CentraleSupélec

Saclay Campus, Computer Science Department, 2019-2020

Models and Systems for Big Data Management
Some questions without documents - 20 minutes

Family Name:

First Name:

Circle the correct answer(s). Entourer la ou les bonne(s) réponse(s)

(1) Which of the following queries return only the titles of the movies in which Harrison Ford acted in?

Quelles sont les requêtes qui retournent seulement les titres des films dans lesquels Harrison Ford a joué?

A. MATCH (n {name:"Harrison Ford"})-[:actedIn]->(m:Movie) RETURN m.title
B. MATCH (n {name:"Harrison Ford"})-[:actedIn]->(m:Movie) RETURN m
C. MATCH (n {name:"Harrison Ford"})-[]-(m:Movie) RETURN m.title
D. MATCH (n {name:"Harrison Ford"})-[:actedIn]->(m) RETURN n, m
E. None of the above Aucune des réponses

(2) What does the following query return?

Que retourne la requête suivante?

MATCH (m:Movie)<-[:actedIn]-(p:Person) return m, COUNT(*)

A. the number of movies
le nombre de films
B. the number of persons who acted in each movie
le nombre de personnes ayant joué dans chaque film
C. the number of movies where each person acted in
le nombre de films où chaque personne a joué
D. None of the above Aucune des réponses

(3) Which of the following queries return the name of 5 actors who acted in the most of movies ?

Quelles sont parmi les requêtes suivantes celles qui retournent les noms des 5 acteurs qui ont joué dans le plus de films?

A. MATCH (a:Actor)-[:actedIn]->(n:Movie)-[:hasGenre]->(g:Genre) RETURN a.name, count(a) AS nbMovies ORDER BY nbMovies DESC LIMIT 5;
B. MATCH (n:Movie)<-[]-(a) RETURN a.name, count(a) AS nbMovies ORDER BY nbMovies DESC LIMIT 5;
C. MATCH (n:Movie)<-[:actedIn]-(a:Actor) RETURN a.name, count(n) AS nbMovies ORDER BY nbMovies DESC LIMIT 5;

D. None of the above. Aucune des réponses.

(4) Knowing that the graph database contains the following 5 nodes

Sachant que la base de données graphe contient les 5 nœuds suivants

```
(:Person{name:'Dupont', bornIn:'Paris'}),  (:Person{bornIn:'Paris'}),
(:Person{bornIn:'New York'}),  (:Person),  (:City{name:'Paris'}
```

Which nodes the following Cypher query creates :

Quels nœuds la requête Cypher suivante crée :

```
MATCH (p:Person) MERGE (c:City{name:p.bornIn} REURN c
```

A. 3 nodes. 3 nœuds.
```
(:City{name:'Paris'}), (:City{name:'Paris'}), (:City{name:'New York'})
```

B. 4 nodes. 4 nœuds.
```
(:City{name:'Paris'}), (:City{name:'Paris'}), (:City{name:'New York'}), (:City)
```

C. 1 node. 1 nœud.
```
(:City{name:'New York'})
```

D. 2 nodes. 2 nœuds.
```
(:City{name:'New York'}), (:City)
```

**C is considered to be correct (in theory)
But neo4j doesn't merge using null property value for name (because of (Person:) node.
So E is correct**

E. None of the answers. Aucune des réponses.

(5) Which of Cypher queries are equivalent to the following one:

Quelles sont parmi les requêtes Cypher celles qui sont équivalentes à la requête suivante :

```
MATCH (n {name: 'John'})-[:FRIEND]-(friend) WITH n, count(friend) as f
WHERE f > 3 RETURN n, f
```

A.
```
MATCH (n {name: 'John'})-[:FRIEND]-(friend)
RETURN n, count(friend)
```

B.
```
MATCH (n {name: 'John'})-[:FRIEND]-(friend)
RETURN n, count(friend) as f ORDER BY f desc, LIMIT 3
```

C.
```
MATCH (n)-[:FRIEND]-(friend)
WHERE n.name= 'John'  WITH n, count(friend) as f
WHERE f > 3 RETURN n, f
```

D.
```
MATCH (n)-[:FRIEND]-(friend)
WITH n, count(friend) as f
WHERE f > 3 and n.name= 'John' RETURN n, f
```

(6) What does the following query return?

Que retourne la requête suivante?

```
MATCH (m:Movie)<-[:RATED]-(u:User)
WITH  m, count(u) as nbRates
MATCH (m)<-[r:RATED]-(:User) WHERE nbRates >= 100
RETURN m.title, avg(r.rating) as avgRate order by avgRate desc LIMIT 5;
```

A. At most 100 movies that obtained the highest average ratings and that have been rated at least 5 times

Au plus 100 films ayant les scores moyens les plus élevés et qui ont été noté au moins 5 fois

B. At most 5 movies that obtained the highest average ratings and that have been rated at least 100 times

Au plus 5 films ayant les scores moyens les plus élevés et qui ont été noté au moins 100 fois

C. At most 5 movies that obtained the best average rating and that have been rated by at least 100 users

Au plus 5 films ayant le meilleur score moyen et qui ont été noté par au moins 100 utilisateurs

D. At most 5 movies that have been rated by at least 100 users

Au plus 5 films ayant été noté par au moins 100 utilisateurs

E. None of the above. Aucune des réponses.