

Initially, I embarked on a data extraction task with a Python script titled "Data Crawling.py," which allowed me to gather data from a specified website. After successfully retrieving the data, I established a connection between the Python environment and PostgreSQL to enable database interactions.

Upon creating a new database, I began by performing a read operation to familiarize myself with the structure and content of the data. I carried out a deletion of a row and updated two entries, showcasing precise data manipulation skills. Moreover, I expanded the dataset by inserting a new record.

Moving forward with the project, I initiated the development of a user interface using the Flask library, aiming to forge a user-friendly platform for database interactions. This interface was crafted to allow users to conduct updates independently, thereby enhancing the database's functionality and the overall user experience. The development process is detailed in the "interface build" file, which contains both the Python code and HTML.

Please find my GitHub repository link below:

GitHub Repository: <https://github.com/monerahalmobarak/Internship-Program--Solutions-Productization>

Some screenshots:

```
SQL Shell (psql)
Server [localhost]:
Database [postgres]:
Port [5432]:
Username [postgres]:
Password for user postgres:
psql (16.1)
WARNING: Console code page (850) differs from Windows code page (1252)
8-bit characters might not work correctly. See psql reference
page "Notes for Windows users" for details.
Type "help" for help.

postgres=# CREATE DATABASE SQLDataBase;
CREATE DATABASE
postgres=# \c sqldatabase;
You are now connected to database "sqldatabase" as user "postgres".
sqldatabase=# SELECT * FROM oil_prices;
```

Date	Area/Product	Price
04 December 2023	WTI - Cushing, Oklahoma	72.73
05 December 2023	WTI - Cushing, Oklahoma	71.95
06 December 2023	WTI - Cushing, Oklahoma	68.98
07 December 2023	WTI - Cushing, Oklahoma	69.00
08 December 2023	WTI - Cushing, Oklahoma	70.87
04 December 2023	Brent - Europe	78.16
05 December 2023	Brent - Europe	77.27
06 December 2023	Brent - Europe	74.33
07 December 2023	Brent - Europe	74.21
08 December 2023	Brent - Europe	75.94
04 December 2023	New York Harbor, Regular	2.315
05 December 2023	New York Harbor, Regular	2.281
06 December 2023	New York Harbor, Regular	2.202
07 December 2023	New York Harbor, Regular	2.181
08 December 2023	New York Harbor, Regular	2.230
04 December 2023	U.S. Gulf Coast, Regular	2.000
05 December 2023	U.S. Gulf Coast, Regular	1.966
06 December 2023	U.S. Gulf Coast, Regular	1.872
07 December 2023	U.S. Gulf Coast, Regular	1.851
08 December 2023	U.S. Gulf Coast, Regular	1.920
04 December 2023	Los Angeles	2.325
05 December 2023	Los Angeles	2.261
06 December 2023	Los Angeles	2.332
07 December 2023	Los Angeles	2.396
08 December 2023	Los Angeles	2.480
04 December 2023	New York Harbor	2.648

```
sqldatabase=# DELETE FROM oil_prices WHERE "Date" = '08 December 2023' AND "Area/Product" = 'New York Harbor' AND "Price" = '2.499';
DELETE 1
sqldatabase=# UPDATE oil_prices SET "Price" = '72.00' WHERE "Date" = '08 December 2023' AND "Area/Product" = 'Los Angeles';
UPDATE 2
sqldatabase=# INSERT INTO oil_prices ("Date", "Area/Product", "Price") VALUES ('08 December 2023', 'Los Angeles', '2.480');
INSERT 0 1
sqldatabase=#
```

```
sqldatabase=# SELECT * FROM oil_prices;
      Date      | Area/Product | Price
-----+-----+-----
04 December 2023 | WTI - Cushing, Oklahoma | 72.73
05 December 2023 | WTI - Cushing, Oklahoma | 71.95
06 December 2023 | WTI - Cushing, Oklahoma | 68.98
07 December 2023 | WTI - Cushing, Oklahoma | 69.00
08 December 2023 | WTI - Cushing, Oklahoma | 70.87
04 December 2023 | Brent - Europe | 78.16
05 December 2023 | Brent - Europe | 77.27
06 December 2023 | Brent - Europe | 74.33
07 December 2023 | Brent - Europe | 74.21
08 December 2023 | Brent - Europe | 75.94
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05 December 2023 | U.S. Gulf Coast, Regular | 1.966
06 December 2023 | U.S. Gulf Coast, Regular | 1.872
07 December 2023 | U.S. Gulf Coast, Regular | 1.851
08 December 2023 | U.S. Gulf Coast, Regular | 1.920
04 December 2023 | Los Angeles | 2.325
05 December 2023 | Los Angeles | 2.261
06 December 2023 | Los Angeles | 2.332
07 December 2023 | Los Angeles | 2.396
04 December 2023 | New York Harbor | 2.648
05 December 2023 | New York Harbor | 2.612
06 December 2023 | New York Harbor | 2.538
07 December 2023 | New York Harbor | 2.525
04 December 2023 | New York Harbor | 2.783
05 December 2023 | New York Harbor | 2.704
06 December 2023 | New York Harbor | 2.615
07 December 2023 | New York Harbor | 2.603
08 December 2023 | New York Harbor | 2.624
04 December 2023 | U.S. Gulf Coast | 2.371
05 December 2023 | U.S. Gulf Coast | 2.312
06 December 2023 | U.S. Gulf Coast | 2.293
07 December 2023 | U.S. Gulf Coast | 2.280
08 December 2023 | U.S. Gulf Coast | 2.239
04 December 2023 | Los Angeles | 2.728
05 December 2023 | Los Angeles | 2.692
06 December 2023 | Los Angeles | 2.583
07 December 2023 | Los Angeles | 2.570
04 December 2023 | U.S. Gulf Coast | 2.401
05 December 2023 | U.S. Gulf Coast | 2.357
06 December 2023 | U.S. Gulf Coast | 2.303
07 December 2023 | U.S. Gulf Coast | 2.290
08 December 2023 | U.S. Gulf Coast | 2.299
04 December 2023 | Mont Belvieu, Texas | 0.730
05 December 2023 | Mont Belvieu, Texas | 0.708
06 December 2023 | Mont Belvieu, Texas | 0.685
07 December 2023 | Mont Belvieu, Texas | 0.698
08 December 2023 | Mont Belvieu, Texas | 0.705
08 December 2023 | Los Angeles | 72.00
08 December 2023 | Los Angeles | 72.00
08 December 2023 | Los Angeles | 2.480
(55 rows)
```

127.0.0.1:5000

Update Oil Price

Old Date
Old Area/Product
Old Price
New Date
New Area/Product
New Price

Update Record

127.0.0.1:5000

Update Oil Price

05 December 2023
U.S. Gulf Coast
2.357
04 December 2023
U.S. Gulf Coast
44.23

Update Record

