Bilenkin540Weeks_11_&_12_Exercises

May 29, 2025

0.0.1 Activity 8.01: Retrieving Data Accurately from Databases, page 423

Importing the required library and connecting to the database:

[1]:
```
import sqlite3

# Connecting to the SQLite database
conn = sqlite3.connect(r"C:\Users\maxim\OneDrive\Desktop\BU\DSC 540\petsdb")
cursor = conn.cursor()
```

1. What is the count of people belonging to different age groups in the persons table?

[2]:
```
query = """
SELECT age, COUNT(*) AS count
FROM persons
GROUP BY age
ORDER BY age;
"""

cursor.execute(query)
results = cursor.fetchall()

# Displaying the results
for row in results:
    print(f"Age: {row[0]}, Count: {row[1]}")
```

```
Age: 5, Count: 2
Age: 6, Count: 1
Age: 7, Count: 1
Age: 8, Count: 3
Age: 9, Count: 1
Age: 11, Count: 2
Age: 12, Count: 3
Age: 13, Count: 1
Age: 14, Count: 4
Age: 16, Count: 2
Age: 17, Count: 2
Age: 18, Count: 3
Age: 19, Count: 1
Age: 22, Count: 3
```

```
Age: 23, Count: 2
Age: 24, Count: 3
Age: 25, Count: 2
Age: 27, Count: 1
Age: 30, Count: 1
Age: 31, Count: 3
Age: 32, Count: 1
Age: 33, Count: 1
Age: 34, Count: 2
Age: 35, Count: 3
Age: 36, Count: 3
Age: 37, Count: 1
Age: 39, Count: 2
Age: 40, Count: 1
Age: 42, Count: 1
Age: 44, Count: 2
Age: 48, Count: 2
Age: 49, Count: 1
Age: 50, Count: 1
Age: 51, Count: 2
Age: 52, Count: 2
Age: 53, Count: 2
Age: 54, Count: 2
Age: 58, Count: 1
Age: 59, Count: 1
Age: 60, Count: 1
Age: 61, Count: 1
Age: 62, Count: 2
Age: 63, Count: 1
Age: 65, Count: 2
Age: 66, Count: 2
Age: 67, Count: 1
Age: 68, Count: 3
Age: 69, Count: 1
Age: 70, Count: 1
Age: 71, Count: 4
Age: 72, Count: 1
Age: 73, Count: 5
Age: 74, Count: 3
```

2. Which age group has the maximum number of people?

[3]:
```
query = """
SELECT age, COUNT(*) AS count
FROM persons
GROUP BY age
ORDER BY count DESC
LIMIT 1;
```

```
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Age group with the maximum number of people: Age {result[0]}, Count:␣
 ↪{result[1]}")
```

```
Age group with the maximum number of people: Age 73, Count: 5
```

3. How many people do not have a last name?

[4]:
```
query = """
SELECT COUNT(*)
FROM persons
WHERE last_name IS NULL;
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Number of people without a last name: {result[0]}")
```

```
Number of people without a last name: 60
```

4. How many people have more than one pet?

[5]:
```
query = """
SELECT COUNT(*)
FROM (
    SELECT owner_id
    FROM pets
    GROUP BY owner_id
    HAVING COUNT(*) > 1
) AS multiple_pets;
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Number of people with more than one pet: {result[0]}")
```

```
Number of people with more than one pet: 43
```

5. How many pets have received treatment?

[6]:
```
query = """
SELECT COUNT(*)
FROM pets
WHERE treatment_done = 1;
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Number of pets that have received treatment: {result[0]}")
```

```
Number of pets that have received treatment: 36
```

6. How many pets have received treatment, and the type of pet is known?

[7]:
```
query = """
SELECT COUNT(*)
FROM pets
WHERE treatment_done = 1
  AND pet_type IS NOT NULL;
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Number of pets with known type who received treatment: {result[0]}")
```

```
Number of pets with known type who received treatment: 16
```

7. How many pets are from the city called east port?

[8]:
```
query = """
SELECT COUNT(*)
FROM pets p
JOIN persons pe ON p.owner_id = pe.id
WHERE LOWER(pe.city) = 'east port';
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Number of pets whose owners are from the city 'east port': {result[0]}")
```

```
Number of pets whose owners are from the city 'east port': 49
```

8. How many pets are from the city called east port, and who received treatment?

[9]:
```
query = """
SELECT COUNT(*)
FROM pets p
JOIN persons pe ON p.owner_id = pe.id
WHERE LOWER(pe.city) = 'east port'
  AND p.treatment_done = 1;
"""

cursor.execute(query)
result = cursor.fetchone()

# Displaying the results
print(f"Number of pets from East Port who received treatment: {result[0]}")
```

```
Number of pets from East Port who received treatment: 11
```