

# dbconnection.py

## 1.0 Introduction

dbconnection.py is a helper class for databaseUpload.py which uses the library SQLAlchemy to establish a connection to the database and send any SQL statements to the database to be executed.

## 2.0 Architectural and component-level design

### 1. \_\_init\_\_(self)

*Note: The actual credentials are stored in this file only because it is necessary so that it may be tested by someone outside our group. The github repository is private and if it were to become public then the credentials and all traces of them would be removed.*

- a. The constructor of the DBConnection object uses the SQLAlchemy library functions to establish a connection to our database.
- b. The way that statements are executed in dbconnection.py is by forming a transaction by appending a series of SQL statements.
  - i. The serializable isolation level is used for these transactions because during the upload of our data to the database the inserts into the job tables and the attribute tables are dependent on an insert to a jobid table, so SQL statements must be executed in sequence.

### 2. add\_stmt(self, stmt)

- a. Appends a sql statement to the list of sql statements to be executed

### 3. execute(self)

- a. Execute all sql statements that were appended to the list.

### 4. query(self, query)

- a. Executes a SQL query statement and returns the results as a list.

### *3.0 Testing*

1. Since dbconnection.py is used in conjunction with databaseUpload.py all testing is done with the tests for databaseUpload.py
  - a. See System and Unit Test Doc and the databaseUpload.py design document for more details.

### *4.0 Known Bugs*

1. None