Authors: Joshua Patterson, Alex Richardson
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CMSI 486
HW 3
MONGO DB

1. What are the different collections in the Northwind database?

> show collections
    result:
    categories
    customers
    employee-territories
    employees
    northwind
    order-details
    orders
    products
    regions
    shippers
    suppliers

2. How many documents are in the "categories" collection?

> db.categories.count()
    result:
    8

3. How many documents are in the "orders" collection?

> db.orders.count()
    result:
    830

4. How many orders were handled by the person with EmployeeID number 8?

> db.orders.count({EmployeeID : 8})
    result:
    104

5. What is the last name of the employee who has the EmployeeID number 1?

> db.employees.find({EmployeeID : 1},{_id: false, LastName: true })
    result:
    { "LastName" : "Davolio" }

6. What are the EmployeeID numbers on orders which have an OrderID less than 10300?

> db.orders.distinct("EmployeeID", {"OrderID" : {$lt:10300}})
        result:
        [4, 3, 5, 9, 1, 8, 6, 2, 7]

7. What are the Company Names of the suppliers?

> db.suppliers.distinct("CompanyName")
        result:
        ["Grandma Kelly's Homestead",
        "PB Knäckebröd AB",
        "New Orleans Cajun Delights",
        "Mayumi's",
        "Tokyo Traders",
        "Norske Meierier",
        "Bigfoot Breweries",
        "Svensk Sjöföda AB",
        "Specialty Biscuits",
        "Karkki Oy",
        "Gai pâturage",
        "Leka Trading",
        "Pasta Buttini s.r.l.",
        "Ma Maison",
        "Refrescos Americanas LTDA",
        "Heli Süßwaren GmbH & Co. KG",
        "Lyngbysild",
        "Formaggi Fortini s.r.l.",
        "Aux joyeux ecclésiastiques",
        "Cooperativa de Quesos 'Las Cabras'",
        "Plutzer Lebensmittelgroßmärkte AG",
        "Nord-Ost-Fisch Handelsgesellschaft mbH",
        "Zaanse Snoepfabriek",
        "Exotic Liquids",
        "Forêts d'érables",
        "G'day",
        "New England Seafood Cannery",
        "Escargots Nouveaux"]

8. How many suppliers are there?

```
> db.suppliers.count()
        result: 29
```

9. What is the supplier ID and phone number for the supplier in Boston, Mass.?
Be sure NOT to include the ID of the document…

```
> db.suppliers.find( { City: "Boston" }, { _id: false, SupplierID: true, Phone: true } )
        result: { "SupplierID" : 19, "Phone" : "(617) 555-3267" }
```

10. What employee is responsible for the largest number of orders, and for how many orders is that employee responsible?

```
> db.orders.aggregate([{$sortByCount: "$EmployeeID"}, {$limit: 1}])
        result: { "_id" : 4, "count" : 156 }
```

11. How many territories have the RegionID value of "2"? What are their territory descriptions?
Be sure NOT to include the ID of the document, and ONLY show the territory descriptions.

```
> db.territories.distinct({"RegionID":2}).count()
        result: 15
> db.territories.distinct(TerritoryDescription, {"RegionID":2}, {_id: false}
        result:
        [ "SantaClara",
        "Scottsdale",
        "HoffmanEstates",
        "Redmond" ,
        "SantaMonica",
        "MenloPark",
        "Phoenix",
        "Chicago"
        "SanFrancisco",
        "Bellevue",
        "ColoradoSprings",
        "Seattle" ,
        "SantaCruz",
        "Campbell",
        "Denver"]
```

12. What is the phone number of the shipper with the company name "United Package"?
Be sure NOT to include the ID of the document in the output, ONLY the phone number.

> db.shippers.distinct({CompanyName: "United Package" }, { _id: false, Phone: true })
      result: ["(503) 555-3199"]

BONUS:
13. How many documents are in the "order-details" collection? How many in the "employee-territories" collection?

> db["order-details"].count()
      result:
      2155
> db["employee-territories"].count()
      result:
      49

14. How many orders were shipped to Albuquerque, NM? What are the order numbers?
Be sure NOT to include the ID of the document in the output, ONLY the Order ID numbers.

> db.orders.distinct({ShipCity: "Albuquerque", ShipRegion: "NM"}).count()
      result:
      18

> db.orders.distinct({ShipCity: "Albuquerque", ShipRegion: "NM"}, {_id: false})
      Result:
      [10889,
      10820,
      10988,
      10564,
      10401,
      10761,
      10294,
      10569,
      10272,
      10314,
      11077,
      10316,
      10479,
      10262,

      10598,
      10852,
      10346]

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EXERCISES
=========
Use single queries for these, meaning you may NOT execute one query and then execute
a second, third, fourth, ..., n'th query to determine maximums, minimums or counts.

1. What are the different collections in the Northwind database?
> MATCH (n) RETURN distinct labels(n)
     result:
     labels(n)
     ["Category"]
     ["Supplier"]
     ["Customer"]
     ["Employee"]
     ["Regions"]
     ["Employee_Territories"]
     ["Order_Details"]
     ["Order"]
     ["Product"]
     ["Shippers"]
     ["Territories"]

2. How many documents are in the "categories" label set?
> MATCH(n: Category) RETURN count(n)
     result:
     count(n)
     8

3. How many documents are in the "orders" label set?
> MATCH(n: Category) RETURN count(n)
     result:
     count(n)
     830

4. How many orders were handled by the person with EmployeeID number 8?
> MATCH(n: Orders {EmployeeID = '8'}) RETURN count(n)
     result:
     count(n)
     104

5. What is the last name of the employee who has the EmployeeID number 1?
> MATCH(n:Employee {EmployeeID = '1'}) RETURN n.lastName

result:
n.lastname
"Davolio"

6. What are the EmployeeID numbers on orders which have an OrderID less than 10300?

> MATCH (n:Orders) WHERE n.OrderID < '10300' RETURN DISTINCT n.EmployeeID

result:
n.EmployeeID
5
6
4
3
9
1
8
2
7

7. What are the Company Names of the suppliers?

> MATCH (n:Supplier) RETURN DISTINCT n.companyName

result:
n.companyName
"Exotic Liquids"
"Lyngbysild"
"Refrescos Americanas LTDA"
"Nord-Ost-Fisch Handelsgesellschaft mbH"
"Heli Süßwaren GmbH & Co. KG"
"Norske Meierier"
"Mayumi's"
"New England Seafood Cannery"
"Escargots Nouveaux"
"Forêts d'érables"
"Plutzer Lebensmittelgroßmärkte AG"
"Formaggi Fortini s.r.l."
"Leka Trading"
"G'day"
"Karkki Oy"
"Tokyo Traders"
"Pasta Buttini s.r.l."
"Svensk Sjöföda AB"
"Gai pâturage"
"Zaanse Snoepfabriek"
"Aux joyeux ecclésiastiques"
"Bigfoot Breweries"
"New Orleans Cajun Delights"

"PB Knäckebröd AB"
"Grandma Kelly's Homestead"
"Specialty Biscuits"
"Cooperativa de Quesos 'Las Cabras'"
"Ma Maison"

8. How many suppliers are there?
> MATCH (n:Supplier) RETURN count(n)
    result:
    count(n)
    29
9. What is the supplier ID and phone number for the supplier in Boston, Mass.?
> MATCH (n:Supplier {city: "Boston", region: "MA"}) RETURN n.phone, n.supplierID
    result:
    n.supplierID   n.phone
    "19"   "(617) 555-3267"

10. What employee is responsible for the largest number of orders, and for how many orders is that employee responsible?

11. How many territories have the RegionID value of "2"? What are their territory descriptions?
    You can use two queries. Be sure to ONLY show the territory descriptions for that query.
> MATCH (n:Territory {regionID = '2'}) RETURN count(n)
    result:
    count(n)
    15
> MATCH (n:Territory {regionID = '2'}) RETURN DISTINCT n.territoryDescriptions
    result:
    n.territoryDescriptions
    "HoffmanEstates"
    "Denver"
    "Chicago"
    "ColoradoSprings"
    "Scottsdale"
    "MenloPark"
    "SantaCruz"
    "SanFrancisco"
    "Redmond"
    "SantaClara"
    "Bellevue"
    "Seattle"

12. What is the phone number of the shipper with the company name "United Package"?

Be sure to ONLY include the phone number in the result.

> MATCH (n:Shippers {CompanyName = 'United Package'}) RETURN n.Phone

result:

n.Phone

"(503) 555-3199"