

# L10 - Graph Databases

|                            |           |              |                               |                 |
|----------------------------|-----------|--------------|-------------------------------|-----------------|
| Due Apr 22 at 11:59pm      | Points 40 | Questions 10 | Available after Apr 21 at 9am | Time Limit None |
| Allowed Attempts Unlimited |           |              |                               |                 |

## Instructions

For this lab we will be experimenting with some of the basic operations of a graph database. You will be using a small dataset built into Neo4j distributions.

Before starting the lab, you will need to pre-load the dataset by running the:

```
:play movie-graph
```

This will take you through a set of instructions for creating the movie graph database.

Take the Quiz Again

## Attempt History

|        | Attempt                   | Time          | Score        |
|--------|---------------------------|---------------|--------------|
| LATEST | <a href="#">Attempt 1</a> | 1,631 minutes | 33 out of 40 |

⚠️ Correct answers are hidden.

Score for this attempt: **33** out of 40  
Submitted Apr 22 at 12:22pm  
This attempt took 1,631 minutes.

Question 1

2 / 4 pts

Please create the movie database graph included with neo4j. You can use the in-browser tool OR copy and paste the commands from the uploaded file on Canvas.

**Please upload a screenshot of a full matching query that shows the full graph.**

⬇️ [Lab10-1.png \(https://cilearn.csuci.edu/files/2828890/download\)](https://cilearn.csuci.edu/files/2828890/download)


this is missing the query and does not show the full graph


Question 2


4 / 4 pts


Please update all of your nodes to add your name as a "nodeOwner" property and the update date as "dateUpdated".

\$ match (n) return n

Graph

Table

Text

Code

n

```
{
  "tagline": "Welcome to the Real
World",
  "nodeOwner": "Eric Kaltman",
  "title": "The Matrix",
  "released": 1999,
  "dateUpdated": "2021-04-16"
}
```

```
{
  "name": "Keanu Reeves",
  "nodeOwner": "Eric Kaltman",
  "born": 1964,
  "dateUpdated": "2021-04-16"
}
```

**Please upload a screenshot of your update query and its results.**

[↓ Lab10-2.JPG \(https://cilearn.csuci.edu/files/2828889/download\)](https://cilearn.csuci.edu/files/2828889/download)

### Question 3

2 / 3 pts

Create a new movie nodes based on the following information:

1. "Citizen Kane" released in 1941 with the tagline "The classic story of power and the press".
2. "Mad Max: Fury Road" released in 2015 with the tagline "Only the mad survive."
3. "Gravity" released in 2013 with the tagline "Don't let go."

Please also update your new nodes with your name and updated date. Tag your nodes with a new tag.

**Please upload a screenshot of a query for your new tag that shows your new nodes.**

↓ [Lab10\\_3.pdf \(https://cilearn.csuci.edu/files/2828888/download\)](https://cilearn.csuci.edu/files/2828888/download)

This isn't a search by a new tag

#### Question 4

2 / 3 pts

Create new person nodes based on the following information:

1. Actor Tom Hardy born in 1977.
2. Actress Zoe Kravitz born in 1988.
3. Director George Miller born in 1945.
4. Critic Roger Ebert born in 1942.
5. Actor Orson Welles born in 1915.
6. Actress Sandra Bullock born in 1964.

Please also update your new nodes with your name and updated date. Tag your nodes with a new tag.

**Please upload a screenshot of a query for your new tag that shows your new nodes.**

↓ [Lab10\\_4.pdf \(https://cilearn.csuci.edu/files/2828882/download\)](https://cilearn.csuci.edu/files/2828882/download)

same as last comment

#### Question 5

3 / 4 pts

Create new relationships based on the following information (remember that relationships also have properties):

1. Actor Tom Hardy played the role of "Max Rockatansky" in "Mad Max: Fury Road".
2. Actress Zoe Kravitz played the role of "Toast the Knowing" in "Mad Max: Fury Road".
3. Director George Miller both wrote and directed "Mad Max: Fury Road".
4. Critic Roger Ebert reviewed "Citizen Kane" with a rating of 100, summarized as "The movie is filled with bravura visual moments."
5. Actor Orson Welles played the role of "Kane" in "Citizen Kane".
6. Actress Sandra Bullock played the role of "Ryan Stone" in "Gravity".
7. Actress Charlize Theron played the role of "Imperator Furiosa" in "Mad Max: Fury Road".

Please also update your new nodes with your name and updated date. Tag your nodes with a new tag.

**Please upload a screenshot of a query for your new tag that shows your new relationships.**

↓ [Lab10-5.JPG \(https://cilearn.csuci.edu/files/2828878/download\)](https://cilearn.csuci.edu/files/2828878/download)

#### Question 6

2 / 3 pts

Write a query that retrieves a graph showing the movies that Charlize Theron has acted in with other actors. The graph should include the other actors and the relationships.

**Please upload a screenshot of your query and the graph it created.**

↓ [Lab10-6.JPG \(https://cilearn.csuci.edu/files/2828877/download\)](https://cilearn.csuci.edu/files/2828877/download)

missing mad max

### Question 7

3 / 3 pts

Please write a query that returns the average rating of all the reviews in the database.

**Please upload a screenshot of your query and its result.**

↓ [Lab10-7.JPG \(https://cilearn.csuci.edu/files/2828876/download\)](https://cilearn.csuci.edu/files/2828876/download)

### Question 8

3 / 3 pts

The neo4j system includes many built-in graph traversal algorithms, one useful one in our context is `shortestPath` that will find the shortest number of network hops connecting two nodes. For example, the "classic" six-degrees of Kevin Bacon query can be approximated as:

```
MATCH p=shortestPath(
  (bacon:Person {name: "Kevin Bacon"})-[*]-(meg:Person {name:"Meg Ryan"})
) return p
```

For this question, please find the shortest path between the film "Speed Racer" and actress Carrie Fisher.

**Please upload your modified shortest path query and the result below.**

↓ [Lab10-8.JPG \(https://cilearn.csuci.edu/files/2828875/download\)](https://cilearn.csuci.edu/files/2828875/download)

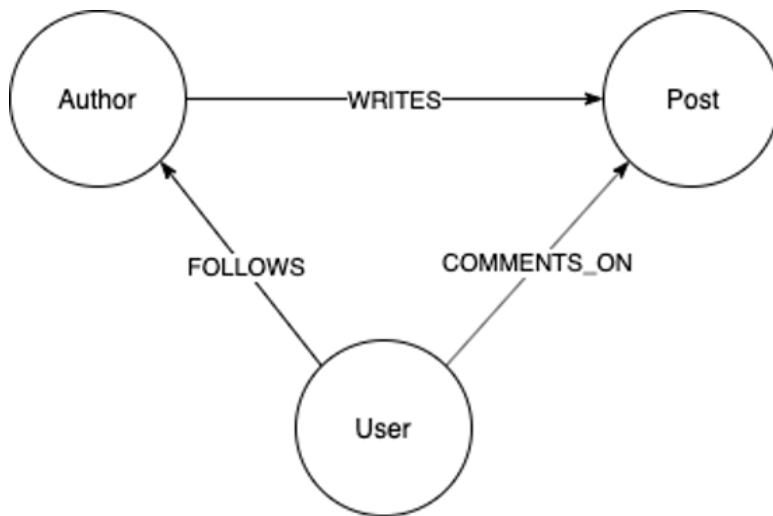
### Question 9

9 / 10 pts

Look at the above graph and convert it into a MySQL database. Note the direction of the relationships as well as the nature of the connection. Some helpful hints:

1. A post only has a single author, so it probably doesn't need an associative entity
2. A user can follow many authors.
3. A user can comment on many different posts, and many times on the same post.

**Please paste your MySQL DDL commands in the window below.**



Your Answer:

use lab10;

```

CREATE TABLE AUTHOR(
  Author_ID INT AUTO_INCREMENT,
  Author_name VARCHAR(25),
  Author_dob VARCHAR(25),
  PRIMARY KEY (Author_ID)
);

```

```

CREATE TABLE USER(
  User_ID INT AUTO_INCREMENT,
  User_name VARCHAR(25),
  User_password VARCHAR(25),
  PRIMARY KEY (User_ID)
);

```

```

CREATE TABLE FOLLOW(
  User_ID INT NOT NULL,
  Author_ID INT NOT NULL,
  PRIMARY KEY(User_ID, Author_ID),
  FOREIGN KEY(Author_ID) REFERENCES AUTHOR(Author_ID),
  FOREIGN KEY(User_ID) REFERENCES USER(User_ID)
);

```

```

CREATE TABLE POST(
  Post_ID INT AUTO_INCREMENT,
  Post VARCHAR(255),
  Post_date date,
  Author_ID INT NOT NULL,
  PRIMARY KEY (Post_ID),
  FOREIGN KEY(Author_ID) REFERENCES AUTHOR(Author_ID)
);

```

```

CREATE TABLE COMMENT(
  Comment_ID INT AUTO_INCREMENT,
  Post_ID INT NOT NULL,
  User_ID INT NOT NULL,
  PRIMARY KEY(Comment_ID),
  FOREIGN KEY(Post_ID) REFERENCES POST(Post_ID),
  FOREIGN KEY(User_ID) REFERENCES USER(User_ID)
);

```

**Question 10****3 / 3 pts**

*Please upload a reverse engineered image of the database you created.*

↓ [Lab10-10.png \(https://cilearn.csuci.edu/files/2828873/download\)](https://cilearn.csuci.edu/files/2828873/download)

Quiz Score: **33** out of 40