Department of Software and Information Systems, University of North Carolina Charlotte

ITIS 6120/8120: Applied Databases(Spring 2024)

Instructor: Prof. Albert Park

User Manual: Instructions to setup for running the project

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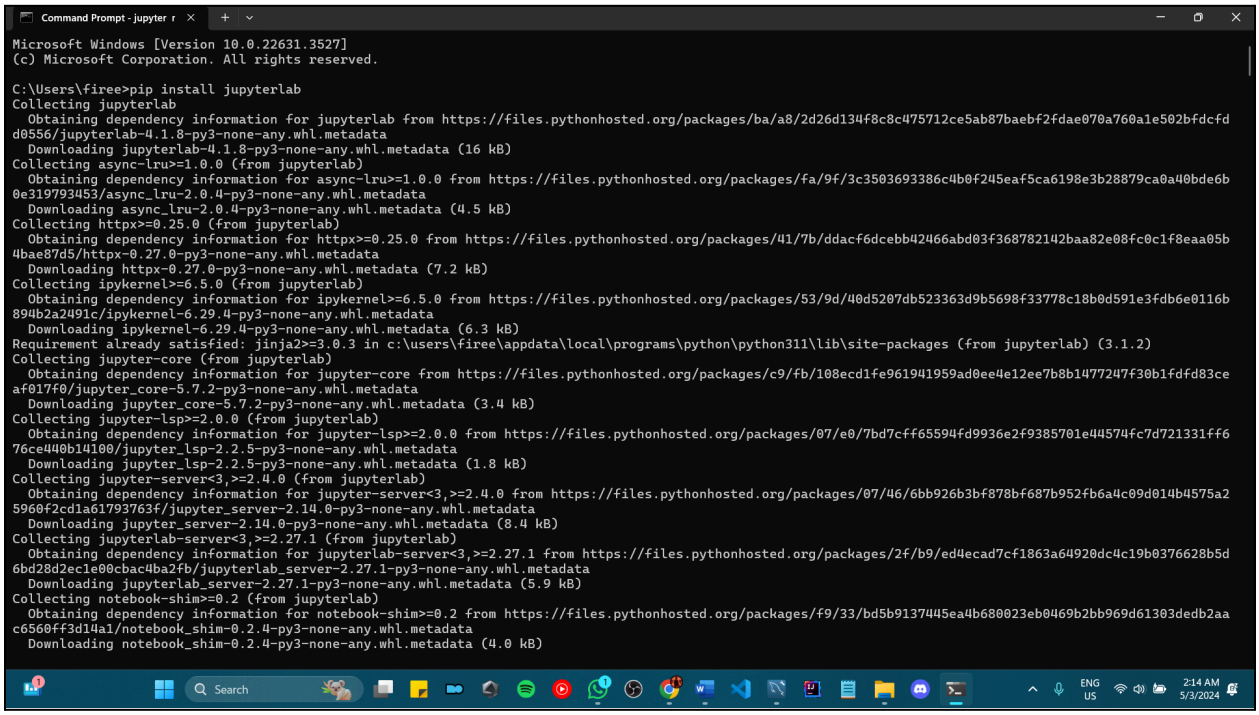
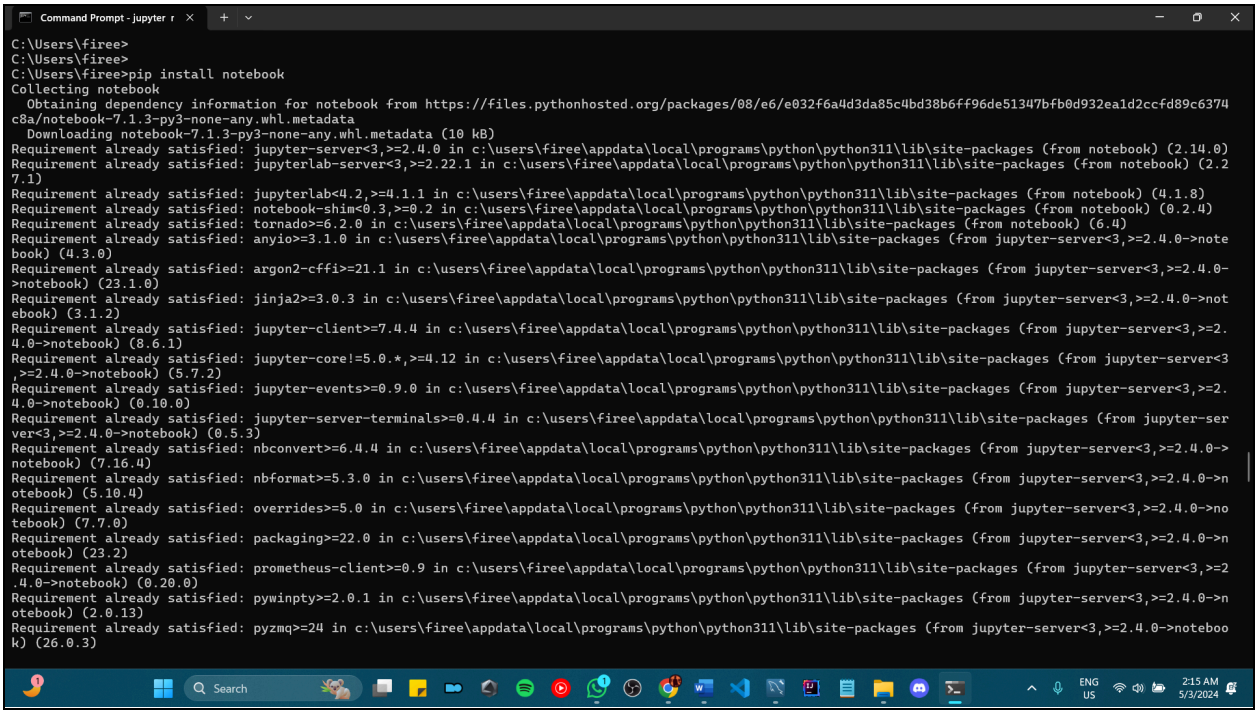
1. In the project, we used Python programming language and wrote the code in the Jupyter Notebook, to run the project you will need to install the Jupyter Notebook using the link: https://jupyter.org/install
2. After installing Jupyter Notebook, open the command prompt(run as administration) and type 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/)

   `pip install jupyterlab`



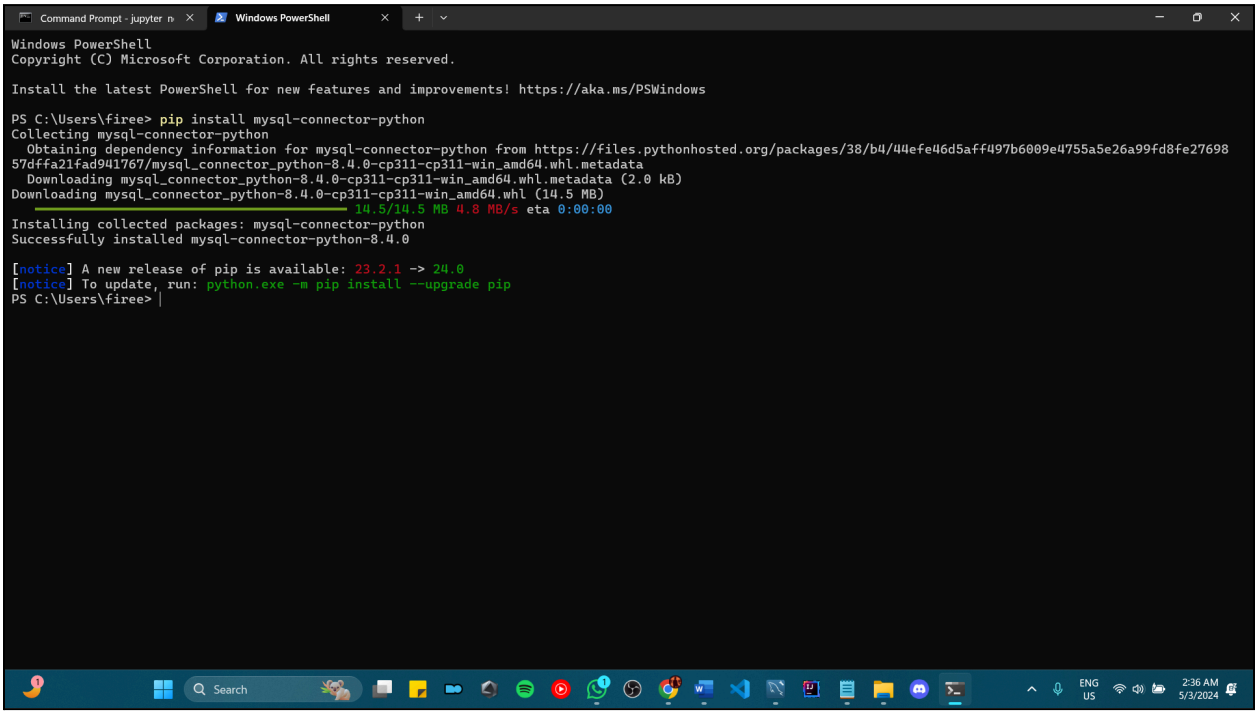
3. Next, type another command to install the Jupyter Notebook as shown below:

   `pip install notebook`



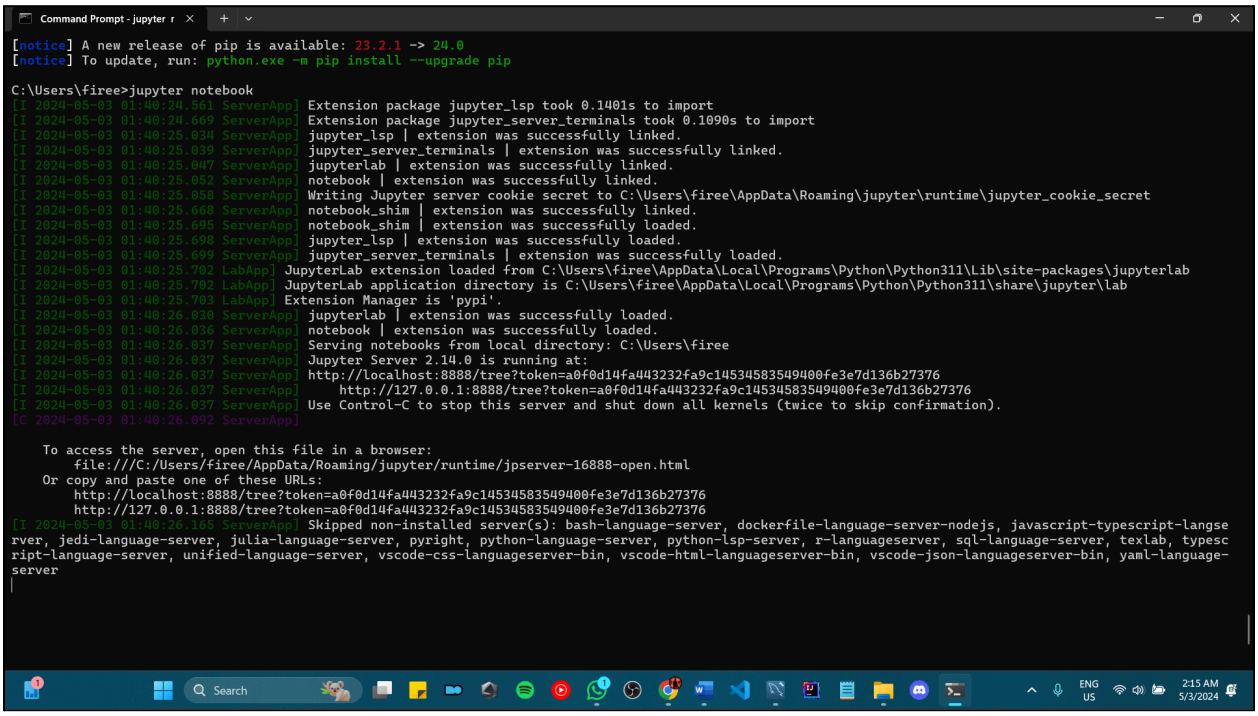
4. We need to establish a database connectivity with our programming interface so once you have installed the notebook, install ‘MySql connector’ by using the below command:

   `pip install mysql-connector-python`

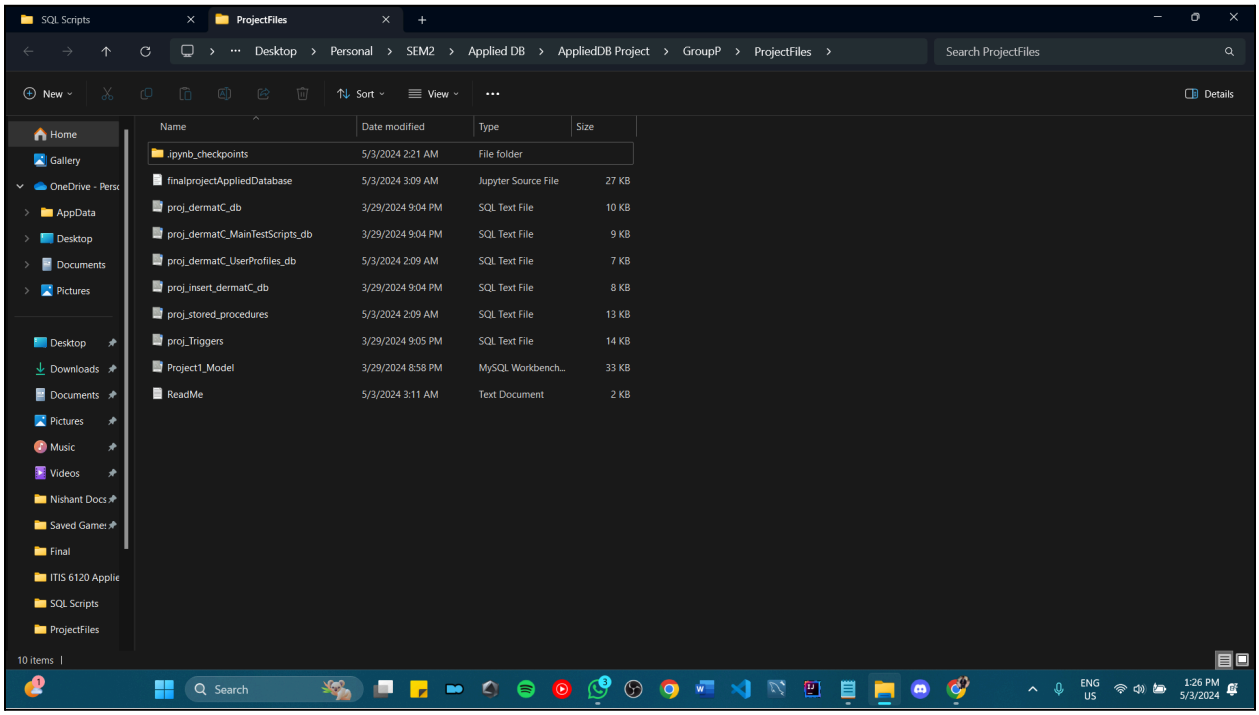


5. Now to open the Jupyter Notebook type the command in the command prompt as given below:

```
jupyter notebook
```



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.

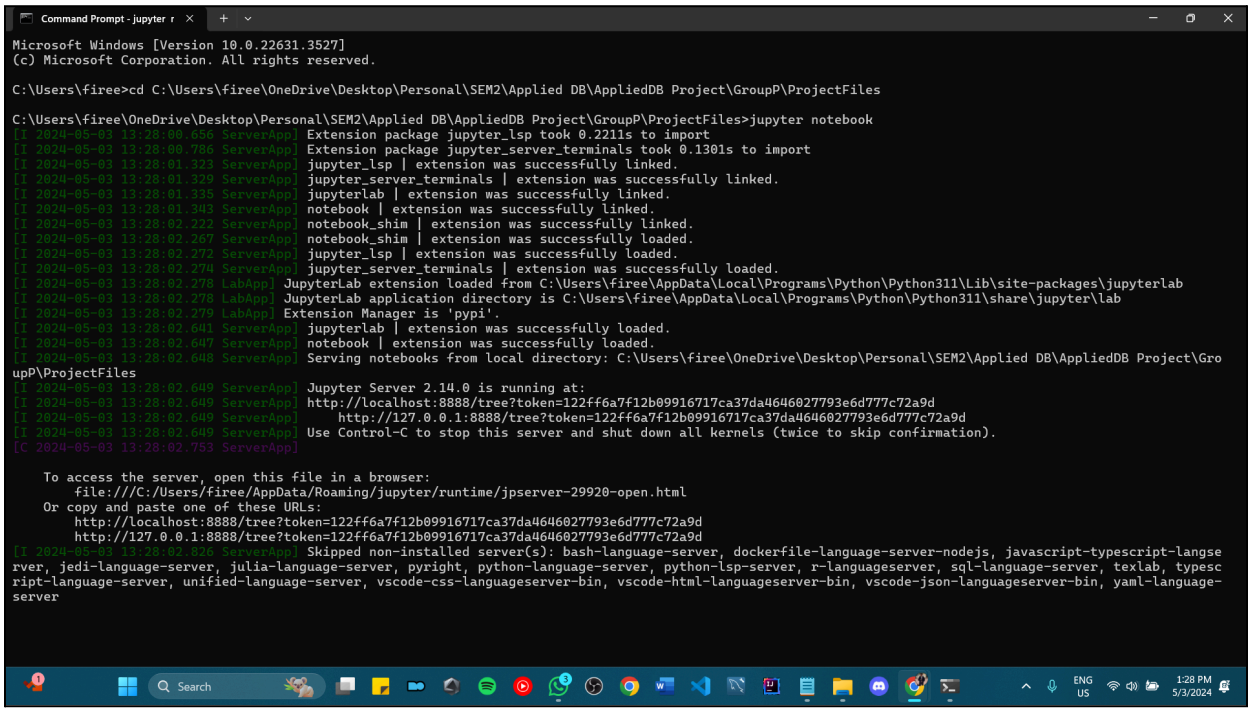


7. Based on the screenshot in step 6 the working directory path will be:

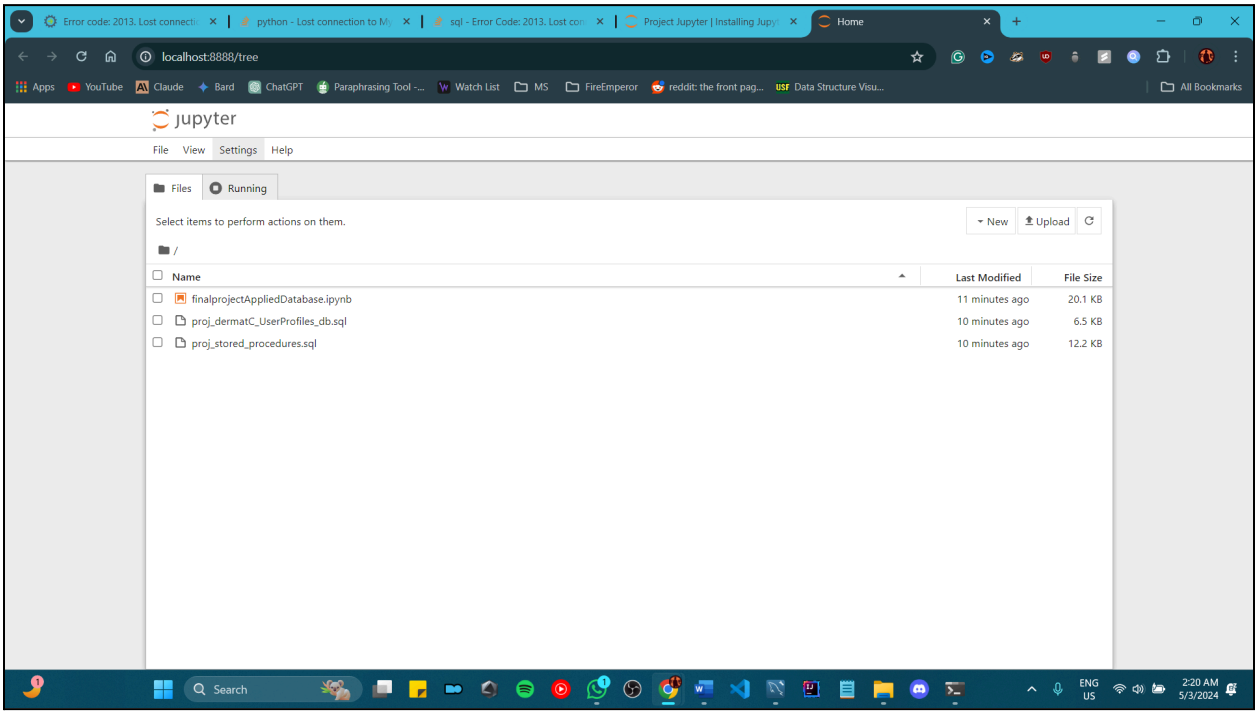
   `C:\Users\firee\OneDrive\Desktop\Personal\SEM2\Applied DB\AppliedDB Project\GroupP\ProjectFiles`

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

   `jupyter notebook`



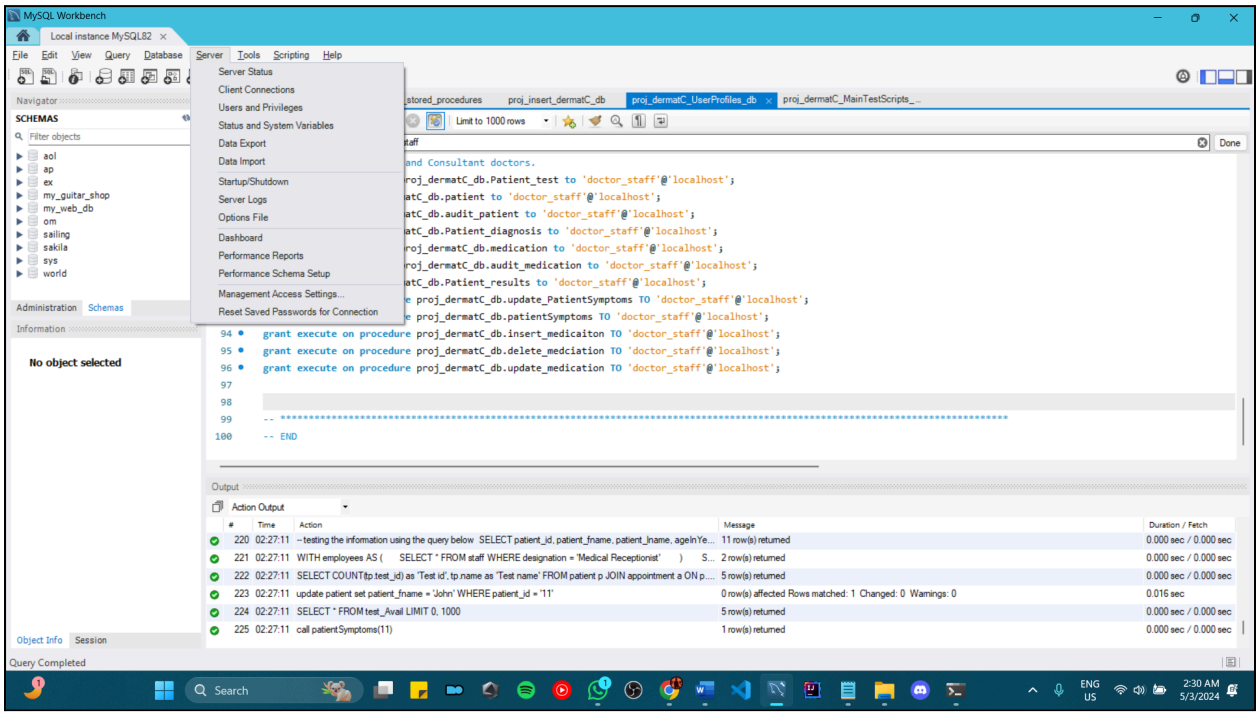
8. Step 7 opens the Jupyter Notebook and you need to open the project file by double-clicking on the ‘finalprojectAppliedDatabase.ipynb’ file shown below screenshot:



9. Now you have completed the Python programming interface setup, you need to set up the database, follow the below instructions for the same:
    a. Install the MySQL Workbench using the link- https://dev.mysql.com/downloads/workbench/
    b. 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
    c. 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:
        i. Run the proj_dermatC_db.sql script file for creating the database tables.
        ii. Run the proj_Triggers.sql file which contains triggers.
        iii. Run proj_stored_procedures.sql file which contains queries for stored procedures.
        iv. Run proj_insert_dermatC_db.sql which contains sample data that can be inserted into tables.
        v. Run proj_dermatC_UserProfiles_db.sql to create the users and share them among the staff based on their position.
        vi. 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

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

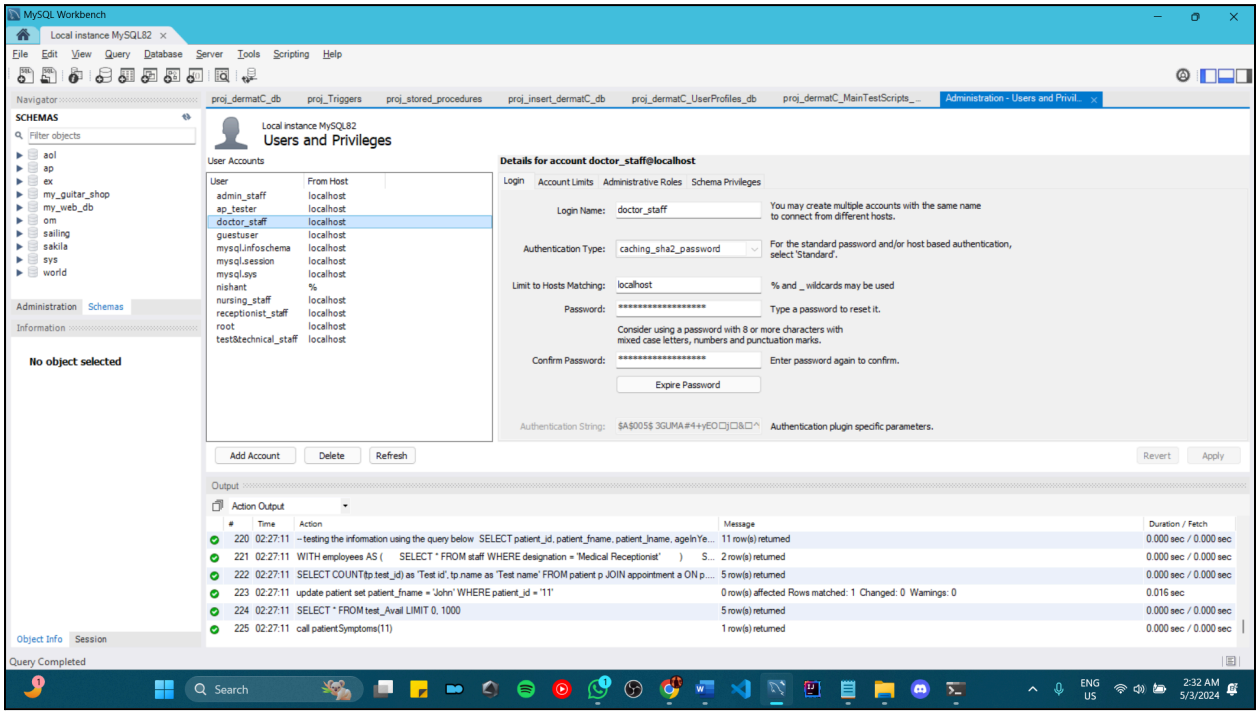


e. To create all the users and set the privileges, we already executed the proj_dermatC_UserProfiles_db.sql file. Now to set the passwords for the users, connect to the database, then click on 'Server -> Users and Privileges'. Select the user and set the password. (shown in the below screenshot) This 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'

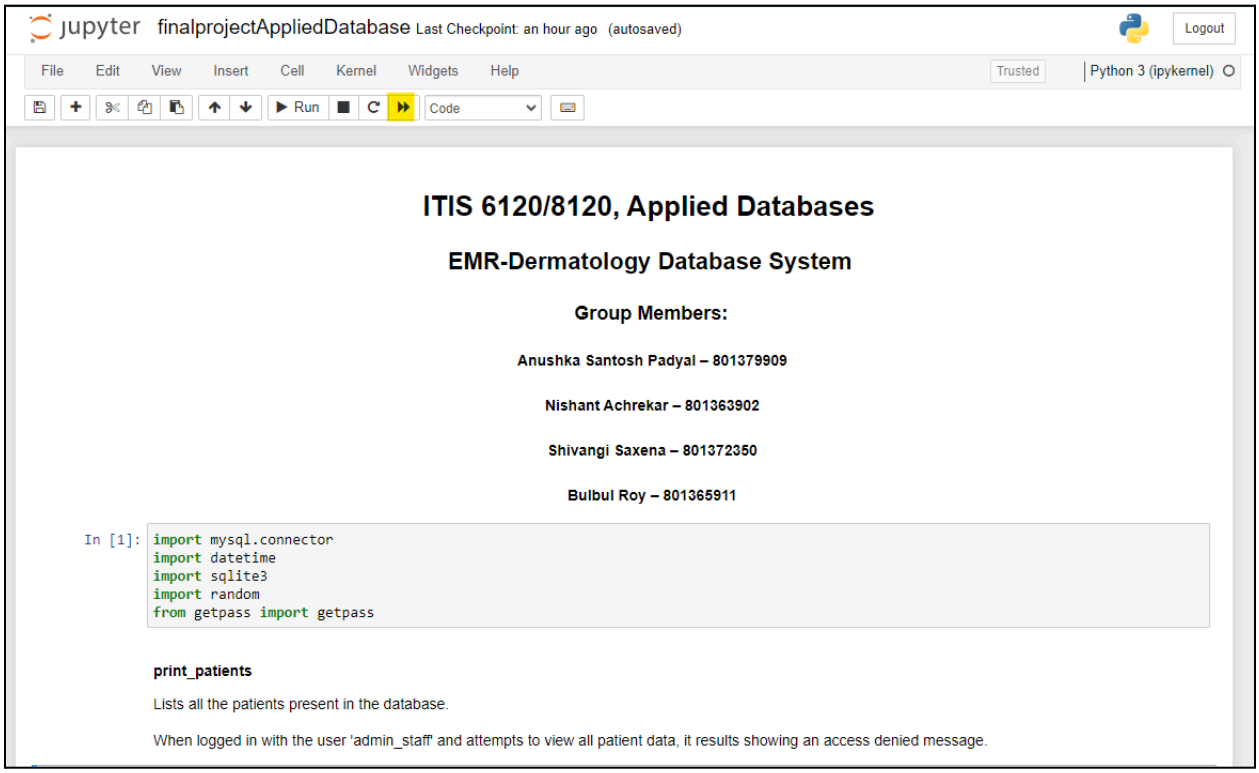
       The access with the admin_staff user will be similar to the administrator role which can perform all database-related operations on the database. (we have granted them permission to read, insert, update, delete, OR execute the stored procedure)

    b. Test & Technical staff as 'test&technical_staff'

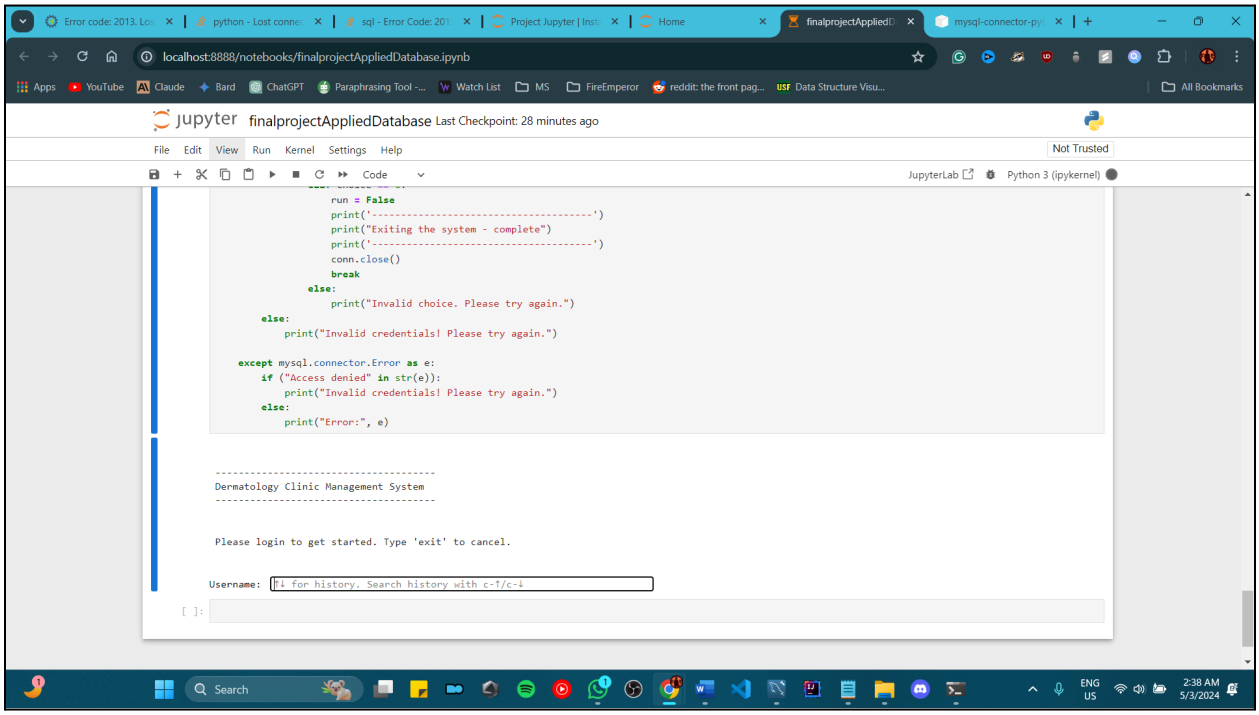
       The test&technical_staff user has limited capabilities in the system. Hence, if we log in with a 'test&technical_staff' user, we cannot insert, update, delete, or execute any stored procedure in the database system.

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

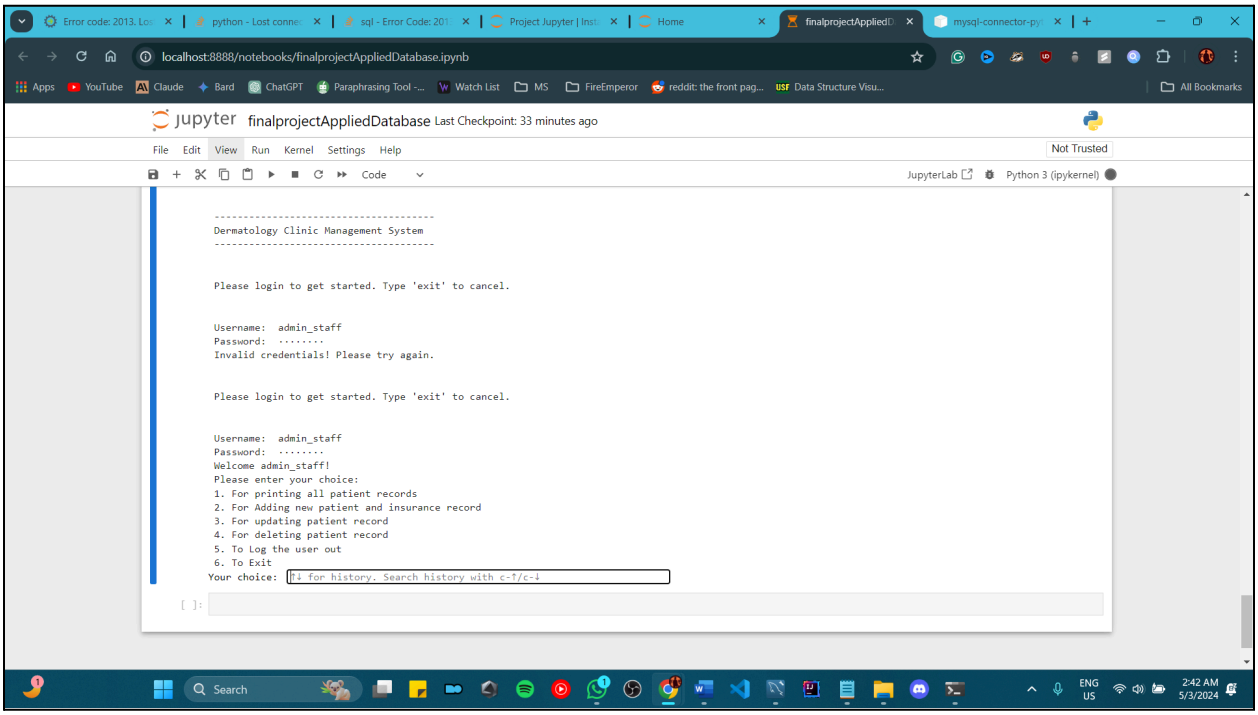
12. Start running the cells by clicking on the icon highlighted below screenshot and follow the instructions in the notebook:



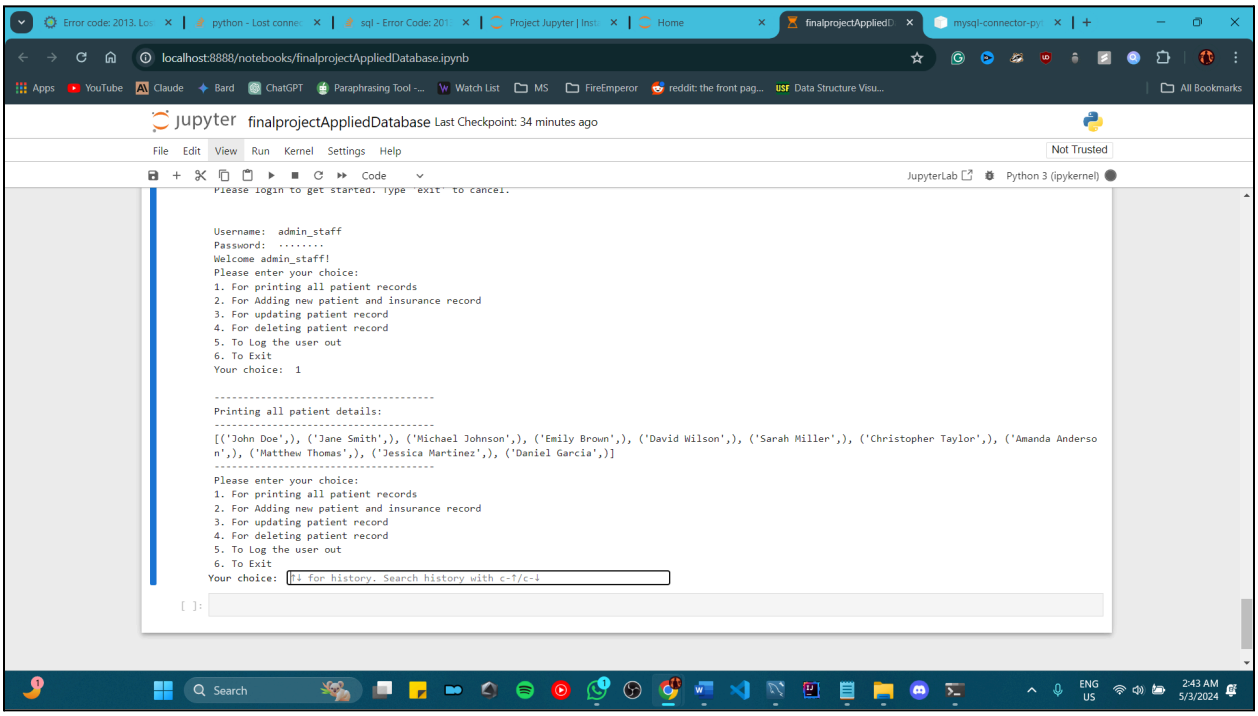
13. Now you are on the homepage of the application and it will ask you for the username and password as shown below:



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).



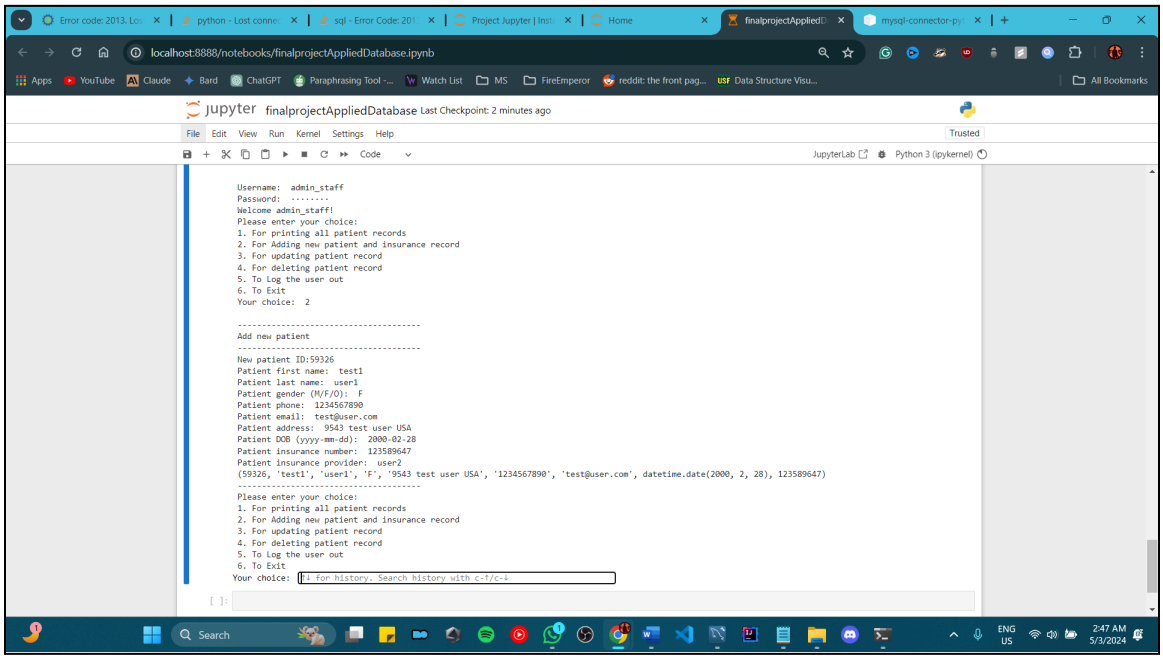
15. Once you have logged in successfully you will see options available to admin staff user, let us explore them one by one:
    a. If you type 1 in the 'Your choices' text box it will select the 'For printing all patient records' option and you will be able to view the patient records in the patient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

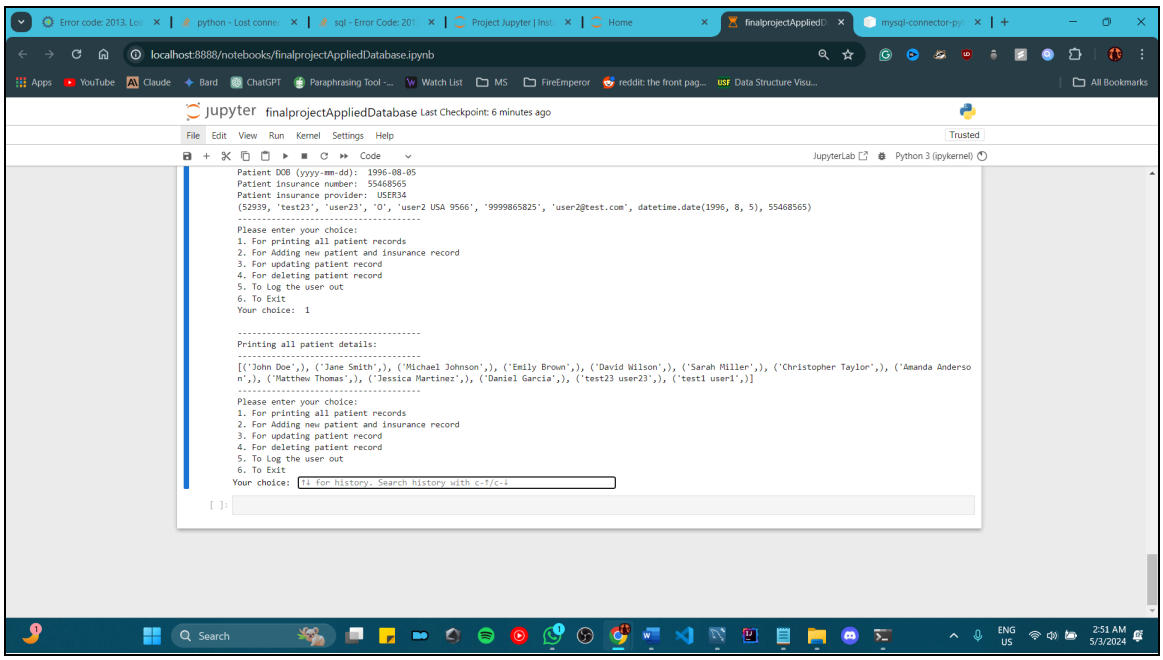


b. Now type 2 in the ‘Your choices’ text box it will select the ‘For Adding new patient and insurance record’ option, this will ask you to insert the data record info of patient and insurance details. You can use the dummy data as given below:

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:

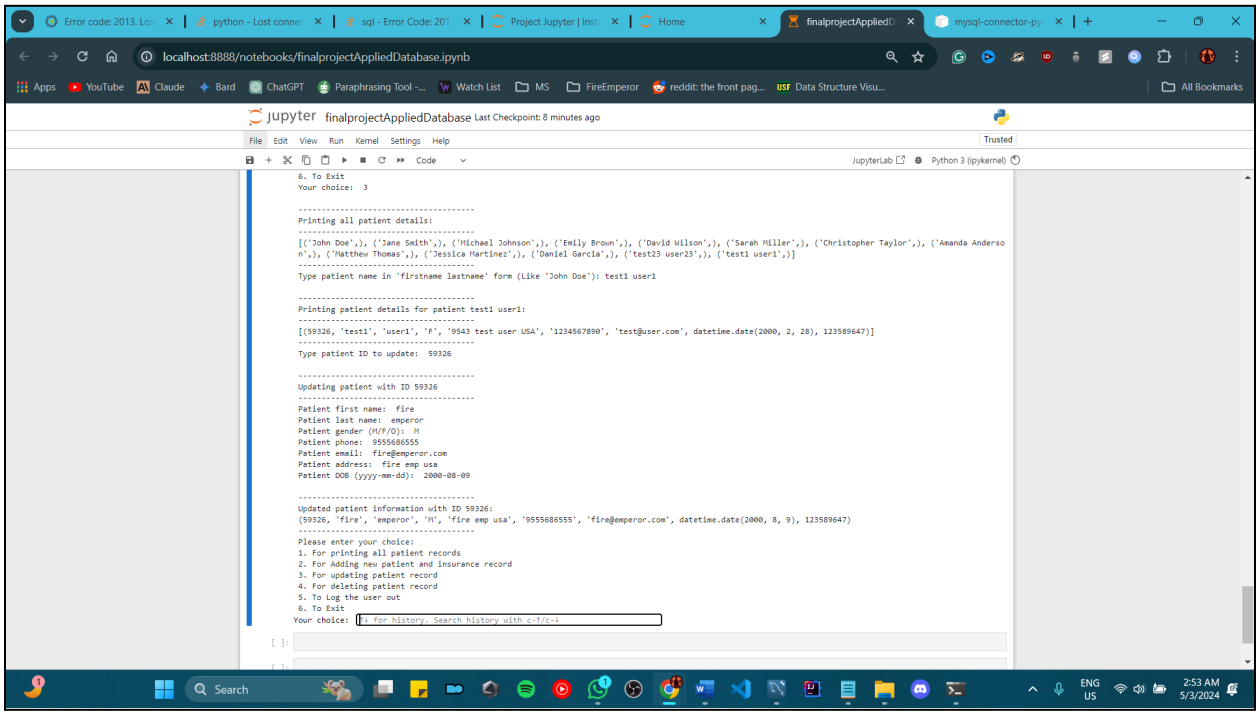




c. Now type 3 in the ‘Your choices’ text box it will select the ‘For updating patient record’ option, which will ask you to update an existing record of a patient. It will query into the database for all the patients with the provided name and return a list of all the patients matching that name, then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

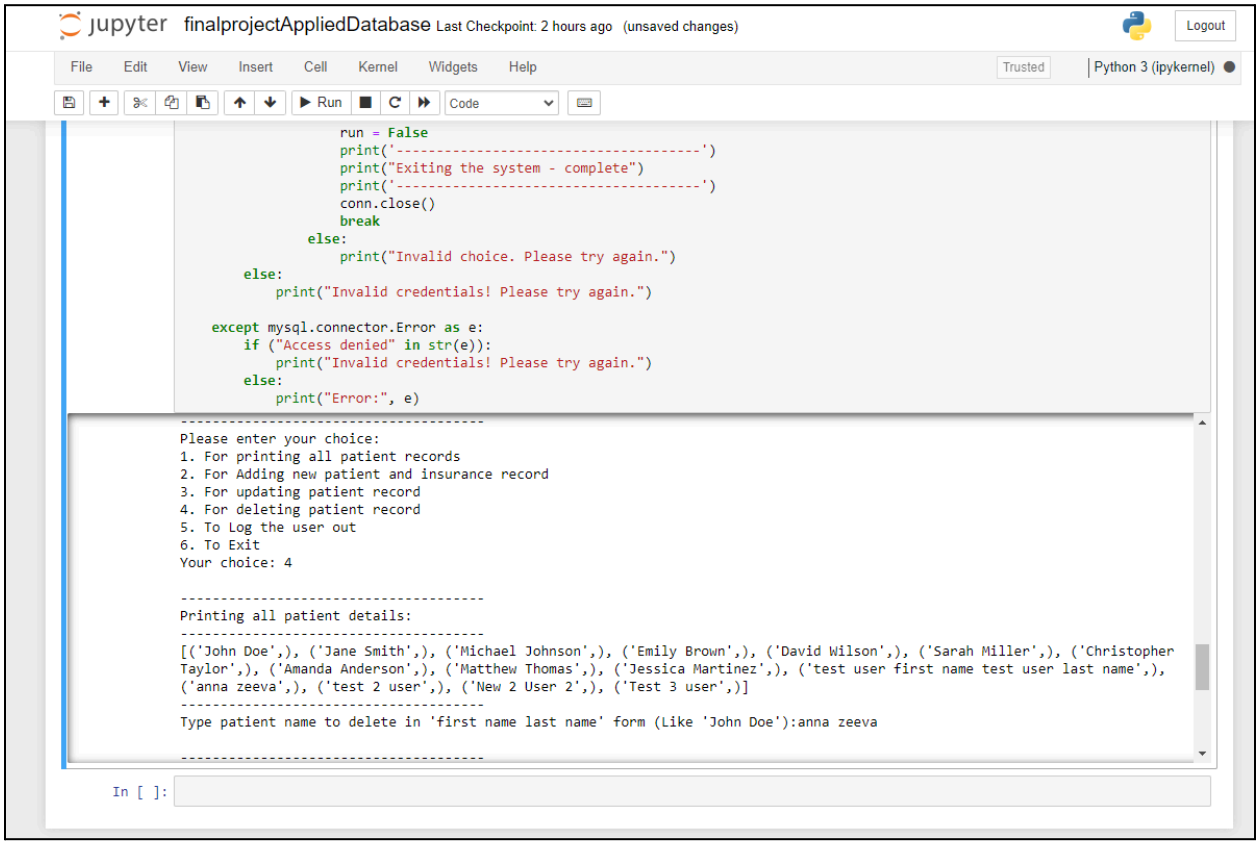
fname - Dave
lname - Shwiff
gender - M
phoneNum = 8888888888
email = daveshwiff@dummy.com
address = 777 Broken Ln CA 28222
dob = 1996-12-01

You can also refer to the below screenshot for the same

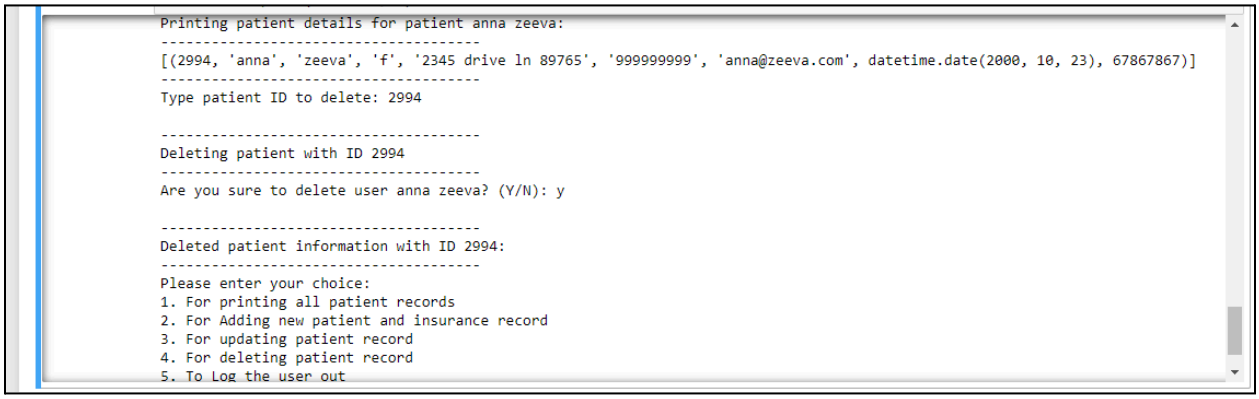


d. Now type 4 in the 'Your choices' text box it will select the 'For deleting patient record' option, it will show you all the patients present in the system and will ask you to enter an existing record of a patient. It will query into the database for all the patients with the provided name and return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

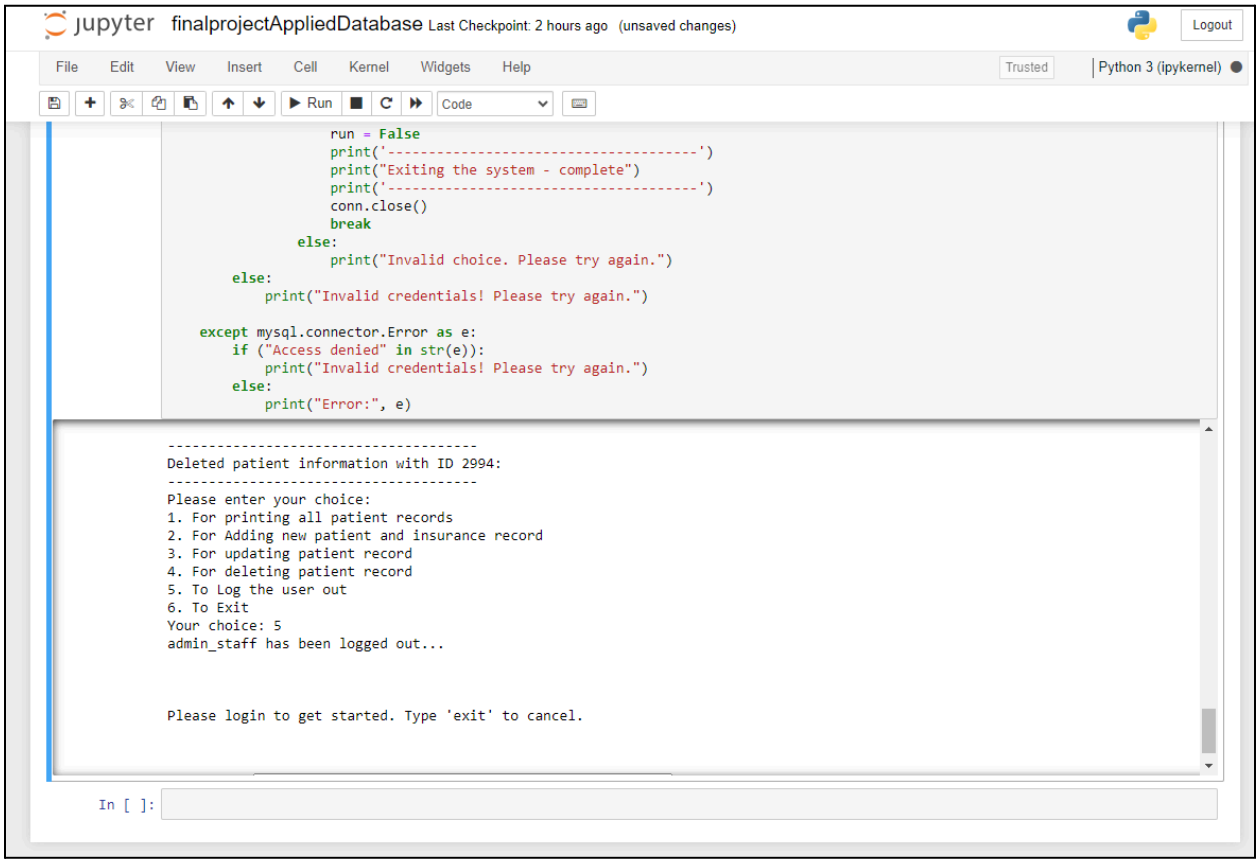
Screenshot 1



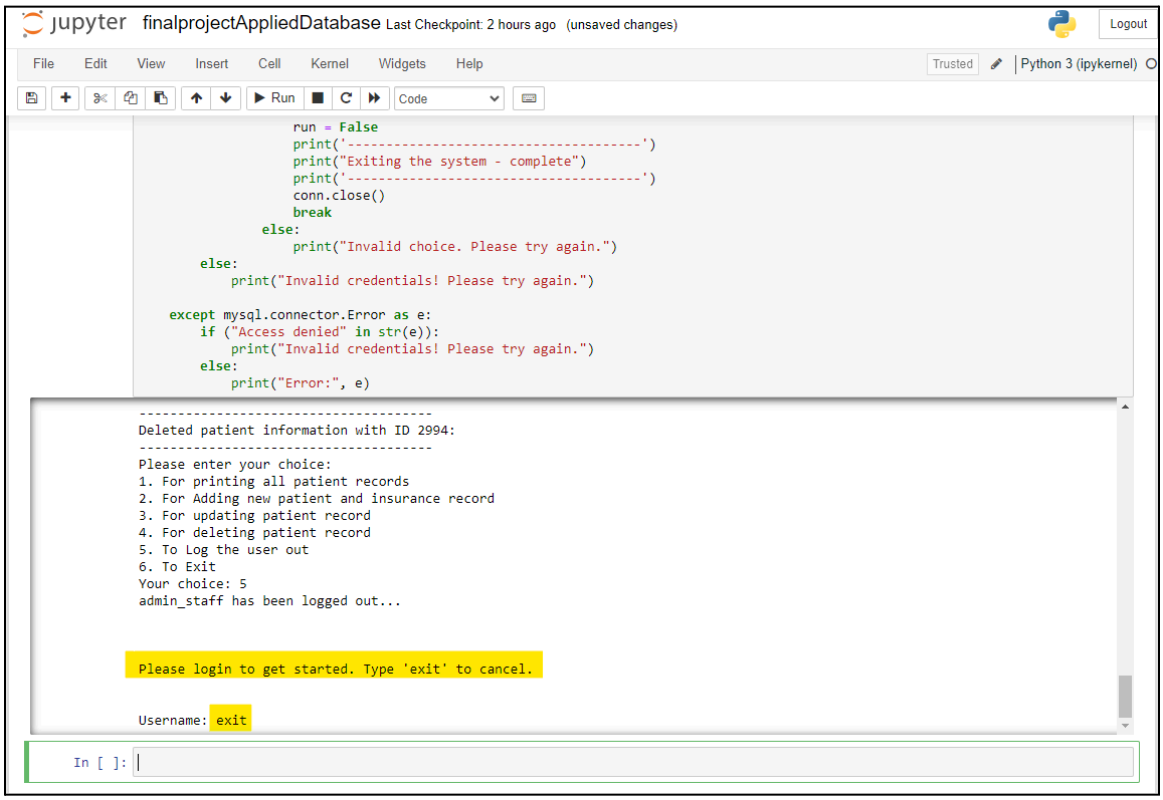
Screenshot 2



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)

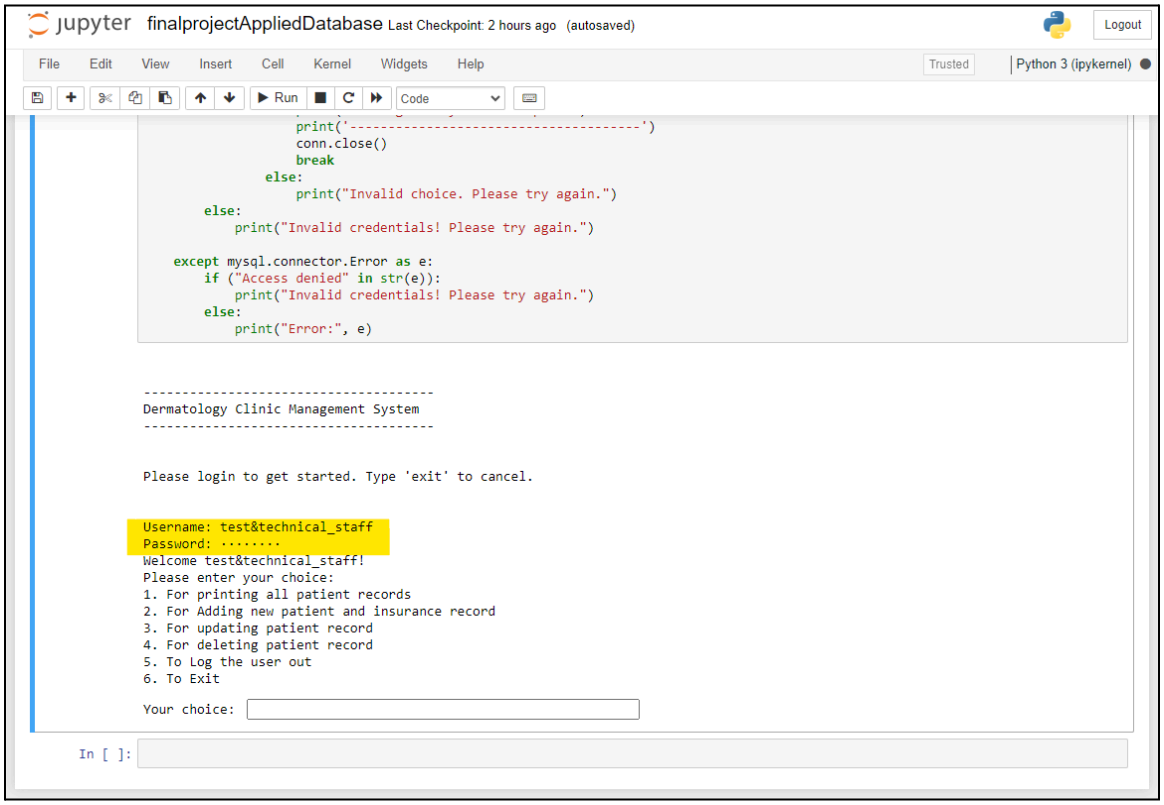


f. Now type 6 in the 'Your choices' text box it will select the 'To Exit' option, and it will exit you from the programming cell. (Refer to the below screenshot)



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



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)