

1. Schema Queries

a.) Find all the unique node labels in the graph and their properties.

MATCH (p) RETURN distinct labels(p) as Labels, keys(p) as Properties

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$ MATCH (p) RETURN distinct labels(p) as Labels, keys(p) as Properties
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\$ MATCH (p) RETURN distinct labels(p) as Labels, keys(p) as Properties		
	Labels	Properties
Rows	[Match]	[description, attendance, date, number, id, h_score, a_score]
Text	[Match]	[number, attendance, date, description, id, h_score, a_score]
	[Match]	[description, date, number, id, h_score, a_score, attendance]
	[Match]	[number, date, description, id, h_score, a_score, attendance]
Code	[Country]	[name]
	[Year]	[year]
	[WorldCup]	[name, year]
	[WorldCup]	[year, name]
	[Stadium]	[name]
	[Phase]	[name]
	[Time]	[time]
	[Squad]	[name]
	[Player]	[id, name]
	[Player]	[name, id]
	[]	[]
	[Goal]	[time, type]
	Started streaming 17 records after 0 ms and completed after 388 ms.	

b.) Find all distinct relationship types that exist in the graph and the labels of the two (i.e. start and end) nodes that each of the relationship connects.

MATCH (a)-[rel]-(b) return distinct type(rel) as Relation, labels(a) as Start, labels(b) as End

\$ MATCH (a)-[rel]-(b) return distinct type(rel) as Relation, labels(a) as Start, labels(b) as End			
	Relation	Start	End
Rows	HOME_TEAM	[Country]	[Match]
Text	PLAYED_IN	[Country]	[Match]
	AWAY_TEAM	[Country]	[Match]
	CONTAINS_MATCH	[WorldCup]	[Match]
Code	PLAYED_IN_STADIUM	[Stadium]	[Match]
	IN_PHASE	[Phase]	[Match]
	PLAYED_AT_TIME	[Time]	[Match]
	IN_MATCH	[]	[Match]
	NAMED_SQUAD	[Squad]	[Country]
	HOSTED_BY	[WorldCup]	[Country]
	PLAYED_IN	[Match]	[Country]
	AWAY_TEAM	[Match]	[Country]
	HOME_TEAM	[Match]	[Country]
	IN_YEAR	[WorldCup]	[Year]
	CONTAINS_MATCH	[Match]	[WorldCup]
	HOSTED BY	[Country]	[WorldCup]
	Started streaming 35 records after 1 ms and completed after 1448 ms.		

- c.) Show the schema of the dataset. How many incoming and outgoing relationships does the "Country" node have?
- Call `db.schema()`
 - `MATCH ()-[in]->(x:Country), (x:Country)-[out]->>() return (count(distinct type(in))+count(distinct type(out))) as InOutRel`

\$ Call db.schema()

nodes	relationships
[[(empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty), (empty)]
<div> indexes [stadium] name Stadium constraints [] </div>	
,	
<div> indexes [name, id] name Player constraints [] </div>	
,	
<div> indexes [] name Goal </div>	

Started streaming 1 record after 8 ms and completed after 8 ms.

\$ MATCH ()-[in]->(x:Country), (x:Country)-[out]->>() return (count(distinct typ...

InOutRel
5

Started streaming 1 record after 222 ms and completed after 222 ms.

2. Data Queries

- a.) How many penalty goals Gabriel Batistuta scored in WorldCups?

Match (p:Player) -[:SCORED_GOAL]-(g:Goal)

Where p.name= "Gabriel Batistuta" AND g.type = "penalty"

Return p.name as PlayerName, count(*) as PenaltyScored

\$ Match (p:Player) -[:SCORED_GOAL]-(g:Goal) Where p.name= "Gabriel Batistuta"...

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Rows

Text

Code

PlayerName

PenaltyScored

Gabriel Batistuta

4

Started streaming 1 record after 33 ms and completed after 33 ms.

- b.) Which players were teammates of Ronaldo in WorldCups (i.e. played in the same squad as him) and in which years?

Match (a:Player)-[:IN_SQUAD]→(team:Squad)<-[:IN_SQUAD]-(b:Player), (team:Squad)-[:FOR_WORLD_CUP]→(time:WorldCup)

Where a.name = "Ronaldo"

Return a.name AS TheGoat, b.name AS TeamMates, time.name as WorldCup, time.year as Year

\$ Match (a:Player)-[:IN_SQUAD]->(team:Squad)<-[:IN_SQUAD]-(b:Player), (team:S...

<div> <div> <div></div> <div>Rows</div> </div> <div> <div>A</div> <div>Text</div> </div> <div> <div></></div> <div>Code</div> </div> </div>	TheGoat	TeamMates	WorldCup	Year
	Ronaldo	Julio Cesar	2006 FIFA World Cup Germany™	2006
	Ronaldo	Robinho	2006 FIFA World Cup Germany™	2006
	Ronaldo	Ricardinho	2006 FIFA World Cup Germany™	2006
	Ronaldo	Fred	2006 FIFA World Cup Germany™	2006
	Ronaldo	Mineiro	2006 FIFA World Cup Germany™	2006
	Ronaldo	Juninho Pernambucano	2006 FIFA World Cup Germany™	2006
	Ronaldo	Gilberto Melo	2006 FIFA World Cup Germany™	2006
	Ronaldo	Gilberto Silva	2006 FIFA World Cup Germany™	2006
	Ronaldo	Dida	2006 FIFA World Cup Germany™	2006
	Ronaldo	Lucio	2006 FIFA World Cup Germany™	2006
	Ronaldo	Cafu	2006 FIFA World Cup Germany™	2006
	Ronaldo	Emerson	2006 FIFA World Cup Germany™	2006
	Ronaldo	Juan	2006 FIFA World Cup Germany™	2006
	Ronaldo	Adriano	2006 FIFA World Cup Germany™	2006
	Ronaldo	Roberto Carlos	2006 FIFA World Cup Germany™	2006
	Ronaldo	Kaka	2006 FIFA World Cup Germany™	2006

Started streaming 86 records after 1 ms and completed after 2 ms.

- c.) Find all the stadiums in which Brazil played against England. Also show the dates of these matches.

Match (team1:Country)-[:PLAYED_IN]->(x:Match)<-[:PLAYED_IN]-(team2:Country),
(x:Match)-[:PLAYED_IN_STADIUM]->(loc:Stadium)

Where team1.name="Brazil" AND team2.name="England"

Return team1.name as Team1, team2.name as Team2, x.date as MatchDate, loc.name as Stadium

\$ Match (team1:Country)-[:PLAYED_IN]->(x:Match)<-[:PLAYED_IN]-(team2:Country),...														
	Team1	Team2	MatchDate	Stadium										
Rows	Brazil	England	07 June 1970	Guadalajara / Jalisco										
	Brazil	England	11 June 1958	Gothenburg / Nya Ullevi										
	Brazil	England	10 June 1962	Vina Del Mar / Estadio Sausalito										
	Brazil	England	21 June 2002	Shizuoka / Shizuoka Stadium Ecopa										
Code														
Started streaming 4 records after 1 ms and completed after 3 ms.														

- d.) Find the teams that were in the "Final" phase of the WorldCups in ascending order based on the WorldCups name. The results should have the following titles: Home team, Away Team, WorldCup name.

Match (x:Match)-[IN_PHASE] → (stage:Phase),(team2:Country)<-[AWAY_TEAM]-(x:Match)-
[HOME_TEAM]->(team1:Country), (x:Match) ← [CONTAINS_MATCH]-
(WorldCup:WorldCup)

Where stage.name="Final"

Return team1.name as HomeTeam ,team2.name as AwayTeam,WorldCup.name as
WorldCupName

Order By WorldCup.name ASC

\$ Match (x:Match)-[IN_PHASE]->(stage:Phase),(team2:Country)<-[AWAY_TEAM]-(x:Ma...

	HomeTeam	AwayTeam	WorldCupName
Rows	Uruguay	Argentina	1930 FIFA World Cup Uruguay ™
Text	Argentina	Uruguay	1930 FIFA World Cup Uruguay ™
	Czechoslovakia	Italy	1934 FIFA World Cup Italy ™
Code	Italy	Czechoslovakia	1934 FIFA World Cup Italy ™
	Italy	Hungary	1938 FIFA World Cup France ™
	Hungary	Italy	1938 FIFA World Cup France ™
	Germany FR	Hungary	1954 FIFA World Cup Switzerland ™
	Hungary	Germany FR	1954 FIFA World Cup Switzerland ™
	Brazil	Sweden	1958 FIFA World Cup Sweden ™
	Sweden	Brazil	1958 FIFA World Cup Sweden ™
	Brazil	Czechoslovakia	1962 FIFA World Cup Chile ™
	Czechoslovakia	Brazil	1962 FIFA World Cup Chile ™
	England	Germany FR	1966 FIFA World Cup England ™
	Germany FR	England	1966 FIFA World Cup England ™
	Brazil	Italy	1970 FIFA World Cup Mexico ™
	Italy	Brazil	1970 FIFA World Cup Mexico ™
	Started streaming 36 records after 3 ms and completed after 3 ms.		

- e.) Find the 5 players that scored the most goals in all WorldCups. Tip: You should consider the both goal types: penalty and goal.?

Match (p:Player)-[:SCORED_GOAL]-(g:Goal)
 Return p.name as Player, count(g.type) as ScoredGoals
 Order By ScoredGoals desc limit 5

\$ Match (p:Player)-[:SCORED_GOAL]-(g:Goal) Return p.name as Player, count(g.ty...

	Player	ScoredGoals
Rows	Ronaldo	15
Text	Gerd Mueller	14
	Just Fontaine	13
Code	Miroslav Klose	13
	Pelé	12
	Started streaming 5 records after 161 ms and completed after 161 ms.	

- f.) Which WorldCup (i.e. year) had the most goals scored and how many?

Match (p:Player)-[:IN_SQUAD] → (:Squad)-[FOR_WORLD_CUP] → (WorldCup:WorldCup),
 (p:Player)-[:SCORED_GOAL]->(g:Goal)
 Return WorldCup.name as WorldCup, count(g.type) as NoOfGoals
 Order By NoOfGoals desc limit 1

\$ Match (p:Player)-[:IN_SQUAD]->(:Squad)-[FOR_WORLD_CUP]->(WorldCup:WorldCup),...

WorldCup	NoOfGoals
2002 FIFA World Cup Korea/Japan™	336

Started streaming 1 record after 143 ms and completed after 143 ms.

Tip: Properties are of type string. To add two numeric properties convert each into int using toInt()

- g.) Find the players who played for two or more different countries in different WorldCups.
 Match (a:Player)-[:IN_SQUAD] → (:Squad)<-[:NAMED_SQUAD]-(team1:Country),(b:Player)-[:IN_SQUAD]->(:Squad)<-[:NAMED_SQUAD]-(team2:Country)
 Where a.name=b.name and team1.name<>team2.name
 Return distinct a.name as Players

\$ Match (a:Player)-[:IN_SQUAD]->(:Squad)<-[:NAMED_SQUAD]-(team1:Country),(b:Pl...

Players
Luis Suarez
Ruben Sosa
Mario Mendez
Jose Santamaria
Jean Petit
Jorge Campos
Luis Garcia
Luis Regueiro
Miguel Gutierrez
Jose Navarro
Francisco Hernandez
Hugo Perez
Alberto Gonzalez
Atilio Demaria
Luis Monti
Andreas Koepke

Started streaming 60 records after 1 ms and completed after 576 ms.