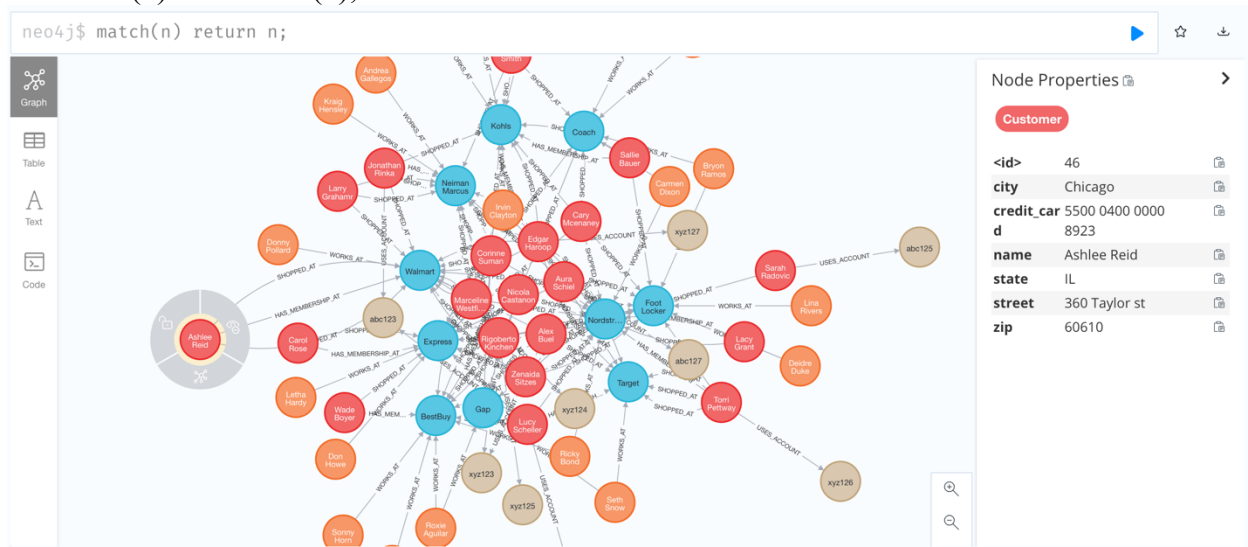


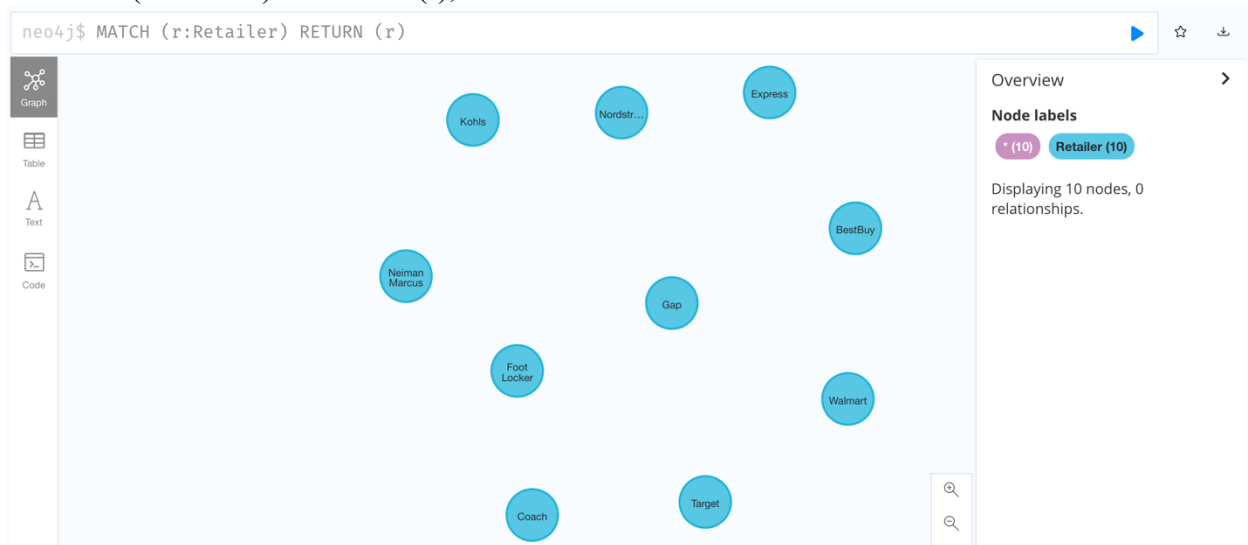
1d. Find the Customer Ashlee Reid and pull the node to the far left of the screen.

MATCH (n) RETURN (n);

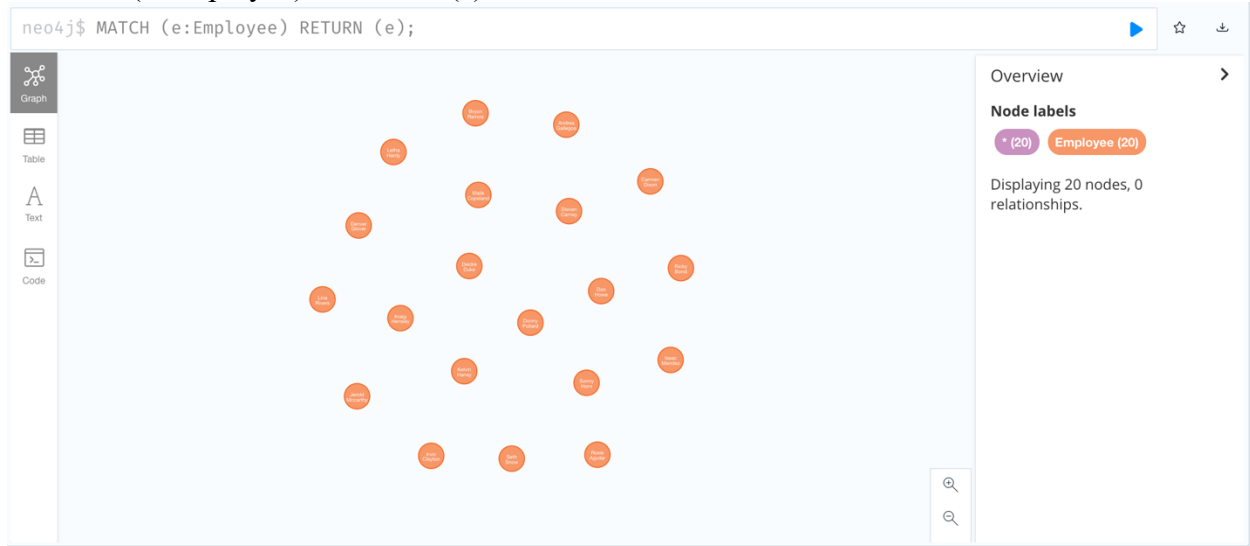


2. Execute the following Cypher code to get the list of retailers: (1 point)

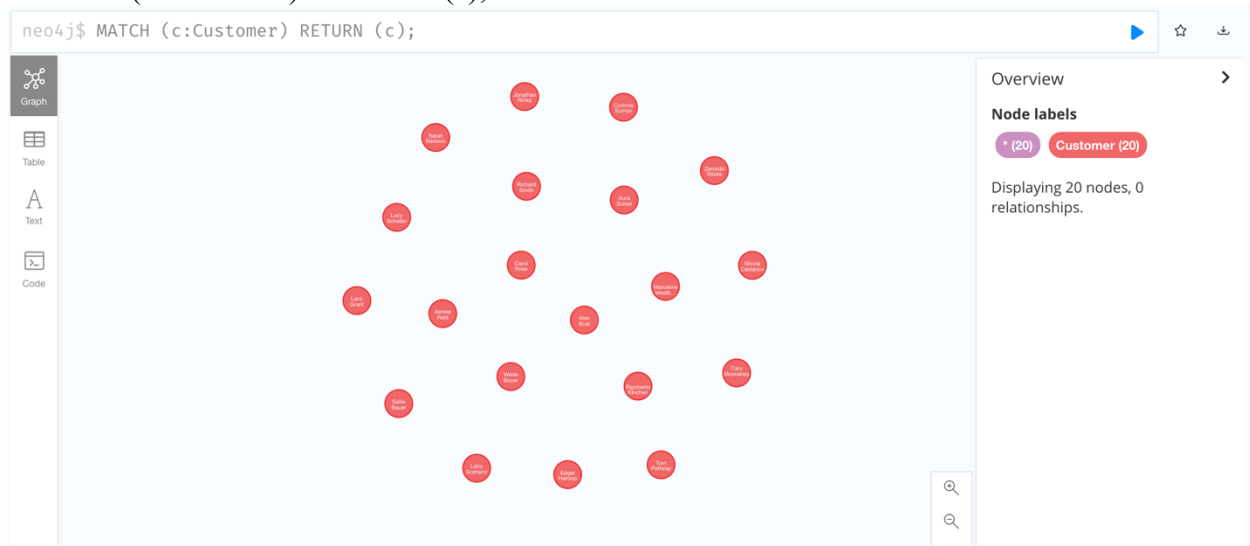
MATCH (r:Retailer) RETURN (r);



3. Execute the following Cypher code to get the list of employees: (1 point)  
`MATCH (e:Employee) RETURN (e);`



4. Execute the following Cypher code to get the list of customers: (1 point)  
`MATCH (c:Customer) RETURN (c);`



5. Execute the following Cypher code to get the list of all disputed transactions: (1 point)

```
MATCH (customer:Customer)-[transaction:SHOPPED_AT]->(retailer) WHERE
transaction.status = "Disputed"
RETURN customer.name AS `Customer Name`, retailer.name AS `Retailer Name`,
transaction.amount AS `Transaction Amount`,
transaction.date AS `Transaction date`
ORDER BY `Transaction date` DESC
```

neo4j\$ MATCH (customer:Customer)-[transaction:SHOPPED\_AT]->(retailer) WHERE transaction.status = "Dis..."

|   | Customer Name          | Retailer Name   | Transaction Amount | Transaction date |
|---|------------------------|-----------------|--------------------|------------------|
| 1 | "Nicola Castanon "     | "Coach"         | "721"              | "7/17/2020"      |
| 2 | "Zenaida Sitzes "      | "Express"       | "1884"             | "5/7/2020"       |
| 3 | "Marceline Westfield " | "Express"       | "533"              | "5/6/2020"       |
| 4 | "Edgar Haroop"         | "Neiman Marcus" | "1732"             | "5/26/2020"      |
| 5 | "Edgar Haroop"         | "Kohls"         | "1021"             | "5/23/2020"      |
| 6 | "Lucy Scheller"        | "BestBuy"       | "424"              | "5/20/2020"      |
| 7 |                        |                 |                    |                  |

Started streaming 33 records after 237 ms and completed after 241 ms.

| "Customer Name"        | "Retailer Name" | "Transaction Amount" | "Transaction date" |
|------------------------|-----------------|----------------------|--------------------|
| "Nicola Castanon "     | "Coach"         | "721"                | "7/17/2020"        |
| "Zenaida Sitzes "      | "Express"       | "1884"               | "5/7/2020"         |
| "Marceline Westfield " | "Express"       | "533"                | "5/6/2020"         |
| "Edgar Haroop"         | "Neiman Marcus" | "1732"               | "5/26/2020"        |
| "Edgar Haroop"         | "Kohls"         | "1021"               | "5/23/2020"        |
| "Lucy Scheller"        | "BestBuy"       | "424"                | "5/20/2020"        |
| "Larry Grahamr"        | "Walmart"       | "425"                | "5/19/2020"        |
| "Larry Grahamr"        | "Neiman Marcus" | "475"                | "5/19/2020"        |
| "Richard Smith"        | "Kohls"         | "875"                | "5/13/2020"        |
| "Rigoberto Kinchen "   | "BestBuy"       | "424"                | "5/10/2020"        |
| "Jonathan Rinka"       | "Neiman Marcus" | "375"                | "4/19/2020"        |
| "Torri Pettway "       | "Foot Locker"   | "62"                 | "4/17/2020"        |
| "Carol Rose"           | "Express"       | "721"                | "4/13/2020"        |
| "Edgar Haroop"         | "Nordstrom"     | "1415"               | "4/1/2020"         |
| "Rigoberto Kinchen "   | "Express"       | "721"                | "4/1/2020"         |
| "Edgar Haroop"         | "Walmart"       | "654"                | "3/20/2020"        |
| "Rigoberto Kinchen "   | "Walmart"       | "914"                | "3/18/2020"        |
| "Zenaida Sitzes "      | "Walmart"       | "1149"               | "3/18/2020"        |
| "Richard Smith"        | "Coach"         | "1145"               | "3/18/2020"        |
| "Ashlee Reid"          | "Walmart"       | "1149"               | "3/18/2020"        |
| "Sarah Radovic"        | "Nordstrom"     | "516"                | "3/15/2020"        |
| "Aura Schiel "         | "Neiman Marcus" | "830"                | "3/13/2020"        |
| "Cary Mcenaney "       | "Kohls"         | "468"                | "2/29/2020"        |
| "Edgar Haroop"         | "Walmart"       | "1849"               | "2/20/2020"        |
| "Rigoberto Kinchen "   | "Nordstrom"     | "1003"               | "2/20/2020"        |
| "Corinne Suman "       | "Nordstrom"     | "816"                | "2/20/2020"        |
| "Lacy Grant"           | "Nordstrom"     | "1003"               | "2/20/2020"        |
| "Jonathan Rinka"       | "Kohls"         | "1345"               | "2/18/2020"        |
| "Zenaida Sitzes "      | "BestBuy"       | "378"                | "2/10/2020"        |
| "Sallie Bauer"         | "Foot Locker"   | "378"                | "2/10/2020"        |
| "Torri Pettway "       | "Target"        | "605"                | "1/27/2020"        |
| "Jonathan Rinka"       | "Walmart"       | "945"                | "1/27/2020"        |
| "Zenaida Sitzes "      | "Nordstrom"     | "1790"               | "1/20/2020"        |



6. Write the Cypher code to get the number of disputed transactions for every retailer (6points)

MATCH (customer:Customer)-[transaction:SHOPPED\_AT]->(retailer) WHERE transaction.status = "Disputed"

RETURN retailer.name AS `Retailer Name`, COUNT(\*) AS `Number of Disputed Transactions`  
ORDER BY `Number of Disputed Transactions` DESC

neo4j\$ MATCH (customer:Customer)-[transaction:SHOPPED\_AT]->(retailer) WHERE transaction.status = "Dis..."

|   | Retailer Name   | Number of Disputed Transactions |
|---|-----------------|---------------------------------|
| 1 | "Walmart"       | 7                               |
| 2 | "Nordstrom"     | 6                               |
| 3 | "Neiman Marcus" | 4                               |
| 4 | "Kohls"         | 4                               |
| 5 | "Express"       | 4                               |
| 6 | "BestBuy"       | 3                               |
| 7 |                 |                                 |

Started streaming 9 records after 19 ms and completed after 57 ms.

| "Retailer Name" | "Number of Disputed Transactions" |
|-----------------|-----------------------------------|
| "Walmart"       | 7                                 |
| "Nordstrom"     | 6                                 |
| "Neiman Marcus" | 4                                 |
| "Kohls"         | 4                                 |
| "Express"       | 4                                 |
| "BestBuy"       | 3                                 |
| "Foot Locker"   | 2                                 |
| "Coach"         | 2                                 |
| "Target"        | 1                                 |

7. Write the Cypher code to get the number of disputed transactions and the list of customer names for these disputed transactions for every retailer (6 points)

```
MATCH (customer:Customer)-[transaction:SHOPPED_AT]->(retailer) WHERE
transaction.status = "Disputed"
RETURN retailer.name AS `Retailer Name`, customer.name AS `Customer Name`, COUNT(*)
AS `Number of Disputed Transactions`
ORDER BY `Retailer Name`, `Customer Name`
```

neo4j\$ MATCH (customer:Customer)-[transaction:SHOPPED\_AT]→(retailer) WHERE transaction.status = "Dis..."

| "Retailer Name" | "Customer Name"         | "Number of Disputed Transactions" |
|-----------------|-------------------------|-----------------------------------|
| "BestBuy"       | " Rigoberto Kinchen "   | 1                                 |
| "BestBuy"       | " Zenaida Sitzes "      | 1                                 |
| "BestBuy"       | "Lucy Scheller"         | 1                                 |
| "Coach"         | " Nicola Castanon "     | 1                                 |
| "Coach"         | "Richard Smith"         | 1                                 |
| "Express"       | " Marceline Westfield " | 1                                 |
| "Express"       | " Rigoberto Kinchen "   | 1                                 |
| "Express"       | " Zenaida Sitzes "      | 1                                 |
| "Express"       | "Carol Rose"            | 1                                 |
| "Foot Locker"   | " Torri Pettway "       | 1                                 |
| "Foot Locker"   | "Sallie Bauer"          | 1                                 |

| "Retailer Name" | "Customer Name"         | "Number of Disputed Transactions" |
|-----------------|-------------------------|-----------------------------------|
| "BestBuy"       | " Rigoberto Kinchen "   | 1                                 |
| "BestBuy"       | " Zenaida Sitzes "      | 1                                 |
| "BestBuy"       | "Lucy Scheller"         | 1                                 |
| "Coach"         | " Nicola Castanon "     | 1                                 |
| "Coach"         | "Richard Smith"         | 1                                 |
| "Express"       | " Marceline Westfield " | 1                                 |
| "Express"       | " Rigoberto Kinchen "   | 1                                 |
| "Express"       | " Zenaida Sitzes "      | 1                                 |
| "Express"       | "Carol Rose"            | 1                                 |
| "Foot Locker"   | " Torri Pettway "       | 1                                 |
| "Foot Locker"   | "Sallie Bauer"          | 1                                 |
| "Kohls"         | " Cary Mcenaney "       | 1                                 |
| "Kohls"         | "Edgar Haroop"          | 1                                 |
| "Kohls"         | "Jonathan Rinka"        | 1                                 |
| "Kohls"         | "Richard Smith"         | 1                                 |
| "Neiman Marcus" | " Aura Schiel "         | 1                                 |
| "Neiman Marcus" | "Edgar Haroop"          | 1                                 |
| "Neiman Marcus" | "Jonathan Rinka"        | 1                                 |
| "Neiman Marcus" | "Larry Grahamr"         | 1                                 |
| "Nordstrom"     | " Corinne Suman "       | 1                                 |
| "Nordstrom"     | " Rigoberto Kinchen "   | 1                                 |
| "Nordstrom"     | " Zenaida Sitzes "      | 1                                 |
| "Nordstrom"     | "Edgar Haroop"          | 1                                 |
| "Nordstrom"     | "Lacy Grant"            | 1                                 |
| "Nordstrom"     | "Sarah Radovic"         | 1                                 |
| "Target"        | " Torri Pettway "       | 1                                 |
| "Walmart"       | " Rigoberto Kinchen "   | 1                                 |
| "Walmart"       | " Zenaida Sitzes "      | 1                                 |
| "Walmart"       | "Ashlee Reid"           | 1                                 |
| "Walmart"       | "Edgar Haroop"          | 2                                 |
| "Walmart"       | "Jonathan Rinka"        | 1                                 |
| "Walmart"       | "Larry Grahamr"         | 1                                 |

8. Write the Cypher code to get the number of disputed transactions for every customer that has more than one disputed transaction (6 points)

```
MATCH (customer:Customer)-[transaction:SHOPPED_AT]->(retailer)
WITH transaction.status AS `Transaction Status`, customer.name AS `Customer Name`,
count(*) AS `Number of Disputed Transactions`
WHERE `Transaction Status` = "Disputed" AND `Number of Disputed Transactions` > 1
RETURN `Customer Name`, `Number of Disputed Transactions`
ORDER BY `Customer Name`
```

neo4j\$ MATCH (customer:Customer)-[transaction:SHOPPED\_AT]→(retailer) WITH transaction.status AS `Tra... ▶ ☆ ↴

Table

Text

Code

| "Customer Name"       | "Number of Disputed Transactions" |
|-----------------------|-----------------------------------|
| " Rigoberto Kinchen " | 4                                 |
| " Torri Pettway "     | 2                                 |
| " Zenaída Sitzes "    | 4                                 |
| "Edgar Haroop"        | 5                                 |
| "Jonathan Rinka"      | 3                                 |
| "Larry Grahamr"       | 2                                 |
| "Richard Smith"       | 2                                 |

MAX COLUMN WIDTH:

| "Customer Name"       | "Number of Disputed Transactions" |
|-----------------------|-----------------------------------|
| " Rigoberto Kinchen " | 4                                 |
| " Torri Pettway "     | 2                                 |
| " Zenaída Sitzes "    | 4                                 |
| "Edgar Haroop"        | 5                                 |
| "Jonathan Rinka"      | 3                                 |
| "Larry Grahamr"       | 2                                 |
| "Richard Smith"       | 2                                 |

9. Write the Cypher code to get the list of stores on LaSalle street that have disputed transactions and the number of disputed transactions for every store; the store list must be sorted by store name in ascending order. (6 points)

```
MATCH (customer:Customer)-[transaction:SHOPPED_AT]->(retailer)
WHERE transaction.status = "Disputed" AND retailer.street CONTAINS "LaSalle"
RETURN retailer.name AS 'Retailer Name', COUNT(*) AS 'Number of Disputed Transactions'
ORDER BY 'Retailer Name'
```

neo4j\$ MATCH (customer:Customer)-[transaction:SHOPPED\_AT]→(retailer) WHERE transaction.status = "Dis... ▶ ☆ ⬇

Table

Text

Code

| "Retailer Name" | "Number of Disputed Transactions" |
|-----------------|-----------------------------------|
| "Neiman Marcus" | 4                                 |
| "Nordstrom"     | 6                                 |

MAX COLUMN WIDTH: ⬅ ➡

| "Retailer Name" | "Number of Disputed Transactions" |
|-----------------|-----------------------------------|
| "Neiman Marcus" | 4                                 |
| "Nordstrom"     | 6                                 |



10. Write the Cypher code to get the list of Employees who work in at least 2 stores where disputed transactions reported in these retailers (6 points)

```
MATCH (customer:Customer)-[transaction:SHOPPED_AT]-(retailer)<-  
[transaction2:WORKS_AT]-(employee:Employee)  
WITH transaction.status AS `Transaction Status`, employee.name AS `Employee Name`,  
COUNT(DISTINCT retailer.name) AS `# Retailers with Disputed Transactions`  
WHERE `Transaction Status` = "Disputed" AND `# Retailers with Disputed Transactions` > 1  
RETURN `Employee Name`, `# Retailers with Disputed Transactions`
```

neo4j\$ MATCH (customer:Customer)-[transaction:SHOPPED\_AT]-(retailer)<-[transaction2:WORKS\_AT]-(employee:Employee) WITH transaction.status AS `Transaction Status`, employee.name AS `Employee Name`, COUNT(DISTINCT retailer.name) AS `# Retailers with Disputed Transactions` WHERE `Transaction Status` = "Disputed" AND `# Retailers with Disputed Transactions` > 1 RETURN `Employee Name`, `# Retailers with Disputed Transactions`

| "Employee Name" | "# Retailers with Disputed Transactions" |
|-----------------|--|
| "Ricky Bond"    | 2  |
| "Carmen Dixon"  | 2  |
| "Bryon Ramos"   | 2  |
| "Irvin Clayton" | 3  |

| "Employee Name" | "# Retailers with Disputed Transactions" |
|-----------------|--|
| "Ricky Bond"    | 2  |
| "Carmen Dixon"  | 2  |
| "Bryon Ramos"   | 2  |
| "Irvin Clayton" | 3  |