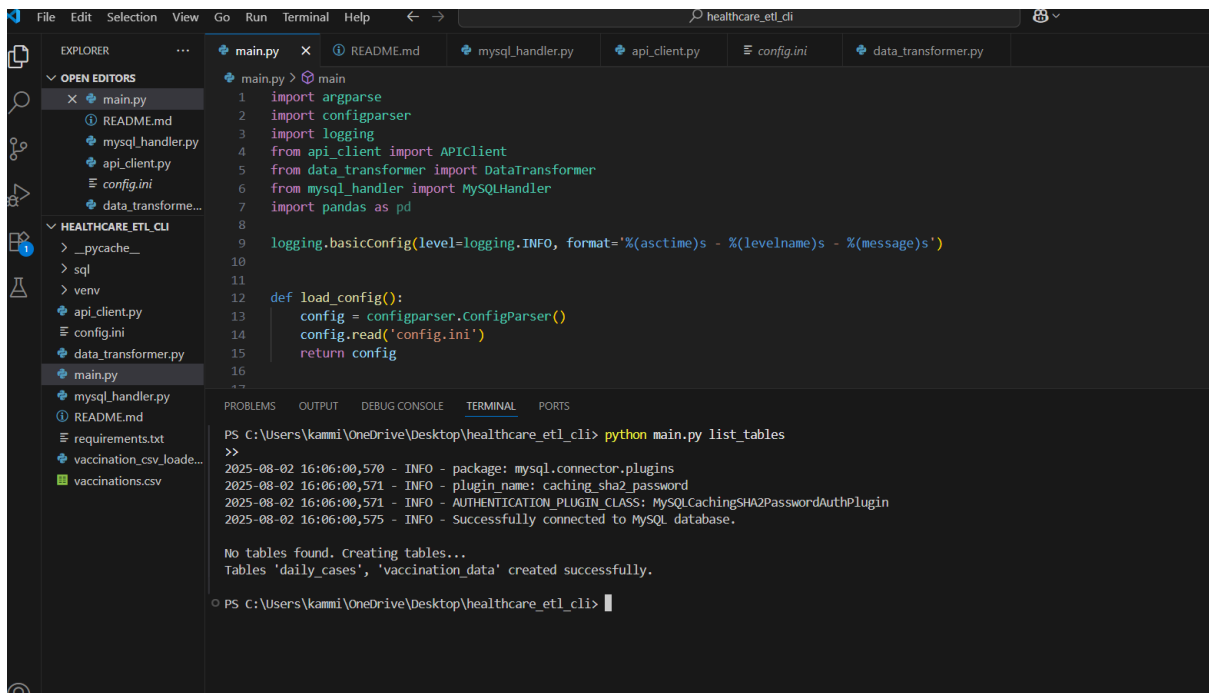


## 1. List of all Databases Tables.

```
# python main.py list_tables
```



The screenshot shows a VS Code editor with a project named 'healthcare\_etl\_cli'. The Explorer panel on the left shows the file structure, including 'main.py', 'README.md', 'mysql\_handler.py', 'api\_client.py', 'config.ini', and 'data\_transformer.py'. The main editor displays the code for 'main.py', which includes imports for argparse, configparser, logging, APIClient, DataTransformer, MySQLHandler, and pandas. The code also includes a logging configuration and a 'load\_config()' function. The terminal at the bottom shows the command 'python main.py list\_tables' being executed. The output indicates that the script successfully connected to the MySQL database and created two tables: 'daily\_cases' and 'vaccination\_data'.

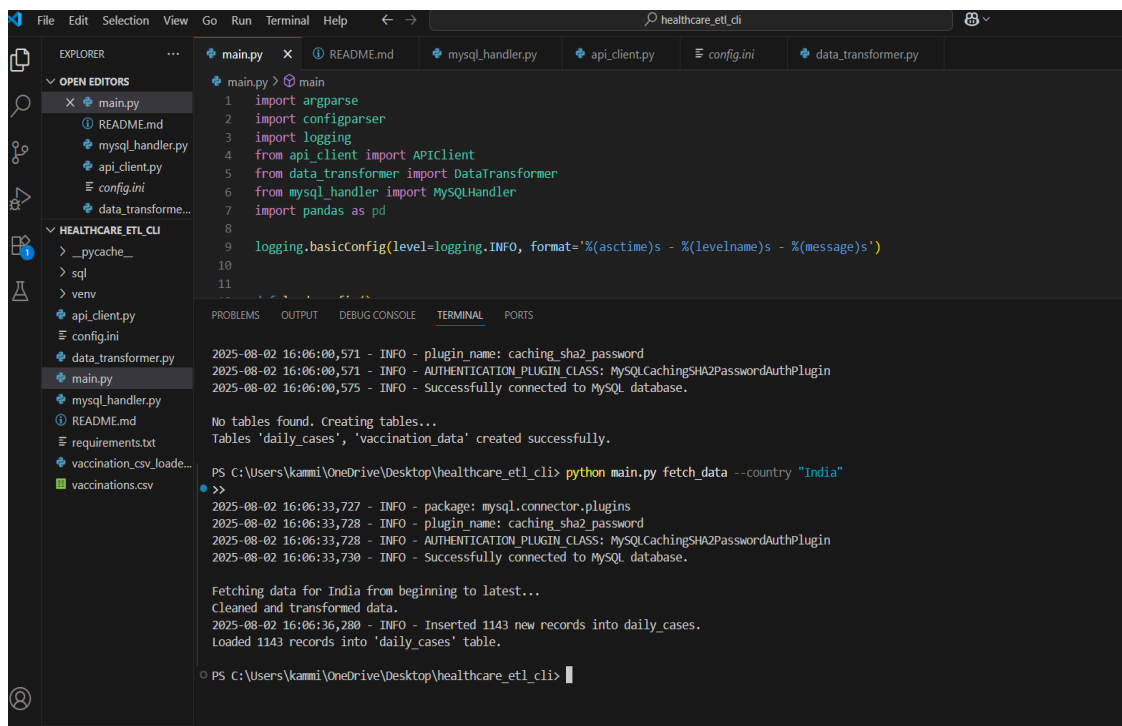
```
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py list_tables
>>
2025-08-02 16:06:00,570 - INFO - package: mysql.connector.plugins
2025-08-02 16:06:00,571 - INFO - plugin_name: caching_sha2_password
2025-08-02 16:06:00,571 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:06:00,575 - INFO - Successfully connected to MySQL database.

No tables found. Creating tables...
Tables 'daily_cases', 'vaccination_data' created successfully.

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>
```

## 2. Fetching data for India.

```
# python main.py fetch_data --country "India"
```



The screenshot shows the same VS Code editor environment as the first image. The terminal now shows the command 'python main.py fetch\_data --country "India"' being executed. The output indicates that the script successfully connected to the MySQL database and fetched data for India from the beginning to the latest. The data was cleaned and transformed, and 1143 new records were inserted into the 'daily\_cases' table.

```
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py fetch_data --country "India"
>>
2025-08-02 16:06:33,727 - INFO - package: mysql.connector.plugins
2025-08-02 16:06:33,728 - INFO - plugin_name: caching_sha2_password
2025-08-02 16:06:33,728 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:06:33,730 - INFO - Successfully connected to MySQL database.

Fetching data for India from beginning to latest...
Cleaned and transformed data.
2025-08-02 16:06:36,280 - INFO - Inserted 1143 new records into daily_cases.
Loaded 1143 records into 'daily_cases' table.

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>
```

```
File Edit Selection View Go Run Terminal Help
healthcare_etl_cli

EXPLORER
main.py x README.md mysql_handler.py api_client.py config.ini data_transformer.py
HEALTHCARE_ETL_CLI
_pycache_
sql
venv
api_client.py
config.ini
data_transformer.py
main.py
mysql_handler.py
README.md
requirements.txt
vaccination_csv_loader.py
vaccinations.csv

main.py > main
1 import argparse
2 import configparser
3 import logging
4 from api_client import APIClient
5 from data_transformer import DataTransformer
6 from mysql_handler import MySQLHandler
7 import pandas as pd
8
9 logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
10
11
>>
>>
2025-08-02 16:09:35,225 - INFO - package: mysql.connector.plugins
2025-08-02 16:09:35,225 - INFO - plugin name: caching_sha2_password
2025-08-02 16:09:35,225 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:09:35,230 - INFO - Successfully connected to MySQL database.

Fetching data for United States from beginning to latest...
Cleaned and transformed data.
2025-08-02 16:09:36,758 - INFO - Inserted 1143 new records into daily_cases.
Loaded 1143 records into 'daily_cases' table.

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py fetch_data --country "India" --start_date 2022-01-01 --end_date 2023-01-31
>>
2025-08-02 16:10:06,448 - INFO - package: mysql.connector.plugins
2025-08-02 16:10:06,448 - INFO - plugin name: caching_sha2_password
2025-08-02 16:10:06,449 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:10:06,455 - INFO - Successfully connected to MySQL database.

Fetching data for India from 2022-01-01 to 2023-01-31...
Cleaned and transformed data.
2025-08-02 16:10:07,748 - INFO - No new records to insert.
Loaded 396 records into 'daily_cases' table.

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>
```

### 3. Querying total cases for India

# python main.py query\_data total\_cases "India"

```
File Edit Selection View Go Run Terminal Help
healthcare_etl_cli

EXPLORER
main.py x README.md mysql_handler.py api_client.py config.ini data_transformer.py
HEALTHCARE_ETL_CLI
_pycache_
sql
venv
api_client.py
config.ini
data_transformer.py
main.py
mysql_handler.py
README.md
requirements.txt
vaccination_csv_loader.py
vaccinations.csv

main.py > main
1 import argparse
2 import configparser
3 import logging
4 from api_client import APIClient
5 from data_transformer import DataTransformer
6 from mysql_handler import MySQLHandler
7 import pandas as pd
8
9 logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
10
11
>>
>>
2025-08-02 16:10:07,748 - INFO - No new records to insert.
Loaded 396 records into 'daily_cases' table.

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py query_data total_cases "India"
>>
2025-08-02 16:10:47,027 - INFO - package: mysql.connector.plugins
2025-08-02 16:10:47,028 - INFO - plugin name: caching_sha2_password
2025-08-02 16:10:47,028 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:10:47,031 - INFO - Successfully connected to MySQL database.

Total COVID-19 Total Cases in India: 44690738

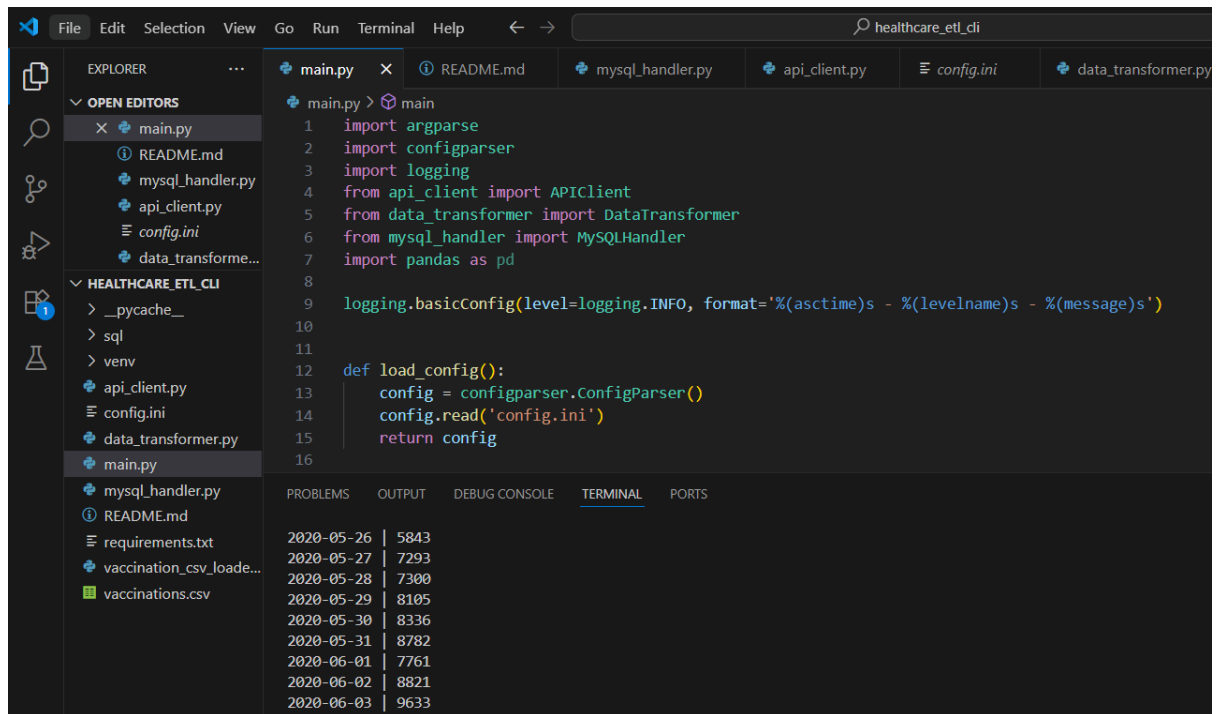
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py query_data total_cases "United States"
>>
2025-08-02 16:11:09,502 - INFO - package: mysql.connector.plugins
2025-08-02 16:11:09,503 - INFO - plugin name: caching_sha2_password
2025-08-02 16:11:09,503 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:11:09,507 - INFO - Successfully connected to MySQL database.

Total COVID-19 Total Cases in United States: 103802702

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>
```

#### 4. Querying daily trends for new cases in India.

# python main.py query\_data daily\_trends "India" new\_cases



The screenshot shows the Visual Studio Code editor with the 'main.py' file open. The file contains the following code:

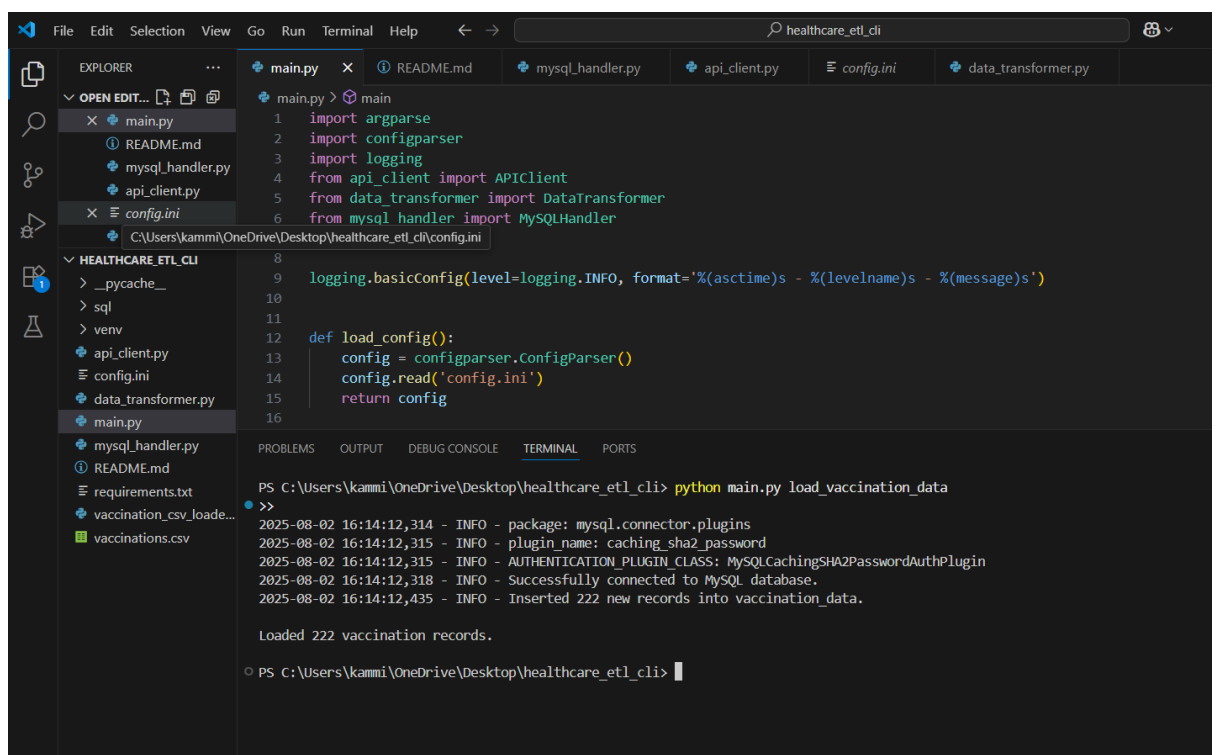
```
1 import argparse
2 import configparser
3 import logging
4 from api_client import APIClient
5 from data_transformer import DataTransformer
6 from mysql_handler import MySQLHandler
7 import pandas as pd
8
9 logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
10
11
12 def load_config():
13     config = configparser.ConfigParser()
14     config.read('config.ini')
15     return config
16
```

The terminal output shows the following data:

Date	new_cases
2020-05-26	5843
2020-05-27	7293
2020-05-28	7300
2020-05-29	8105
2020-05-30	8336
2020-05-31	8782
2020-06-01	7761
2020-06-02	8821
2020-06-03	9633

#### 5. Load Vaccination\_data.

# python main.py load\_vaccination\_data



The screenshot shows the Visual Studio Code editor with the 'main.py' file open. The file contains the following code:

```
1 import argparse
2 import configparser
3 import logging
4 from api_client import APIClient
5 from data_transformer import DataTransformer
6 from mysql_handler import MySQLHandler
7
8
9 logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
10
11
12 def load_config():
13     config = configparser.ConfigParser()
14     config.read('config.ini')
15     return config
16
```

The terminal output shows the following logs:

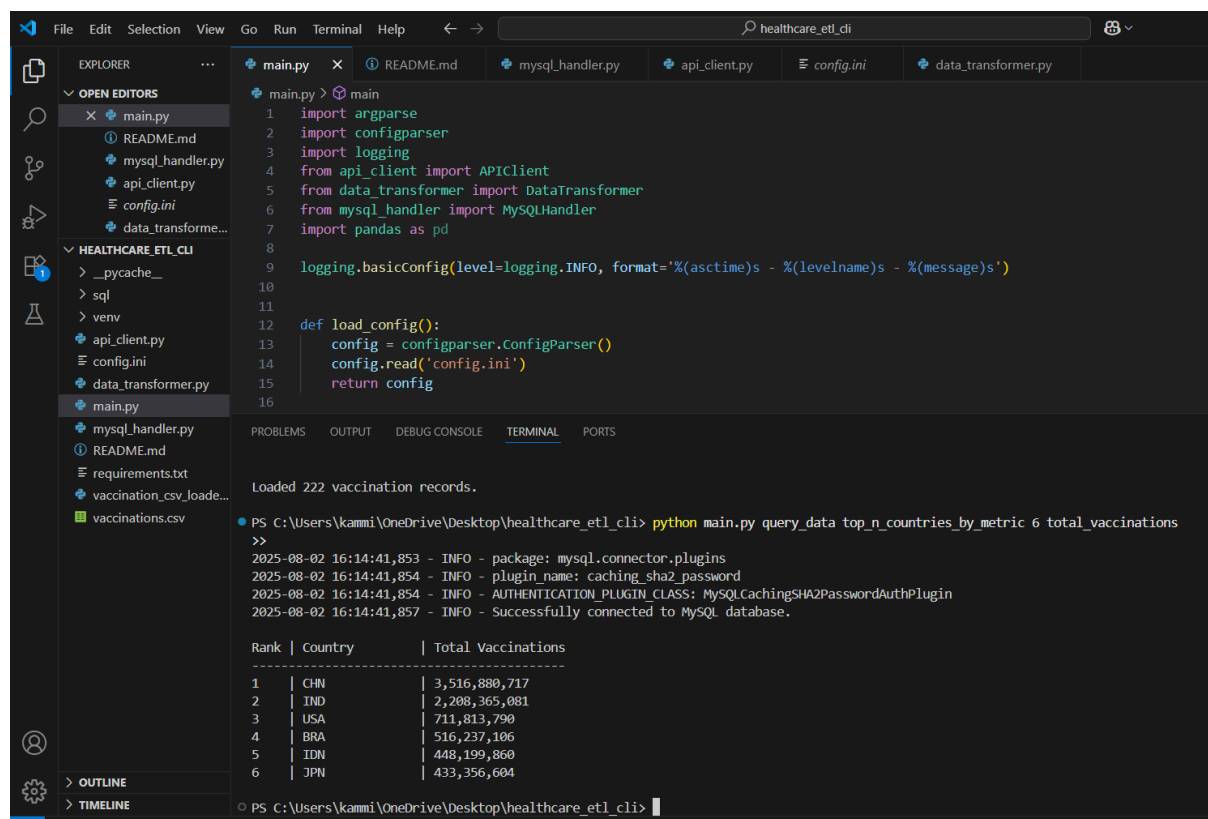
```
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py load_vaccination_data
>>
2025-08-02 16:14:12,314 - INFO - package: mysql.connector.plugins
2025-08-02 16:14:12,315 - INFO - plugin_name: caching_sha2_password
2025-08-02 16:14:12,315 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:14:12,318 - INFO - Successfully connected to MySQL database.
2025-08-02 16:14:12,435 - INFO - Inserted 222 new records into vaccination_data.

Loaded 222 vaccination records.

PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>
```

## 6. Getting top 6 countries by total vaccinations

# python main.py query\_data top\_n\_countries\_by\_metric 6 total\_vaccinations



The screenshot shows a VS Code editor with a project named 'healthcare\_etl\_cli'. The Explorer panel on the left shows the file structure, including 'main.py', 'README.md', 'mysql\_handler.py', 'api\_client.py', 'config.ini', 'data\_transformer.py', and a 'HEALTHCARE\_ETL\_CLI' directory. The main editor displays the code in 'main.py', which imports argparse, configparser, logging, APIClient, DataTransformer, MySQLHandler, and pandas. It also shows a logging configuration and a 'load\_config()' function. The TERMINAL panel at the bottom shows the command 'python main.py query\_data top\_n\_countries\_by\_metric 6 total\_vaccinations' being executed. The output indicates that 222 vaccination records were loaded and a table of the top 6 countries by total vaccinations was displayed.

```
1 import argparse
2 import configparser
3 import logging
4 from api_client import APIClient
5 from data_transformer import DataTransformer
6 from mysql_handler import MySQLHandler
7 import pandas as pd
8
9 logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
10
11
12 def load_config():
13     config = configparser.ConfigParser()
14     config.read('config.ini')
15     return config
16
```

Loaded 222 vaccination records.

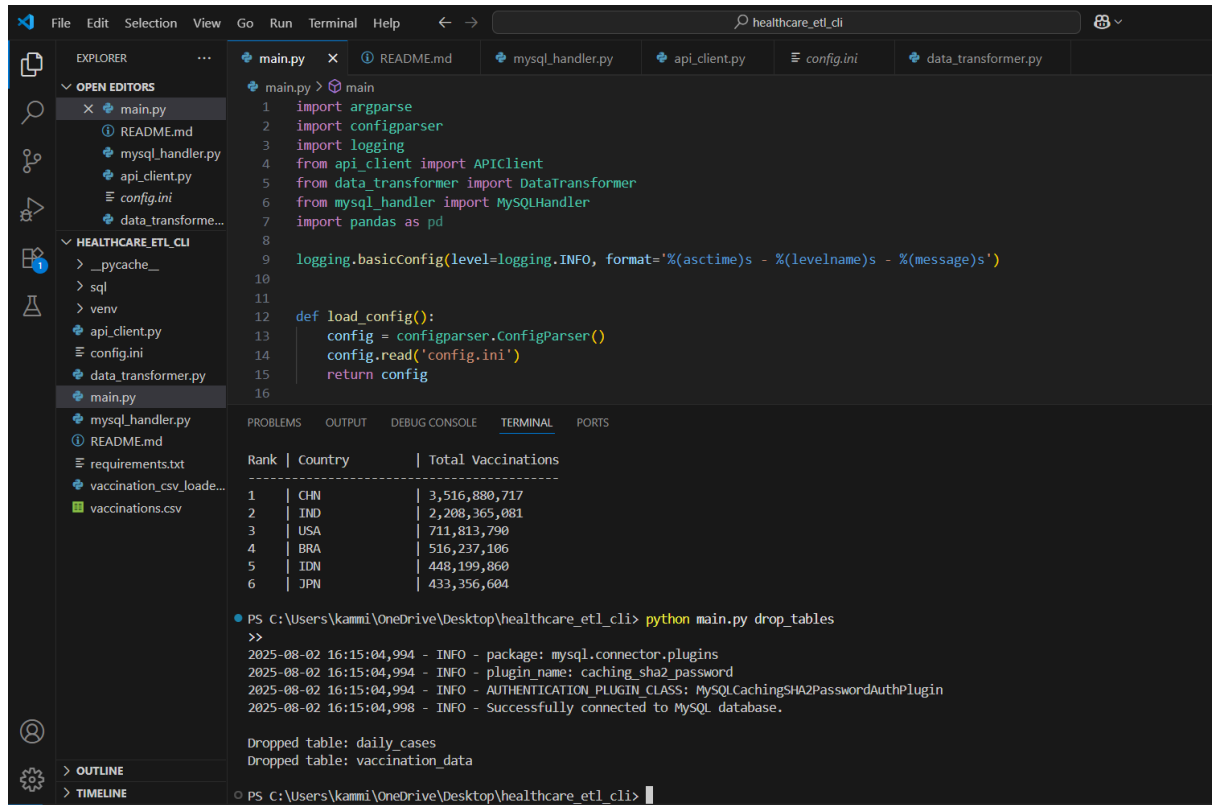
```
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py query_data top_n_countries_by_metric 6 total_vaccinations
>>
2025-08-02 16:14:41,853 - INFO - package: mysql.connector.plugins
2025-08-02 16:14:41,854 - INFO - plugin_name: caching_sha2_password
2025-08-02 16:14:41,854 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:14:41,857 - INFO - Successfully connected to MySQL database.
```

Rank	Country	Total Vaccinations
1	CHN	3,516,880,717
2	IND	2,208,365,081
3	USA	711,813,790
4	BRA	516,237,106
5	IDN	448,199,860
6	JPN	433,356,604

```
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>
```

7. Drop all tables.

# python main.py drop\_tables



The screenshot shows a VS Code editor window with the file explorer on the left, the main editor in the center, and the terminal at the bottom. The main editor displays the `main.py` file, which contains the following code:

```
1 import argparse
2 import configparser
3 import logging
4 from api_client import APIClient
5 from data_transformer import DataTransformer
6 from mysql_handler import MySQLHandler
7 import pandas as pd
8
9 logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
10
11
12 def load_config():
13     config = configparser.ConfigParser()
14     config.read('config.ini')
15     return config
16
```

The terminal at the bottom shows the command `python main.py drop_tables` being executed. The output includes a table of vaccination data and a confirmation message:

```
PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli> python main.py drop_tables
>>
2025-08-02 16:15:04,994 - INFO - package: mysql.connector.plugins
2025-08-02 16:15:04,994 - INFO - plugin_name: caching_sha2_password
2025-08-02 16:15:04,994 - INFO - AUTHENTICATION_PLUGIN_CLASS: MySQLCachingSHA2PasswordAuthPlugin
2025-08-02 16:15:04,998 - INFO - Successfully connected to MySQL database.

Dropped table: daily_cases
Dropped table: vaccination_data
```

Rank	Country	Total Vaccinations
1	CHN	3,516,880,717
2	IND	2,208,365,081
3	USA	711,813,790
4	BRA	516,237,106
5	IDN	448,199,860
6	JPN	433,356,604

The terminal prompt is `PS C:\Users\kammi\OneDrive\Desktop\healthcare_etl_cli>`.