DATABASE SYSTEMS AND CLOUD COMPUTING

1st Homework Assignment

Due on: November 6, 2024

In this homework, you work with the Employees database, and you are required to answer the following questions running the SQL statement in Python script the way we did in the class:

1. **Find the city of the employees in the IT department ..**

```
from mysql import connector

my_connection = connector.connect(
    host="localhost",
    user="root",
    password="Secret_123",
    database="employees"
)

my_cursor = my_connection.cursor()

"""
find the city of the employees in the IT department .
"""
my_cursor.execute("""
YOUR SELECT STATEMENT HERE
 """)

print("{:10} {:10} {:10}".format("Last Name", "Department", "city"),)
for row in my_cursor:
    print(f"{row[0]:40} {row[1]:40} {row[2]:<4}")
```

Sample output:

```
Last Name                                Department                               city

Hunold                                   Southlake                                IT
Ernst                                    Southlake                                IT
Austin                                   Southlake                                IT
Pataballa                                Southlake                                IT
Lorentz                                  Southlake                                IT
```

2. Find the number of employees in each city and order in descending order.

```
from mysql import connector

my_connection = connector.connect(
    host="localhost",
    user="root",
    password="Secret_123",
    database="employees"
)

my_cursor = my_connection.cursor()


my_cursor = my_connection.cursor()

"""
Find the number of employees in each city and order in descending order."""
my_cursor.execute("""
    !!!ENTER YOUR SQL STATEMENT HERE!!!
""")

print("{:24} {:16}".format("City ", "Number of Employees"))
for row in my_cursor:
    print(f"{row[0]:24} {row[1]:<16}")
```

Sample output:

```
City                     Number of Employees
Toronto                  2
Southlake                5
South San Francisco      45
Seattle                  18
OX9 9ZB                  34
Munich                   1
London                   1
```

3. Find the number of employees in each job title and order in descending order.

```
from mysql import connector

my_connection = connector.connect(
    host="localhost",
    user="root",
    password="Secret_123",
    database="employees"
)

my_cursor = my_connection.cursor()

"""
Find the number of employees in each job title and order in descending order.
"""
my_cursor.execute("""
    !!!ENTER YOUR SQL STATEMENT HERE!!!
""")

print("{:24} {:16} ".format("Job Title",
                            "Number employees"))
for row in my_cursor:
    print(f"{row[0]:24} {row[1]:<16} ")
```

Sample output:

```
Job Title                Number employees
Stock Manager            5
Stock Clerk              20
Shipping Clerk           20
Sales Representative     30
Sales Manager            5
Purchasing Manager       1
Purchasing Clerk         5
Public Relations Representative 1
Public Accountant        1
Programmer               5
President                1
Marketing Representative 1
Marketing Manager        1
Human Resources Representative 1
Finance Manager          1
Administration Vice President 2
Administration Assistant 1
Accounting Manager       1
Accountant               5
```

4. Find the employees in UK and CANADA only.

```
from mysql import connector

my_connection = connector.connect(
    host="localhost",
    user="root",
    password="Secret_123",
    database="employees"
)

my_cursor = my_connection.cursor()

"""
Find the employees in UK and CANADA only.
"""
my_cursor.execute("""
    !!!ENTER YOUR SQL STATEMENT HERE!!!
""")

print("{:32} {:4} {:100}".format("first name + Last Name", "City", "country"))
for row in my_cursor:
    print(f"{row[0]:32} {row[1]:4} {row[2]:<100}")
```

Sample output:

```
First name + Last Name           City       country
Michael Hartstein                Canada     Toronto
Pat Fay                          Canada     Toronto
Susan Mavris                     United Kingdom London
```

5. Find and average salary in every City.

```
from mysql import connector

my_connection = connector.connect(
    host="localhost",
    user="root",
    password="Secret_123",
    database="employees"
)

my_cursor = my_connection.cursor()

"""
5. Find and average salary in every City
"""
my_cursor.execute("""
    !!!ENTER YOUR SQL STATEMENT HERE!!!
""")

print("{:32} {:4}".format("City", "Average Salary"))
for row in my_cursor:
    print(f"{row[0]:32} {row[1]:<4}")
```

Sample output:

```
City                             Average Salary
London                           6500.00
Munich                           10000.00
OX9 9ZB                          8955.88
Seattle                          8844.44
South San Francisco              3475.56
Southlake                        5760.00
Toronto                          9500.00
```

IMPORTANT
Academic dishonesty, including but not limited to cheating, plagiarism, and collaboration, is unacceptable and subject to disciplinary action. Any student found guilty will have a grade of F. Assignments are due in class on the due date. Late assignments will generally not be accepted. Any exception must be approved. Approved late assignments are subject to a grade penalty.