**Write the Cypher queries in Neo4j desktop for the questions below using the sample movie database (12.5 pts each).**

1. Who are the 5 busiest actors?

MATCH (a:Person)-[:ACTED\_IN]->(m:Movie)

RETURN a.name AS actor, COUNT(m) AS movie\_count

ORDER BY movie\_count DESC

LIMIT 5

1. Recommend 3 actors that "Keanu Reeves" should work with but has not.

MATCH (keanu:Person {name: "Keanu Reeves"})-[:ACTED\_IN]->(m:Movie)<-[:ACTED\_IN]-(coactor:Person)

MATCH (coactor)-[:ACTED\_IN]->(otherMovie:Movie)<-[:ACTED\_IN]-(recommended:Person)

WHERE NOT (keanu)-[:ACTED\_IN]->()<-[:ACTED\_IN]-(recommended) AND keanu <> recommended

RETURN DISTINCT recommended.name AS recommended\_actor

LIMIT 3

1. Change Kevin Bacon's roles in Apollo 13 from "Jack Swigert" to "Jack.

MATCH (a:Person {name: "Kevin Bacon"})-[r:ACTED\_IN]->(m:Movie {title: "Apollo 13"})

SET r.roles = ["Jack"]

1. Add "Ron Howard" as the Director of "Apollo 13".

MATCH (m:Movie {title: "Apollo 13"})

MERGE (d:Person {name: "Ron Howard"})

MERGE (d)-[:DIRECTED]->(m)

1. List all the characters in the movie "The Matrix".

MATCH (a:Person)-[r:ACTED\_IN]->(m:Movie {title: "The Matrix"})

RETURN a.name AS actor, r.roles AS roles

1. Add KNOWS relationships between all actors who were in the same movie.

MATCH (a1:Person)-[:ACTED\_IN]->(m:Movie)<-[:ACTED\_IN]-(a2:Person)

WHERE a1 <> a2

MERGE (a1)-[:KNOWS]-(a2)

1. Return friends-of-friends of "Keanu Reeves" who are not immediate friends.

MATCH (keanu:Person {name: 'Keanu Reeves'})-[:KNOWS]->(friend)-[:KNOWS]->(fof)

WHERE NOT (keanu)-[:KNOWS]-(fof)

AND NOT (fof)-[:KNOWS]-(:Person)-[:KNOWS]-(keanu)

AND NOT EXISTS {

MATCH (fof)-[:KNOWS]-(otherFoF)

WHERE otherFoF <> fof AND NOT (keanu)-[:KNOWS]-(otherFoF)

}

RETURN DISTINCT fof.name AS FriendOfFriendName, collect(DISTINCT friend.name) AS MutualFriendNames

1. Return the names or graph of people who can introduce "Charlize Theron" to "Kevin Bacon".

MATCH (charlize:Person {name: 'Charlize Theron'})-[:KNOWS]-(introducer)-[:KNOWS]-(kevin:Person {name: 'Kevin Bacon'})

RETURN introducer.name AS Introducer, charlize, introducer, kevin