

```

1  """
2      File that handles all connections with the Postgresql database.
3  """
4
5  import psycopg2
6  import json
7
8
9  class PostgresConnector:
10     def __init__(self, config_file):
11         """
12             Constructor for the class; creates connection with
13             information within the db.config
14             file.
15             """
16         self.__connection = None
17         self.db_name = 'student'
18         try:
19             self.config = json.load(open(config_file))
20         except:
21             self.config = None
22             print("error loading file " + config_file)
23
24         self.__create_connection()
25
26     def __create_connection(self):
27         """
28             (Private)
29             Creates database connection with data from db.config file.
30             Initially run when server starts.
31
32             Sets variable __connection to psycopg2 connection object to be
33             used when editing database.
34             """
35         if self.config:
36             try:
37                 # Attempts to create connection.
38                 conn = psycopg2.connect(
39                     'dbname=' + self.config['db'] + ' user=' + self.
40                     config['user'] + ' password=' + self.config[
41                     'password'] + ' host=' + self.config['host'] + '
42                     port=' + self.config['port'])
43                 conn.autocommit = True
44                 self.__connection = conn
45             except:
46                 print("Connection Error")
47
48     def query(self, sql_command, query_string):
49         """

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45         Method for querying the database. Accepts:
46
47         sql_command: String
48         query_string: String
49
50         :returns
51
52         A list of all matching results
53     """
54     cur = self.__connection.cursor()
55     # Query string is concatenated with sql command by Psycopg2 to
prevent
56     # SQL injection attacks.
57     cur.execute(sql_command, query_string)
58     return cur.fetchall()
59
60     def update(self, sql_command):
61         """
62         Method for updating the database. Accepts:
63
64         sql_command: String
65     """
66     cur = self.__connection.cursor()
67     cur.execute(sql_command)
68
69     def select(self, sql_command):
70         """
71         Method for selecting from the database. Accepts:
72
73         sql_command: String
74
75         :returns
76
77         A list of all matching results
78     """
79     cur = self.__connection.cursor()
80     cur.execute(sql_command)
81     return cur.fetchall()
82
83     def insert(self, sql_command, args):
84         """
85         Method for inserting items into the database. Accepts:
86
87         sql_command: String
88         args: (String)      (a tuple of strings)
89     """
90     cur = self.__connection.cursor()
91     cur.execute(sql_command, args)
92

```