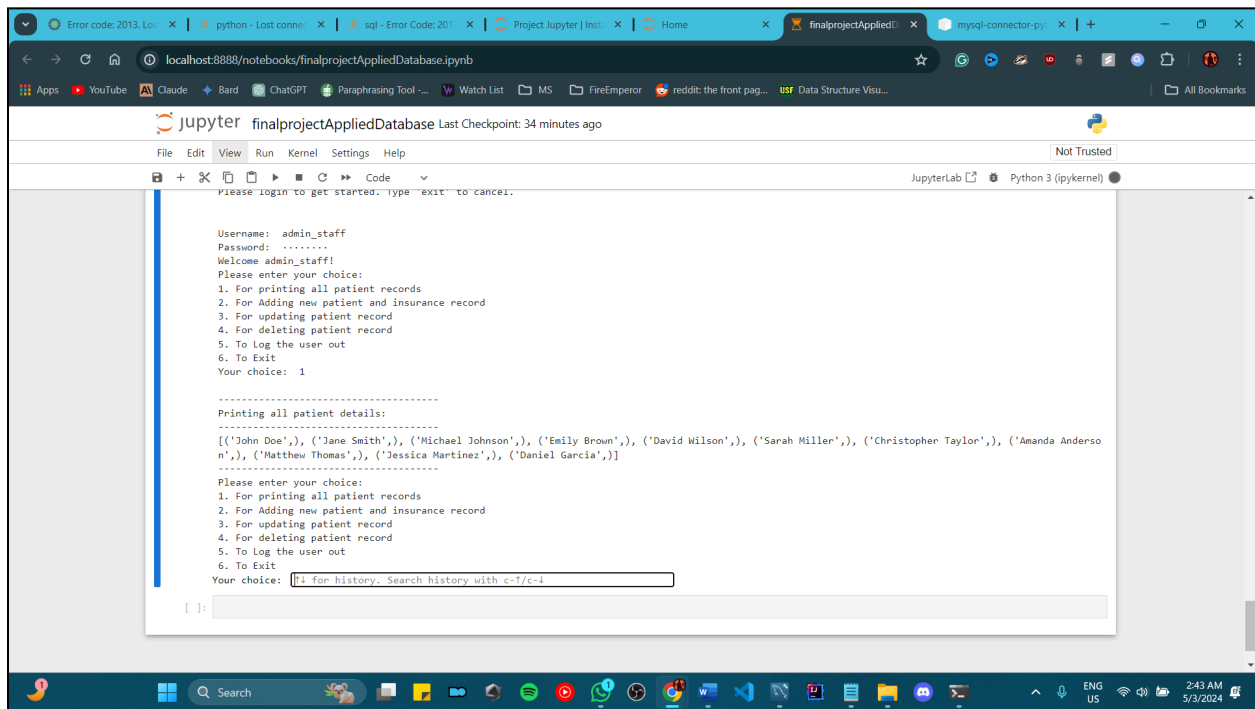
Please login to get started. Type 'exit' to cancel.

Username: admin_staff
Password: .....
Invalid credentials! Please try again.

Please login to get started. Type 'exit' to cancel.

Username: admin_staff
Password: .....
Welcome admin_staff!
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 
```

15. Once you have logged in successfully you will see options available to admin staff user, let us explore them one by one:
- If you type 1 in the 'Your choices' text box it will select the 'For printing all patient records' option and you will be able to view the patient records in the patient table.



```
-----
Dermatology Clinic Management System

Please login to get started. Type 'exit' to cancel.

Username: admin_staff
Password: .....
Welcome admin_staff!
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 1

Printing all patient details:
[('John Doe',), ('Jane Smith',), ('Michael Johnson',), ('Emily Brown',), ('David Wilson',), ('Sarah Miller',), ('Christopher Taylor',), ('Amanda Anderson',), ('Matthew Thomas',), ('Jessica Martinez',), ('Daniel Garcia',)]

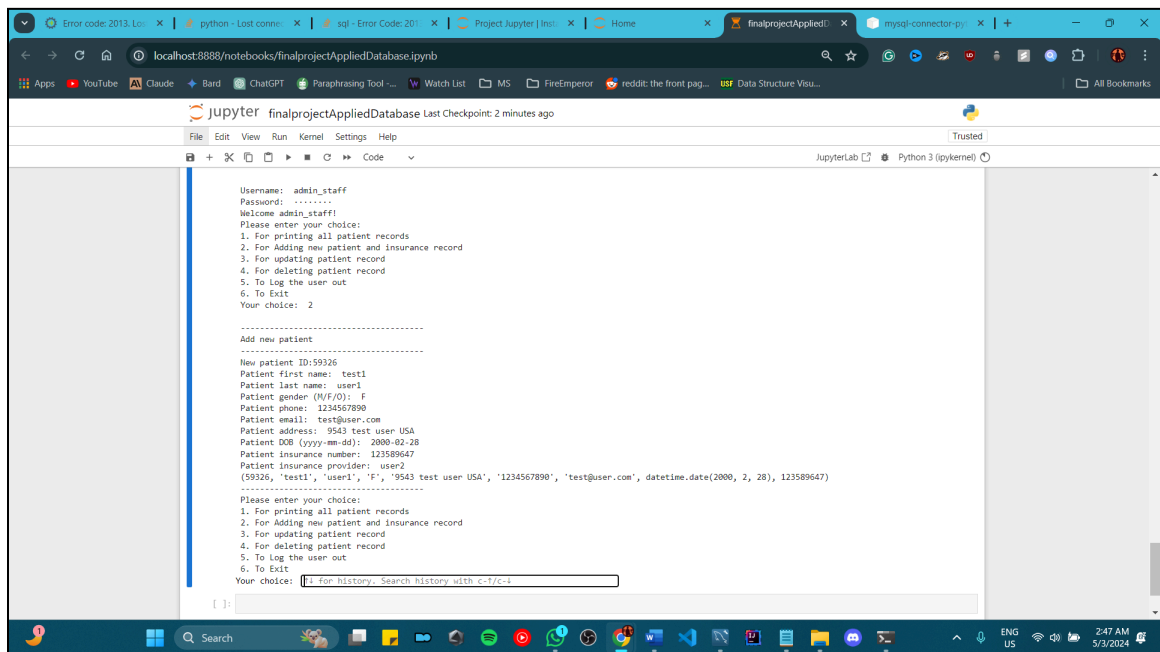
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 
```



- b. Now type 2 in the 'Your choices' text box it will select the 'For Adding new patient and insurance record' option, this will ask you to insert the data record info of patient and insurance details. You can use the dummy data as given below:

fname - John  
lname - Claire  
gender - M  
phoneNum - 9898989898  
email - john@claire.com  
address - 3567 David Taylor Dr NC 23456  
dob - 1999-10-02  
insurance\_id - 90000001  
insurance\_provider - Cigna

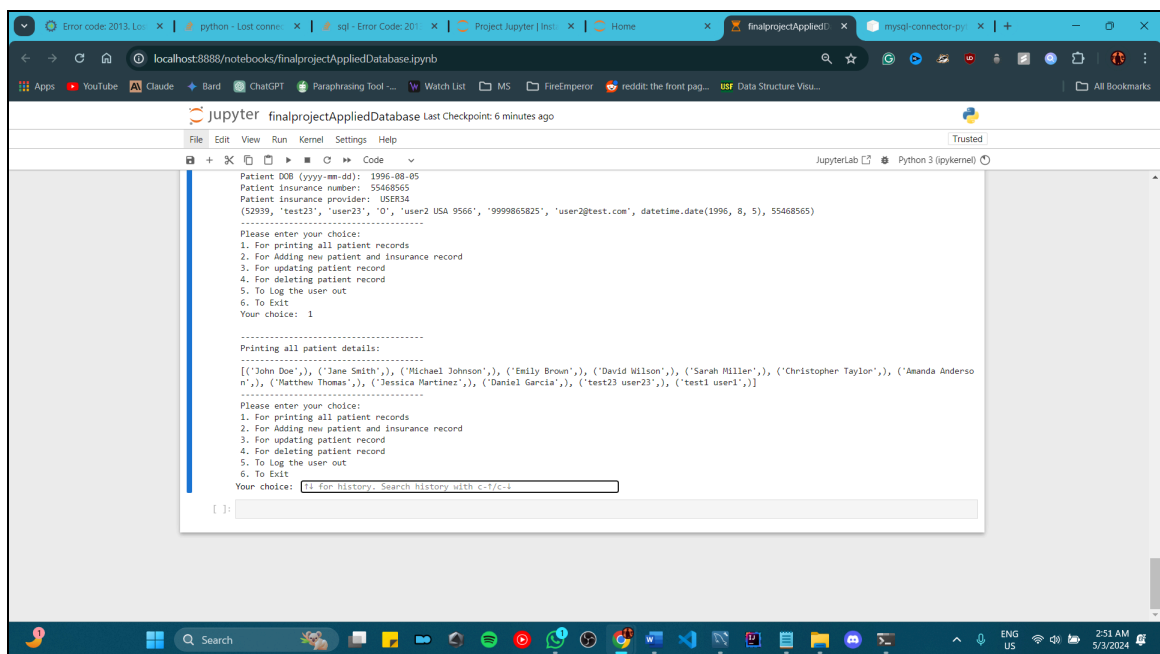
You can also refer to the below screenshots for the same:



```
Username: admin_staff
Password: .....
Welcome admin_staff!
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 2

-----
Add new patient
-----
New patient ID:59326
Patient first name: test1
Patient last name: user1
Patient gender (M/F/O): F
Patient phone: 1234567890
Patient email: test@user.com
Patient address: 9543 test user USA
Patient DOB (yyyy-mm-dd): 2000-02-28
Patient insurance number: 123589647
Patient insurance provider: user2
(59326, 'test1', 'user1', 'F', '9543 test user USA', '1234567890', 'test@user.com', datetime.date(2000, 2, 28), 123589647)

Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 1
```



```
Patient DOB (yyyy-mm-dd): 1996-08-05
Patient insurance number: 55468565
Patient insurance provider: USER34
(52939, 'test23', 'user23', 'O', 'user2 USA 9566', '9999865825', 'user2@test.com', datetime.date(1996, 8, 5), 55468565)

Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 1

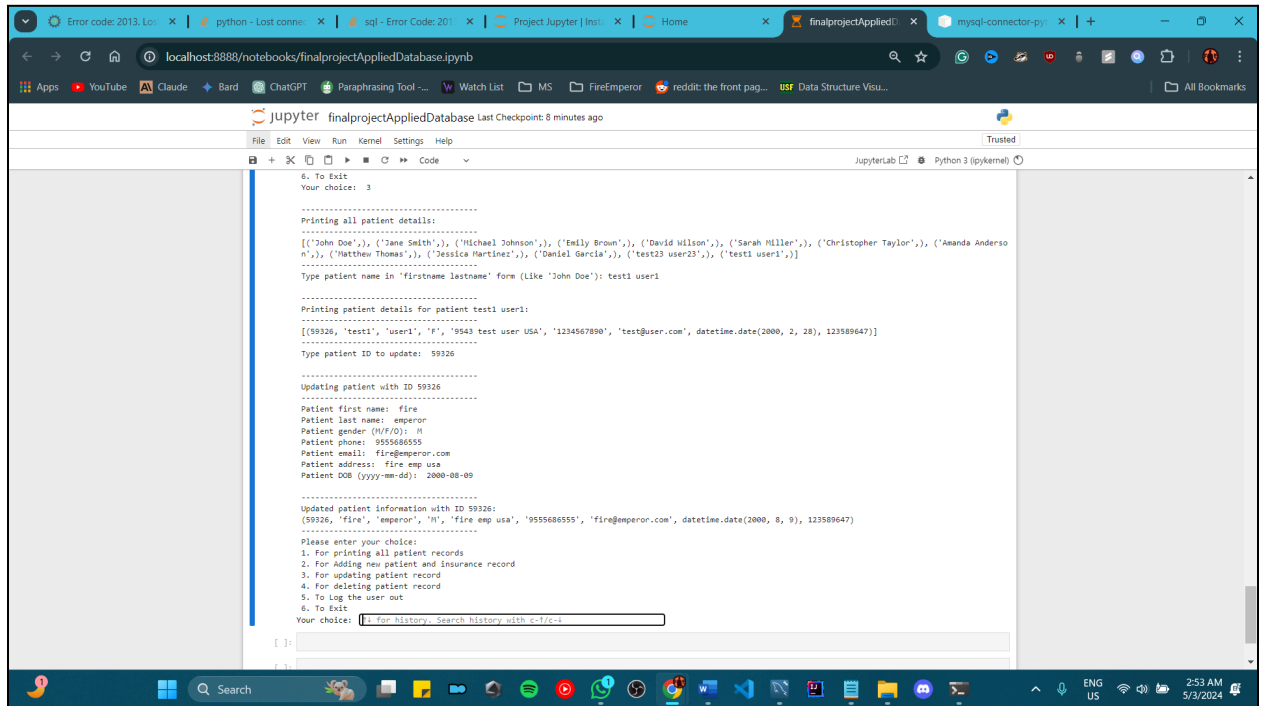
-----
Printing all patient details:
[('John Doe', 'Jane Smith', 'Michael Johnson', 'Emily Brown', 'David Wilson', 'Sarah Miller', 'Christopher Taylor', 'Amanda Anderson'), ('Matthew Thomas', 'Jessica Martinez', 'Daniel Garcia', 'test23 user2', 'test1 user1')]

Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 1
```

- c. Now type 3 in the 'Your choices' text box it will select the 'For updating patient record' option, which will ask you to update an existing record of a patient. It will query into the database for all the patients with the provided name and return a list of all the patients matching that name, then we provide the input as patient Id which we want to update. You can use the dummy data as given below:

fname - Dave  
lname - Shwiff  
gender - M  
phoneNum = 8888888888  
email = daveshwiff@dummy.com  
address = 777 Broken Ln CA 28222  
dob = 1996-12-01

You can also refer to the below screenshot for the same



```
6. To Exit
Your choice: 3

-----
Printing all patient details:
-----
[('John Doe'), ('Jane Smith'), ('Michael Johnson'), ('Emily Brown'), ('David Wilson'), ('Sarah Miller'), ('Christopher Taylor'), ('Amanda Anderson'), ('Matthew Thomas'), ('Jessica Martinez'), ('Daniel Garcia'), ('test23 user23'), ('test1 user1')]
Type patient name in "Firstname Lastname" form (Like 'John Doe'): test1 user1

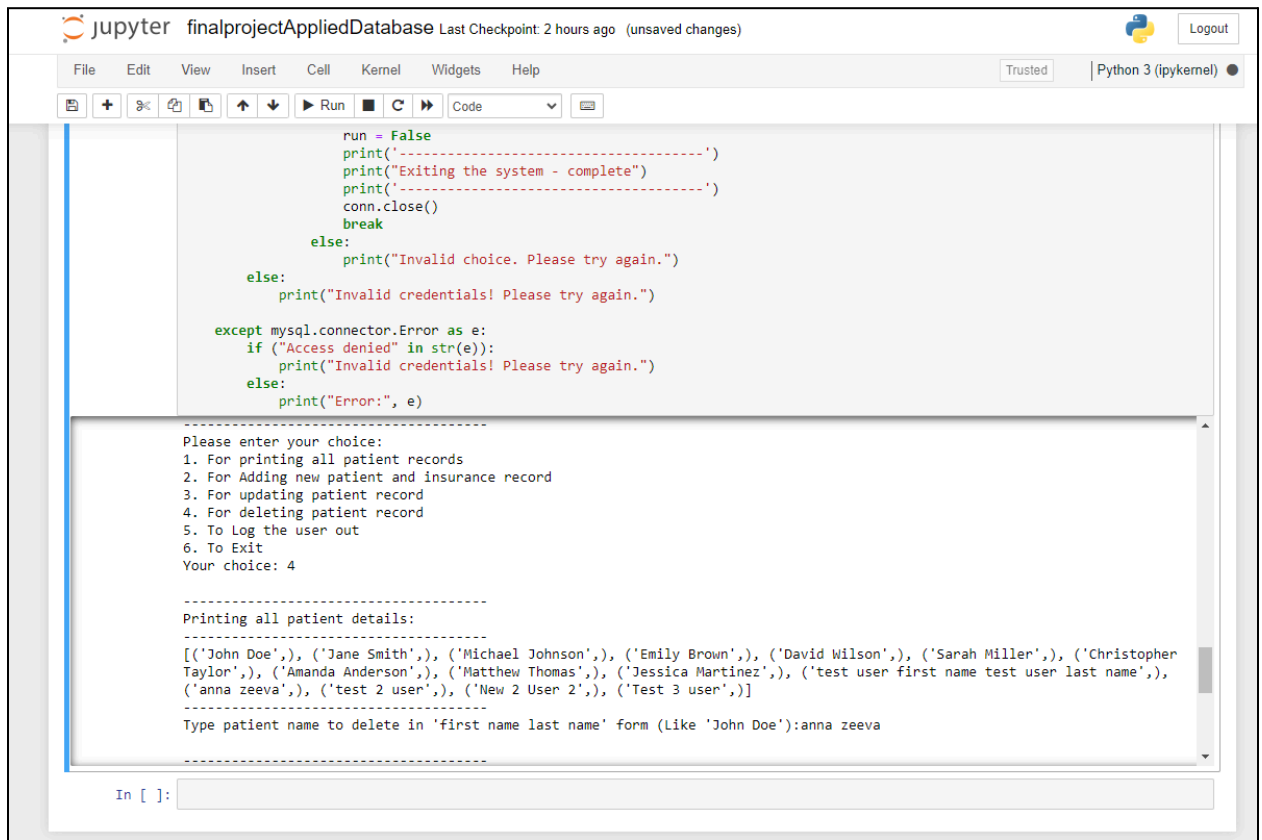
-----
Printing patient details for patient test1 user1:
-----
[(59326, 'test1', 'user1', 'F', '9543 test user USA', '1234567890', 'test@user.com', datetime.date(2000, 2, 28), 123589647)]
Type patient ID to update: 59326

-----
Updating patient with ID 59326
-----
Patient first name: fire
Patient last name: emperor
Patient gender (M/F/O): M
Patient phone: 9555686555
Patient email: fire@emperor.com
Patient address: fire emp usa
Patient DOB (yyyy-mm-dd): 2000-08-09

-----
Updated patient information with ID 59326:
(59326, 'fire', 'emperor', 'M', 'fire emp usa', '9555686555', 'fire@emperor.com', datetime.date(2000, 8, 9), 123589647)
Please enter your choice:
1. For printing all patient records
2. For adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 3 for history. Search history with c-f/c-l
```

- d. Now type 4 in the 'Your choices' text box it will select the 'For deleting patient record' option, it will show you all the patients present in the system and will ask you to enter an existing record of a patient. It will query into the database for all the patients with the provided name and return a list of all the patients matching that name, then we will give the input as patient ID which we want to delete.

Screenshot 1



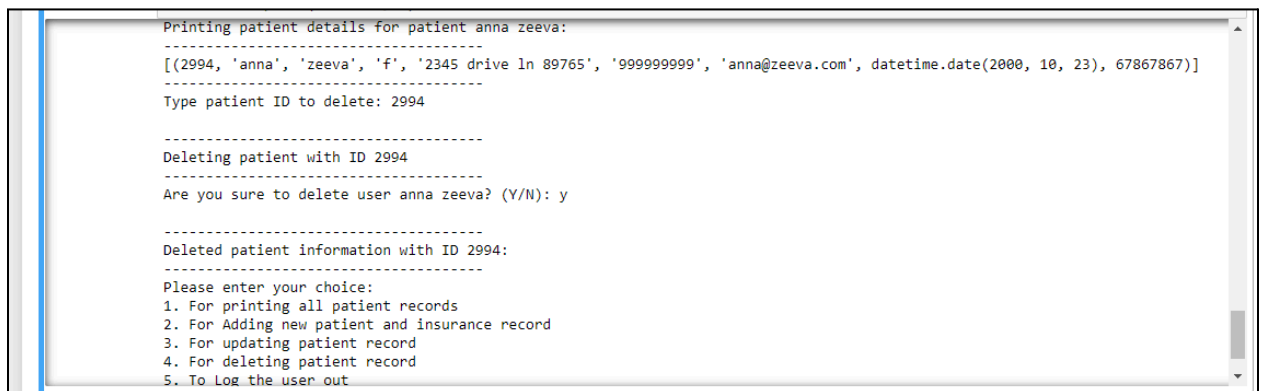
The screenshot shows a Jupyter Notebook window titled 'finalprojectAppliedDatabase'. The code cell contains a Python script that interacts with a MySQL database. The output cell shows the program's execution, including a menu of options, the selection of option 4 (delete patient record), a list of all patients, and a prompt to enter a patient name for deletion. The user has entered 'anna zeeva'.

```
run = False
print('-----')
print("Exiting the system - complete")
print('-----')
conn.close()
break
else:
    print("Invalid choice. Please try again.")
else:
    print("Invalid credentials! Please try again.")
except mysql.connector.Error as e:
    if ("Access denied" in str(e)):
        print("Invalid credentials! Please try again.")
    else:
        print("Error:", e)
```

Please enter your choice:  
1. For printing all patient records  
2. For Adding new patient and insurance record  
3. For updating patient record  
4. For deleting patient record  
5. To Log the user out  
6. To Exit  
Your choice: 4

-----  
Printing all patient details:  
-----  
[('John Doe',), ('Jane Smith',), ('Michael Johnson',), ('Emily Brown',), ('David Wilson',), ('Sarah Miller',), ('Christopher Taylor',), ('Amanda Anderson',), ('Matthew Thomas',), ('Jessica Martinez',), ('test user first name test user last name',), ('anna zeeva',), ('test 2 user',), ('New 2 User 2',), ('Test 3 user',)]  
-----  
Type patient name to delete in 'first name last name' form (Like 'John Doe'):anna zeeva

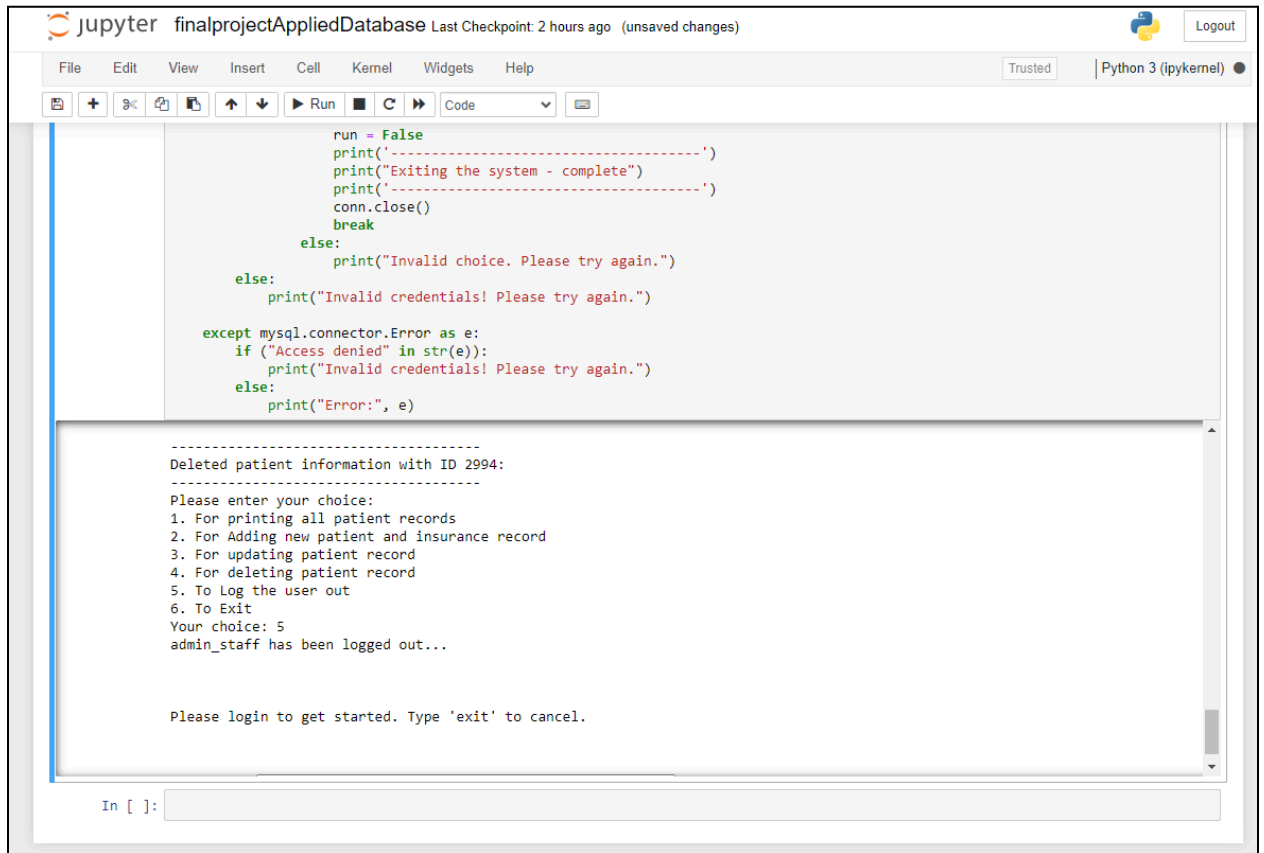
Screenshot 2



This screenshot shows the continuation of the program's output. It displays the details for the patient 'anna zeeva', including their ID (2994), name, address, email, and date of birth. It then prompts the user to enter the patient ID to delete, which is 2994. The program asks for confirmation to delete the user, and the user responds with 'y'. Finally, it shows the deleted patient information and returns to the main menu.

```
Printing patient details for patient anna zeeva:
[('2994', 'anna', 'zeeva', 'f', '2345 drive ln 89765', '999999999', 'anna@zeeva.com', datetime.date(2000, 10, 23), 67867867)]
Type patient ID to delete: 2994
Deleting patient with ID 2994
Are you sure to delete user anna zeeva? (Y/N): y
Deleted patient information with ID 2994:
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
```

- e. Now type 5 in the 'Your choices' text box it will select the 'To Log the user out' option, it will log out the admin\_staff user and ask you to log in again. (Refer to the below screenshot)



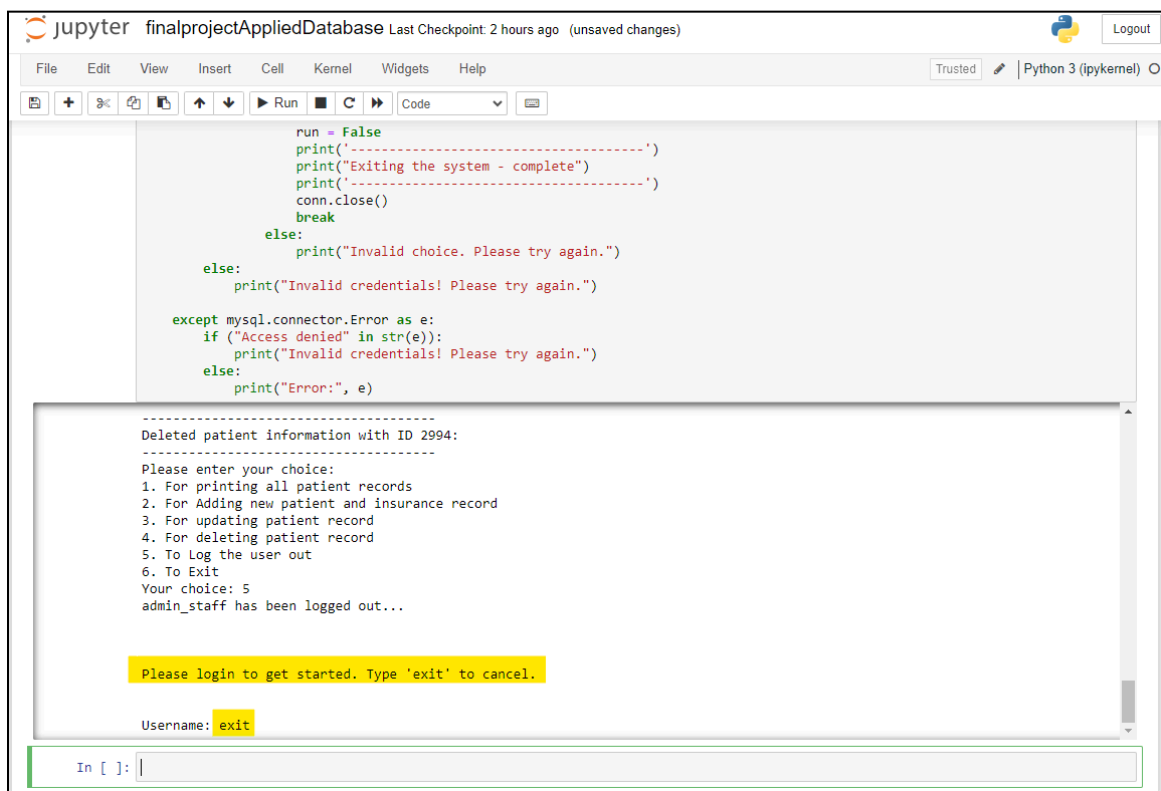
```
run = False
print('-----')
print("Exiting the system - complete")
print('-----')
conn.close()
break
else:
    print("Invalid choice. Please try again.")
else:
    print("Invalid credentials! Please try again.")
except mysql.connector.Error as e:
    if ("Access denied" in str(e)):
        print("Invalid credentials! Please try again.")
    else:
        print("Error:", e)
```

```
-----
Deleted patient information with ID 2994:
-----
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 5
admin_staff has been logged out...

Please login to get started. Type 'exit' to cancel.
```

In [ ]:

- f. Now type 6 in the 'Your choices' text box it will select the 'To Exit' option, and it will exit you from the programming cell. (Refer to the below screenshot)



```
run = False
print('-----')
print("Exiting the system - complete")
print('-----')
conn.close()
break
else:
    print("Invalid choice. Please try again.")
else:
    print("Invalid credentials! Please try again.")
except mysql.connector.Error as e:
    if ("Access denied" in str(e)):
        print("Invalid credentials! Please try again.")
    else:
        print("Error:", e)
```

```
-----
Deleted patient information with ID 2994:
-----
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 5
admin_staff has been logged out...

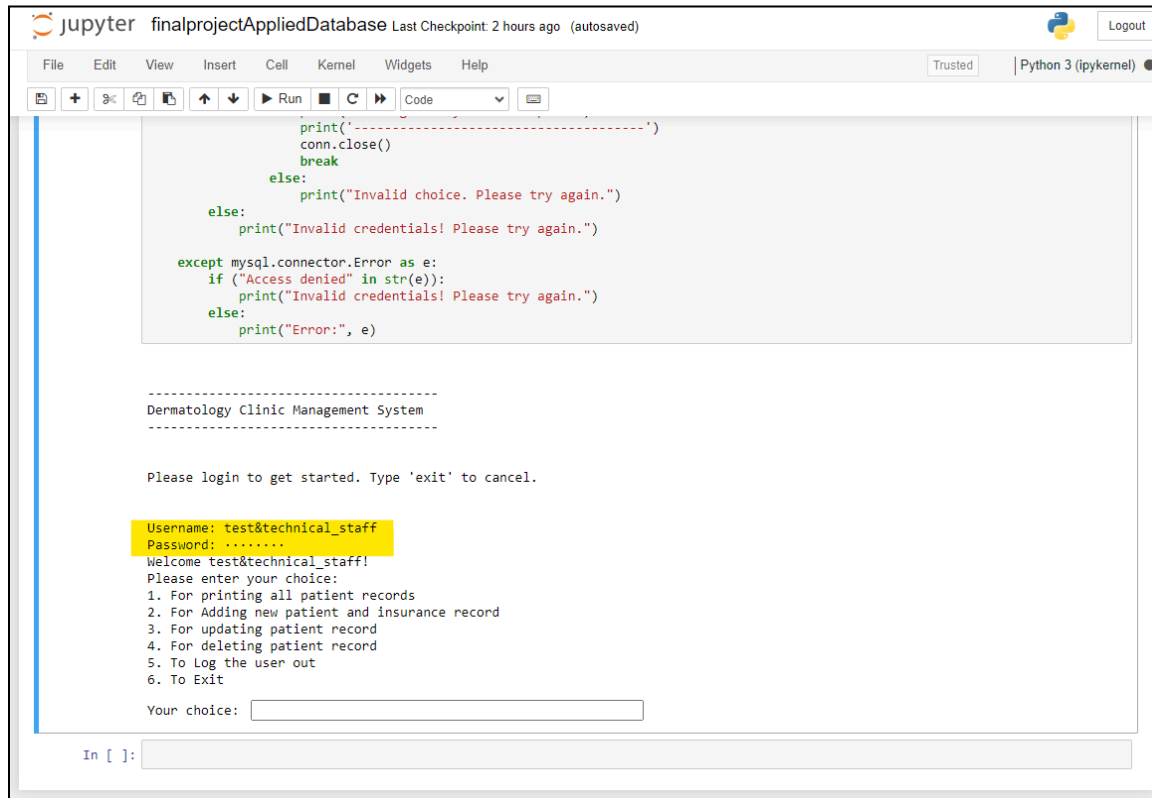
Please login to get started. Type 'exit' to cancel.
```

Username: exit

In [ ]:

We have completed the user role access control for admin staff users. Now let us proceed with test&technical\_staff user role access control. Follow the below steps:

1. For test&technical follow the same setup steps (from steps 11 & 12) and start the application.
2. Select a choice from the home page of the application



```
print('-----')
conn.close()
break
else:
    print("Invalid choice. Please try again.")
else:
    print("Invalid credentials! Please try again.")
except mysql.connector.Error as e:
    if ("Access denied" in str(e)):
        print("Invalid credentials! Please try again.")
    else:
        print("Error:", e)

-----

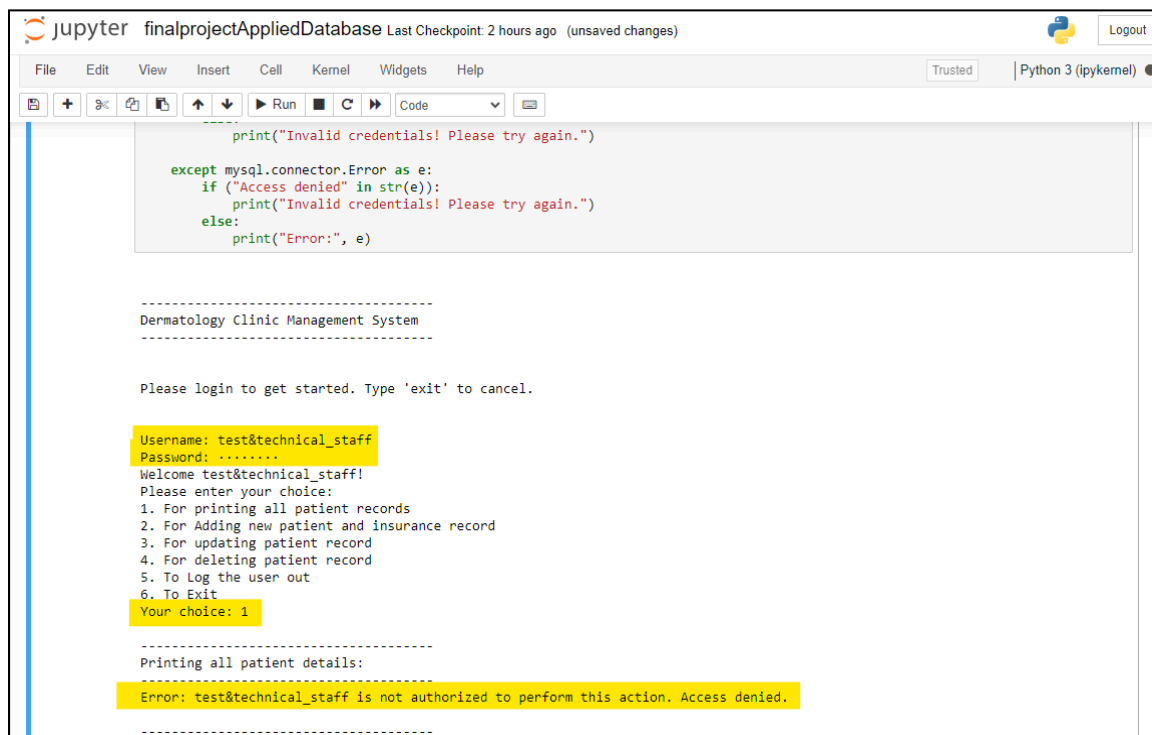
Dermatology Clinic Management System
-----

Please login to get started. Type 'exit' to cancel.

Username: test&technical_staff
Password: .....
Welcome test&technical_staff!
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit

Your choice: 
```

3. Now type 1 in the 'Your choices' text box it will select the 'For printing all patient records' option as test&technical\_staff cannot view the patient records the access for test&technical\_staff user will be denied. (Refer to the below screenshot)



```
print("Invalid credentials! Please try again.")
except mysql.connector.Error as e:
    if ("Access denied" in str(e)):
        print("Invalid credentials! Please try again.")
    else:
        print("Error:", e)

-----

Dermatology Clinic Management System
-----

Please login to get started. Type 'exit' to cancel.

Username: test&technical_staff
Password: .....
Welcome test&technical_staff!
Please enter your choice:
1. For printing all patient records
2. For Adding new patient and insurance record
3. For updating patient record
4. For deleting patient record
5. To Log the user out
6. To Exit
Your choice: 1

-----

Printing all patient details:
Error: test&technical_staff is not authorized to perform this action. Access denied.
-----
```