**Cypher Exam**

**Basic Commands**

Match (n) return n : Return the entire graph

match (n)-[:relationship]->() return n : Return all nodes with a specific relationship

MATCH (n)-[:relationship]->() WHERE n.property > x RETURN n :

Return all nodes with a certain relationship where node property is greater than x

MATCH (n) WHERE ID(n)=0 Return n : Return first node

MATCH (n) Return n ORDER BY ID(n) DESC LIMIT 1 : Return last node

**More Complex Commands**

MATCH (n)-[:ACTED\_IN]->(movie)<-[:DIRECTED]-(m) WHERE m.name="Nora Ephron" RETURN n : What actors appeared in movies directed by Nora Ephron?

MATCH (n:Person)-[r:ACTED\_IN]->(m:Movie) RETURN n.name, count(r) ORDER BY count(r) DESC limit 1 : Which actor has appeared in most movies?

MATCH (n:Person)-[r]->(m:Movie) RETURN n.name,type(r),m.title ORDER BY n.name :

Return all Persons and their relationship with different movies

MATCH (n{agent: "Ari Gold"}) RETURN n :

Return all persons who have (put your agent name here) as their agent

MATCH (n:Person) RETURN n ORDER BY n.born LIMIT 1 :

Who is the oldest actor in the database?

MATCH ()-[r]-(n:Movie) RETURN n.title, count(r) ORDER BY count(r) DESC LIMIT 1 :

Which movies has most Person relationships?

MATCH (n:Person)-[r]-() WITH n, count(distinct type(r)) AS a WHERE a >1 RETURN n.name,a :

List all persons with more than type of distinct relationships

**Updating the Database**

MATCH (n:Person) SET n.Qualification = "none" RETURN n :

Adding a qualification property to a database

MATCH (cww:Movie {title: "Charlie Wilson's War"})<-[:ACTED\_IN]-(actor)

SET actor.Qualification = "Diploma in Acting Studies" RETURN actor.name, actor.Qualification:

Setting the value of the Qualification property

MATCH (n:Movie) SET n.Rating = 5 RETURN \* :

Giving all movies a rating value of 5

Editing the Structure(Complex)

MERGE (m:Movie{title:"Prometheus", released:"2012"})

MERGE(d:Person{name:"Ridley Scott", born:"1937"})

MERGE(a1:Person{name:"Noomi Rapace",born:"1979"})

MERGE(a2:Person{name:"Michael Fassbender",born:"1977"})

MERGE(a3:Person{name:"Charlize Theron",born:"1975"})

MERGE(a4:Person{name:"Idris Elba",born:"1972"})

CREATE

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

(a1)-[:ACTED\_IN{roles:"Elizabeth Shaw"}]->(m),

(a2)-[:ACTED\_IN{roles:"David"}]->(m),

(a3)-[:ACTED\_IN{roles:"Meredith Vickers"}]->(m),

(a4)-[:ACTED\_IN{roles:"Janek"}]->(m)

Add Prometheus to your database

Add the top 4 actors listed on the IMDB page

Add the director

\*\*Use Merge so as not to duplicate nodes\*\*

**Mock Exam**

How many characters did Drogo interact with?

match (a:Character {name: "Drogo"}), (b:Character)

where (a)-[:INTERACTS]-(b)

return count( b)

Did Khal Drogo interact with Robert Baratheon?

match (a:Character {name: "Robert-Baratheon"}), (b:Character)

where (a)-[:INTERACTS]-(b)

return a, b

List all the Starks with whom Robert Baratheon interacted?

match (a:Character {name: "Robert-Baratheon"}), (b:Character)

where (a)-[:INTERACTS]-(b)

AND b.name CONTAINS "Stark"

return b

What characters have the top-10 interactions in season 1?

MATCH (char :Character)-[r:INTERACTS]-()

return distinct char.name, count(DISTINCT r) as count order by count desc limit 10

How many characters have more than 50 interactions in season 2?

MATCH (char:Character)-[r:INTERACTS|INTERACTS1|INTEREACTS2]-()

with char, count( distinct r) as count

where count > 50

return count(distinct char)

What character has the most interaction with the Targaryens (any Targaryen) in season 2?

MATCH (tar:Character )-[r:INTERACTS|INTERACTS1|INTEREACTS2]-(intereacts)

where tar.name contains "Targaryen"

return distinct intereacts.name, count(r) as count order by count(r) desc limit 1

What is the shortest path from Arya-Stark to Daenerys-Targaryen?

MATCH (a:Character {name: "Arya-Stark"}), (b:Character {name: "Daenerys-Targaryen"}) MATCH p=allShortestPaths((a)-[:INTERACTS\*]-(b))

RETURN p

Add gender to all Stark characters. Use ‘female’ where you are unsure of the character’s gender

MATCH (c:Character)

WHERE c.name IN ["Arya-Stark", "Catelyn-Stark", "Lyanna-Stark", "Sansa-Stark", "Torrhen-Stark"]

SET c.gender = "Female"

MATCH (c:Character)

WHERE c.name IN ["Benjen-Stark", "Bran-Stark", "Brandon-Stark", "Eddard-Stark", "Rickard-Stark", "Rickon-Stark", "Robb-Stark"]

SET c.gender = "Male"

Which Stark gender had most interaction with the Lannisters?

MATCH (stark:Character)-[r:INTERACTS]-(lan:Character)

where stark.name contains "Stark" and lan.name contains "Lannister"

and stark.gender = "female"

with count( distinct r) as femalecount

return femalecount

MATCH (stark:Character)-[r:INTERACTS]-(lan:Character)

where stark.name contains "Stark" and lan.name contains "Lannister"

and stark.gender = "male"

with count( distinct r) as malecount

return malecount

Is the Night King in the Graph?

MATCH (night:Character {name:"Night-King"})

return night