

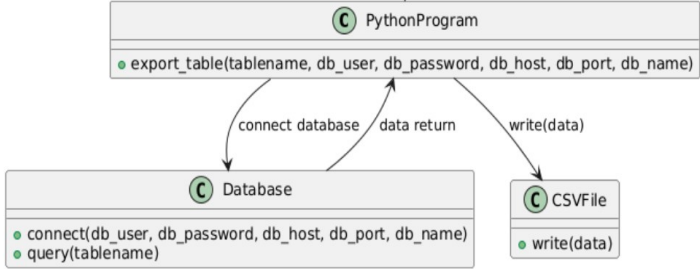
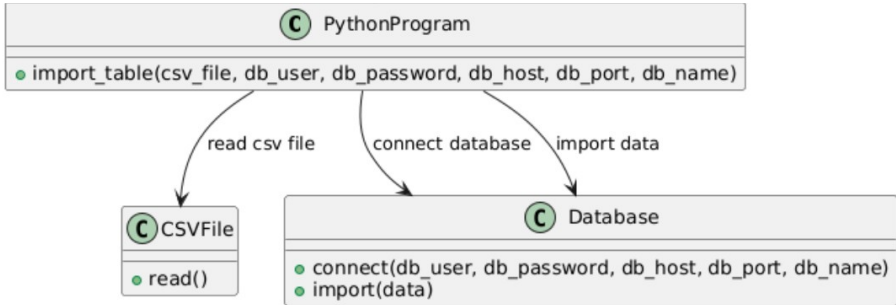
Student Number: 21

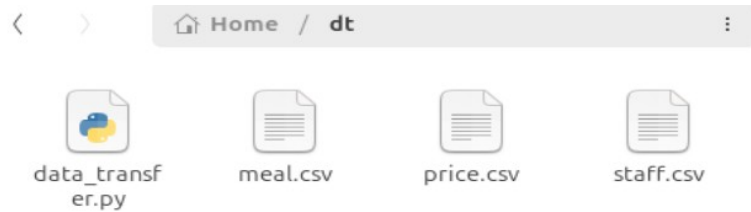
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This homework assignment demonstrates how my program, written in Python, exports a Postgres table to a CSV file and then uses the same tool to import it back

Program Name: **data_transfer.py**

Programming Language: Python

Export Table to CSV	<p>Usage:</p> <pre>python data_transfer.py export <tablename> --db_user <userid> --db_password <password> --db_host <servername> --db_port <serverport> --db_name <databasename></pre>
	 <pre>classDiagram class PythonProgram { +export_table(tablename, db_user, db_password, db_host, db_port, db_name) } class Database { +connect(db_user, db_password, db_host, db_port, db_name) +query(tablename) } class CSVFile { +write(data) } PythonProgram --> Database : connect database Database --> PythonProgram : data return PythonProgram --> CSVFile : write(data)</pre> <p>The diagram illustrates the export process. The PythonProgram class has a method <code>export_table(tablename, db_user, db_password, db_host, db_port, db_name)</code>. It interacts with the Database class via a <code>connect database</code> message and receives <code>data return</code>. The Database class has methods <code>connect(db_user, db_password, db_host, db_port, db_name)</code> and <code>query(tablename)</code>. The CSVFile class has a <code>write(data)</code> method, which is called by PythonProgram via a <code>write(data)</code> message.</p>
Import Table from CSV	<p>Usage:</p> <pre>python data_transfer.py import <tablename> --csv_file <csv filename> --db_user <userid> --db_password <password> --db_host <servername> --db_port <serverport> --db_name <databasename></pre>
	 <pre>classDiagram class PythonProgram { +import_table(csv_file, db_user, db_password, db_host, db_port, db_name) } class CSVFile { +read() } class Database { +connect(db_user, db_password, db_host, db_port, db_name) +import(data) } PythonProgram --> CSVFile : read csv file PythonProgram --> Database : connect database PythonProgram --> Database : import data</pre> <p>The diagram illustrates the import process. The PythonProgram class has a method <code>import_table(csv_file, db_user, db_password, db_host, db_port, db_name)</code>. It interacts with the CSVFile class via a <code>read csv file</code> message. It also interacts with the Database class via <code>connect database</code> and <code>import data</code> messages. The CSVFile class has a <code>read()</code> method. The Database class has methods <code>connect(db_user, db_password, db_host, db_port, db_name)</code> and <code>import(data)</code>.</p>



For example, we can export the meal table to a CSV file named 'meal.csv'. After the administrator makes changes to the file, it can be imported back into the database and displayed on the meal screen page. The same procedure applies to the Price and Staff tables as well.

Text Import - [meal.csv]

Import

Character set:
Unicode (UTF-8)

Locale:
Default - English (USA)

From row:
1

Separator Options

☐ Fixed width
☒ Separated by

☒ Tab
☒ Comma
☒ Semicolon
☐ Space
☐ Other

☐ Merge delimiters
☐ Trim spaces
String delimiter:
"

Other Options

☐ Format quoted field as text
☐ Detect special numbers

☐ Evaluate formulas
☒ Detect scientific notation

Fields

Column type:

	Standard	Standard	Standard	Standard	Standard
	day_of_month	breakfast_menu	lunch_menu	teatime_menu	dinner_menu
1	1	燕麥粥配水果	烤雞沙拉	草本茶與餅乾	烤魚配蔬菜
2	2	炒蛋	蔬菜湯	蜂蜜優格	炒豆腐配米飯
3	3	全麥吐司	藜麥沙拉	新鮮水果	扁豆燉菜
4	4	香蕉菠菜奶昔	火雞三明治	餅乾與起司	烤雞配地瓜
5	5	堅果粥	菠菜與費塔起司沙拉	綠茶與鬆餅	蔬菜咖哩配米飯
6	6	優格配格蘭諾拉	烤蔬菜捲	水果沙拉	牛肉燉菜
7	7	煎餅配糖漿	雞凱薩沙拉	鬆餅	意大利麵配番茄
8	8	水煮蛋	扁豆沙拉	草本茶	烤鮭魚配蘆筍

Help
Cancel
OK

Export Table command

```
~/dt proj2 3.10.5 python data_transfer.py export meal --db_user postgres --db_password Abcd1234 --db_host localhost --db_port 5432 --db_name elderlydb
```

Import Table command

```
~/dt proj2 3.10.5 python data_transfer.py import meal --csv_file meal.csv --db_user postgres --db_password Abcd1234 --db_host localhost --db_port 5432 --db_name elderlydb
2025-01-20 11:39:15,377 - INFO - Table cleared successfully.
2025-01-20 11:39:15,412 - INFO - Data uploaded successfully! 31 records imported.
~/dt proj2 3.10.5
```



當月餐單

日期	星期	早餐	午餐	下午茶	晚餐
2025年01月1日	星期三	燕麥粥配水果	烤雞沙拉	草本茶與餅乾	烤魚配蔬菜
2025年01月2日	星期四	炒蛋	蔬菜湯	蜂蜜優格	炒豆腐配米飯
2025年01月3日	星期五	全麥吐司	藜麥沙拉	新鮮水果	扁豆燉菜
2025年01月4日	星期六	香蕉菠菜奶昔	火雞三明治	餅乾與起司	烤雞配地瓜
2025年01月5日	星期日	堅果粥	菠菜與費塔起司沙拉	綠茶與鬆餅	蔬菜咖哩配米飯
2025年01月6日	星期一	優格配格蘭諾拉	烤蔬菜捲	水果沙拉	牛肉燉菜