Screencast 6-1

Using python to connect to a database

Library – psycopg2. https://github.com/psycopg/psycopg2

Database - cars

Task 0.

Basic example with connection and a loop over the returned record set.

```python
def function_with_sql():
    #Create a connection
    con = psycopg2.connect(database="cars", user="postgres", password="sql", host="localhost")
    # create a client-side cursor
    cur = con.cursor()
    # write a query and execute it
    cur.execute("select count(*) as all_count from res")
    # loop through the results
    for record in cur:
        # handle the result
        print(record[0]) # print the first column of the record
    con.close()
```

Task 1.

Return all cars from the database. The columns needed are cid, make and year.

```python
import psycopg2

def write_all_cars():
    con = psycopg2.connect(database="cars", user="postgres", password="sql", host="localhost")
    cur_default = con.cursor()
    cur_default.execute("select cid, make, year from car")
    for record in cur_default:
        print(record[0], record[1], record[2])
    con.close()

write_all_cars()
```

Task 2.

Write a function to find cars that were booked at least N times. Pass N through an argument "nbooked".

```python
def print_all_cars_n(nbooked:int):
    con = psycopg2.connect(database="cars", user="postgres", password="sql", host="localhost")
    cur_default = con.cursor()
    cur_default.execute("""select car.cid, year, make
        from car join res using(cid)
        group by car.cid, year, make
        having count(*)>=%s
        """, [nbooked])
    for record in cur_default:
        print(record[0], record[1], record[2])
    con.close()
```