# Design Pattern 1 (Builder Pattern)

**Files Affected:**

* package/cli.py
  + Lines 24 – 29

**Class Diagram:**

See “Class Diagram Menu - Before Refactor.pdf” in diagram directory

**After Refactor:**

* package/refactor/menu/cli.py
* package/refactor/menu/menu\_director.py
* package/refactor/menu/menu\_builder.py
* package/refactor/menu/sqlite\_menu\_builder.py
* package/refactor/menu/mysql\_menu\_builder.py

**Class Diagram**

See “Class Diagram Menu – After Refactor.pdf” in diagram directory

# Design Pattern 2 (Strategy Pattern)

**Files Affected:**

* package/database/database.py
* package/database/sqlitedb.py
* package/database/mysqldb.py

**Class Diagram:**

See “Class Diagram Database – Before Refactor.pdf” in diagram directory

**After Refactor:**

* package/refactor/database/database\_abc.py
* package/refactor/database/database.py
* package/refactor/database/behaviours/connect\_behaviour.py
* package/refactor/database/behaviours/setup\_behaviour.py
* package/refactor/database/behaviours/query\_behaviour.py
* package/refactor/database/behaviours/fetch\_behaviour.py

**Class Diagram:**

See “Class Diagram Database – After Refactor.pdf” in diagram directory

# Testing Code

All testing code is found in a file located in the root directory called all\_tests.py. When running this script, it will ask you if you want to run the tests on the original code or using the refactored code.

I have also separated the tests of individual components into separate files which are also included in the root directory in case you wish to run tests individually:

* analyser\_tests.py
* database\_tests.py
* menu\_tests.py

I have also included the coverage html output of both instances of these tests which is included in the coverage directory folders “before” and “after”.

The coverage for both the original and refactored code is both **100% branch coverage.**

# PEP8

The refactored code and in fact the entire codebase passes PEP8 format checker as shown in the screenshot below:

A picture containing orange, monitor, photo, sitting

Description automatically generated

# Version Control

https://github.com/j-vanolst/BCDE321-Assignment3-2020

# Evaluation

For each sub class of a unittest.Testcase in all\_tests.py the setup( ) method checks whether the test is running on the original or refactored code. This is the only difference in these files as besides this difference, all the tests are the same and both original and refactored versions pass all the tests.

Please note that the MySQL database tests assume that a MySQL database server is running on localhost with the root user password set to password – these tests may fail when you run the tests on your machine.

# Dependencies

Requires the following python modules are installed:

* sqlite3
* mysql.connector
* graphviz

Requires the following software packages to be installed on the machine:

* graphviz
* dot