

DSE5002 Project 2

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Import Libraries (Part 2.b)

```
In [1]: from project_functions.connect import Connect
        from project_functions.query import Query
        from project_functions.transaction import Transaction
        from project_functions.db_manager import DBManager
        import os
```

Test Connection (Part 2.d)

Testing the connection with Pat's user information from the vault file:

Note: Plain text usernames and passwords are still very vulnerable, even if they are in an external file. In the past, I have gotten around this by storing encrypted versions of the user and password in hidden reference files, then using code to decrypt the credentials at execution time. I won't be doing that here, but the Cryptography python library makes this relatively easy. Although not a perfect solution, but it's been enough to appease IT and IS at a defense company :).

```
In [2]: test_conn = Connect()

        path = os.path.join(os.getcwd(), r'data\vault.txt')

        engine = test_conn.connect(path)
```

User: Pat successfully connected to bank!

```
In [3]: test_query = Query(test_conn)

        test_query.read_query("""
                                SELECT *
                                FROM department
                                """)
```

```
Out[3]:
```

	dept_id	name	trial104
0	1	Operations	T
1	2	Loans	T
2	3	Administration	T

Test Invalid Connection (Part 2.e)

Trying an invalid vault file name:

```
In [ ]: test_conn_invalid_vault = Connect()

invalid_path1 = os.path.join(os.getcwd(), r'data\vault1.txt')

engine = test_conn_invalid_vault.connect(invalid_path1)
```

Error: [Errno 2] No such file or directory: 'c:\\Users\\water\\OneDrive\\GradSchool\\DSE5002_Project_2\\data\\vault1.txt'

Trying a file with invalid credentials:

```
In [8]: invalid_path2 = os.path.join(os.getcwd(), r'data\vault2.txt')

engine = test_conn_invalid_vault.connect(invalid_path2)
```

Error: (psycopg2.OperationalError) connection to server at "localhost" (:::1), port 5432 failed: FATAL: password authentication failed for user "Not Pat"

(Background on this error at: <https://sqlalche.me/e/20/e3q8>)

Testing Transaction Database Connection (Part 4)

```
In [5]: test_transaction = Transaction(test_conn)
test_transaction.retrieve_transactions('01', '2000')
```

```
Out[5]:
```

	txn_id	txn_date	txn_type_cd	amount	teller_emp_id	execution_branch_id	funds_avail_c
0	1	2000-01-15	CDT	100.0	None	None	2000-0
1	2	2000-01-15	CDT	100.0	None	None	2000-0
2	9	2000-01-15	CDT	100.0	None	None	2000-0

```
In [6]: test_transaction_invalid = Transaction(test_conn)
test_transaction_invalid.retrieve_transactions('02', '2000')
```

Error: The entered date is invalid.

```
Out[6]:
```

	txn_id	txn_date	txn_type_cd	amount	teller_emp_id	execution_branch_id	funds_avail_c
0	-1	-1	-1	-1	-1	-1	-1

Part 6, Testing DBManager class

```
In [7]: manager = DBManager(path)
manager.plot_transactions('01', '2000')
```

User: Pat successfully connected to bank!

