PROBLEM 1

create (Berlin:Place{city:'Berlin',country:'DE'}),

(London:Place{city:'London',country:'UK'}),

(Rosa:Person{name:'Rosa',gender : 'f'}),

(Karl:Person{name:'Karl',age:64}),

(Fred:Person{name:'Fred'}),

(Rosa)-[:LIVES\_IN{since:2020}]->(Berlin),

(Rosa)-[:FRIEND]->(Karl),

(Karl)-[:FRIEND]->(Rosa),

(Karl)-[:LIVES\_IN{since:1980}]->(London),

(Fred)-[:LIVES\_IN]->(London),

(Fred)-[:FRIEND]->(Karl),

(Karl)-[:FRIEND]->(Fred)

**Delete all nodes**

match (n) detach delete n

1. Match (Rosa:Person)

where Rosa.name = 'Rosa'

set Rosa.dob = '2004-03-04'

1. Match (p:Person)-[LIVES\_IN]-(k:Place{city:'Berlin'})

return p.name

1. Match (p:Person{name:'Rosa'})-[:FRIEND]->(p2:Person)

Match (p2)-[:FRIEND]->(p3:Person)

where not p3.name= 'Rosa'

return p3.name

(or)

Match (p:Person{name:'Rosa'})-[:FRIEND]->(p2:Person)

Match (p2)-[:FRIEND]->(p3:Person)

where p3.name<> 'Rosa'

return p3.name

1. MATCH (p:Person)

WHERE p.name STARTS WITH 'Ka'

RETURN p.name

MATCH (p:Person)

WHERE p.name CONTAINS 'os'

RETURN p.name

MATCH (p:Person)

WHERE p.name ENDS WITH 'd'

RETURN p.name

1. Match (p:Person)-[LIVES\_IN]->(k:Place{city:'Berlin'})

where p.name in ['Rosa','Karl']

return p.name

1. Match (p:Person)-[:FRIEND]->(p2:Person)

Match (p2)-[:FRIEND]->(p3:Person)

Match (p)-[:LIVES\_IN]-(P:Place{city:'Berlin'})

Match (p5:Person)-[:FRIEND]->(p6:Person)

Match (p5)-[:LIVES\_IN]-(p7:Place{city:'Berlin'})

return p3,p6  
(or)  
MATCH (p:Person)-[:LIVES\_IN]->(P:Place{city:'Berlin'})

MATCH (p)-[:FRIEND]->(p2:Person)

MATCH (p2)-[:FRIEND]->(p3:Person)

return p2,p3

1. Match (p:Person)-[:LIVES\_IN]-(p2:Place)

return p2.city,COUNT(p.name)

order by p2.city DESC

(or)

Match (p:Person)-[:LIVES\_IN]-(p2:Place)

return p2.city,COUNT(p.name)

order by COUNT(p.name) DESC

Note : Exactly didn’t know whether we should order by count or city name

PROBLEM 2 (may not be perfect)

// Creating books

CREATE (:Book {Title: "To Kill a Mockingbird", Tags: ["fiction", "classics", "racism"], Status: "Available", Condition: "New", Cost: 15, Type: "Novel"})

CREATE (:Book {Title: "1984", Tags: ["fiction", "dystopian", "surveillance"], Status: "Available", Condition: "New", Cost: 12, Type: "Novel"})

CREATE (:Book {Title: "The Great Gatsby", Tags: ["fiction", "classics", "romance"], Status: "Available", Condition: "New", Cost: 18, Type: "Novel"})

CREATE (:Book {Title: "The Catcher in the Rye", Tags: ["fiction", "coming of age"], Status: "Available", Condition: "New", Cost: 10, Type: "Novel"})

CREATE (:Book {Title: "Pride and Prejudice", Tags: ["fiction", "classics", "romance"], Status: "Available", Condition: "New", Cost: 14, Type: "Novel"})

// Creating persons

CREATE (:Person {Name: "Harper Lee", Role: "Author"})

CREATE (:Person {Name: "George Orwell", Role: "Author"})

CREATE (:Person {Name: "F. Scott Fitzgerald", Role: "Author"})

CREATE (:Person {Name: "J.D. Salinger", Role: "Author"})

CREATE (:Person {Name: "Jane Austen", Role: "Author"})

CREATE (:Person {Name: "John Doe", Role: "Reader"})

CREATE (:Person {Name: "Emily Smith", Role: "Reader"})

CREATE (:Person {Name: "Michael Johnson", Role: "Reader"})

CREATE (:Person {Name: "Sarah Williams", Role: "Translator"})

CREATE (:Person {Name: "James Brown", Role: "Translator"})

CREATE (:Person {Name: "Rachel Green", Role: "Reviewer"})

CREATE (:Person {Name: "Daniel Harris", Role: "Reviewer"})

CREATE (:Person {Name: "Samuel Thompson", Role: "Supplier"})

CREATE (:Person {Name: "Eva Martinez", Role: "Supplier"})

// Creating relationships

MATCH (b:Book {Title: "To Kill a Mockingbird"}), (a:Person {Name: "Harper Lee"})

CREATE (a)-[:PublishedBy]->(b)

MATCH (b:Book {Title: "1984"}), (a:Person {Name: "George Orwell"})

CREATE (a)-[:PublishedBy]->(b)

MATCH (b:Book {Title: "The Great Gatsby"}), (a:Person {Name: "F. Scott Fitzgerald"})

CREATE (a)-[:PublishedBy]->(b)

MATCH (b:Book {Title: "The Catcher in the Rye"}), (a:Person {Name: "J.D. Salinger"})

CREATE (a)-[:PublishedBy]->(b)

MATCH (b:Book {Title: "Pride and Prejudice"}), (a:Person {Name: "Jane Austen"})

CREATE (a)-[:PublishedBy]->(b)

MATCH (r:Person {Name: "John Doe"}), (b:Book {Title: "To Kill a Mockingbird"})

CREATE (r)-[:Votes {Rating: 5}]->(b)

MATCH (r:Person {Name: "Emily Smith"}), (b:Book {Title: "1984"})

CREATE (r)-[:Votes {Rating: 4}]->(b)

MATCH (r:Person {Name: "Michael Johnson"}), (b:Book {Title: "The Great Gatsby"})

CREATE (r)-[:Votes {Rating: 4}]->(b)

MATCH (r:Person {Name: "John Doe"}), (b:Book {Title: "The Catcher in the Rye"})

CREATE (r)-[:Votes {Rating: 3}]->(b)

MATCH (r:Person {Name: "Emily Smith"}), (b:Book {Title: "Pride and Prejudice"})

CREATE (r)-[:Votes {Rating: 5}]->(b)

MATCH (r:Person {Name: "John Doe"}), (b:Book {Title: "To Kill a Mockingbird"})

CREATE (r)-[:ReviewedBy {Review: "Excellent book!"}]->(b)

MATCH (r:Person {Name: "Emily Smith"}), (b:Book {Title: "1984"})

CREATE (r)-[:ReviewedBy {Review: "Interesting read."}]->(b)

MATCH (r:Person {Name: "Michael Johnson"}), (b:Book {Title: "The Great Gatsby"})

CREATE (r)-[:ReviewedBy {Review: "Great story."}]->(b)

MATCH (r:Person {Name: "John Doe"}), (b:Book {Title: "The Catcher in the Rye"})

CREATE (r)-[:ReviewedBy {Review: "A classic."}]->(b)

MATCH (r:Person {Name: "Emily Smith"}), (b:Book {Title: "Pride and Prejudice"})

CREATE (r)-[:ReviewedBy {Review: "Timeless romance."}]->(b)

MATCH (b:Book {Title: "To Kill a Mockingbird"}), (t:Person {Name: "Sarah Williams"})

CREATE (t)-[:TranslatedBy]->(b)

MATCH (b:Book {Title: "1984"}), (t:Person {Name: "James Brown"})

CREATE (t)-[:TranslatedBy]->(b)

MATCH (b:Book {Title: "The Great Gatsby"}), (t:Person {Name: "Sarah Williams"})

CREATE (t)-[:TranslatedBy]->(b)

MATCH (b:Book {Title: "The Catcher in the Rye"}), (t:Person {Name: "James Brown"})

CREATE (t)-[:TranslatedBy]->(b)

MATCH (b:Book {Title: "Pride and Prejudice"}), (t:Person {Name: "Sarah Williams"})

CREATE (t)-[:TranslatedBy]->(b)

MATCH (s:Person {Name: "Samuel Thompson"}), (b:Book {Title: "To Kill a Mockingbird"})

CREATE (s)-[:IssuedBy]->(b)

MATCH (s:Person {Name: "Eva Martinez"}), (b:Book {Title: "1984"})

CREATE (s)-[:IssuedBy]->(b)

MATCH (s:Person {Name: "Samuel Thompson"}), (b:Book {Title: "The Great Gatsby"})

CREATE (s)-[:IssuedBy]->(b)

MATCH (s:Person {Name: "Eva Martinez"}), (b:Book {Title: "The Catcher in the Rye"})

CREATE (s)-[:IssuedBy]->(b)

MATCH (s:Person {Name: "Samuel Thompson"}), (b:Book {Title: "Pride and Prejudice"})

CREATE (s)-[:IssuedBy]->(b)

MATCH (s:Person {Name: "Samuel Thompson"}), (b:Book {Title: "To Kill a Mockingbird"})

CREATE (s)-[:ReturnedBy]->(b)

MATCH (s:Person {Name: "Eva Martinez"}), (b:Book {Title: "1984"})

CREATE (s)-[:ReturnedBy]->(b)

MATCH (s:Person {Name: "Samuel Thompson"}), (b:Book {Title: "The Great Gatsby"})

CREATE (s)-[:ReturnedBy]->(b)

MATCH (s:Person {Name: "Eva Martinez"}), (b:Book {Title: "The Catcher in the Rye"})

CREATE (s)-[:ReturnedBy]->(b)

1. MATCH (p:Person)-[:IssuedBy]->(b:Book)

RETURN p.Name

1. MATCH (p:Person{Role:'Reader'})-[:ReviewedBy]->(b:Book{Title:'The Great Gatsby'})

RETURN COUNT(p)

1. MATCH (p:Person{Name:'Eva Martinez'})-[:IssuedBy]-(b:Book)

WITH p,COUNT(b) as cnt

SET p.num = cnt

RETURN p

1. MATCH (p:Person)-[:PublishedBy]->(b:Book)

WHERE p.city = 'Pune'

RETURN p

1. MATCH (p:Person{Role:Reader})-[:RecommendedBy]->(b:Book)

WHERE b.Title IN ['The Catcher in the Rye','Pride and Prejudice']

RETURN p.Name

1. MATCH (p:Person{Role:'Reader'})

WHERE NOT EXISTS

{MATCH (p)-[:PublishedBy]->(b:Book)}

RETURN p.Name AS ReaderName

(or)

MATCH (p:Person{Role:'Reader'})

WHERE NOT EXISTS {MATCH (p)-[:RecommendedBy]-()}

RETURN p

1. MATCH (p:Person{Role:'Author'})-[:PublishedBy]->(b:Book)

MATCH (p2:Person{Role:'Supplier'})-[:IssuedBy|:Votes]->(b)

WITH p,COUNT(DISTINCT p2) as cnt

ORDER BY cnt DESC

LIMIT 1

RETURN p.Name,cnt

1. MATCH (p:Person{Role:'Author'})-[:PublishedBy]->(b:Book)

MATCH (p2:Person{Role:'Supplier'})-[:IssuedBy|:Votes]->(b)

WITH p,COUNT(DISTINCT p2) as cnt

ORDER BY cnt DESC

LIMIT 1

RETURN p.Name,cnt

1. MATCH (p:Person{Name:'Emily Smith'})-[:Votes]->(b:Book)<-[:ReviewedBy]-(p2:Person{Role:'Reader'})

WITH b,COUNT(DISTINCT p2) AS numReaders

ORDER BY numReaders DESC

LIMIT 1

RETURN b.Title,numReaders

1. MATCH (p:Person)-[:PublishedBy]->(b:Book)

MATCH (p2:Person{})-[:ReviewedBy]->(b)

WHERE p2.city IN ['Pune','Mumbai']

WITH p,p2,b,COUNT(DISTINCT b) AS cnt

WHERE cnt = 0

RETURN p