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Program: MS Data Science-2021

Location: West Coast

HW File Detail: DS64620-01-HW8

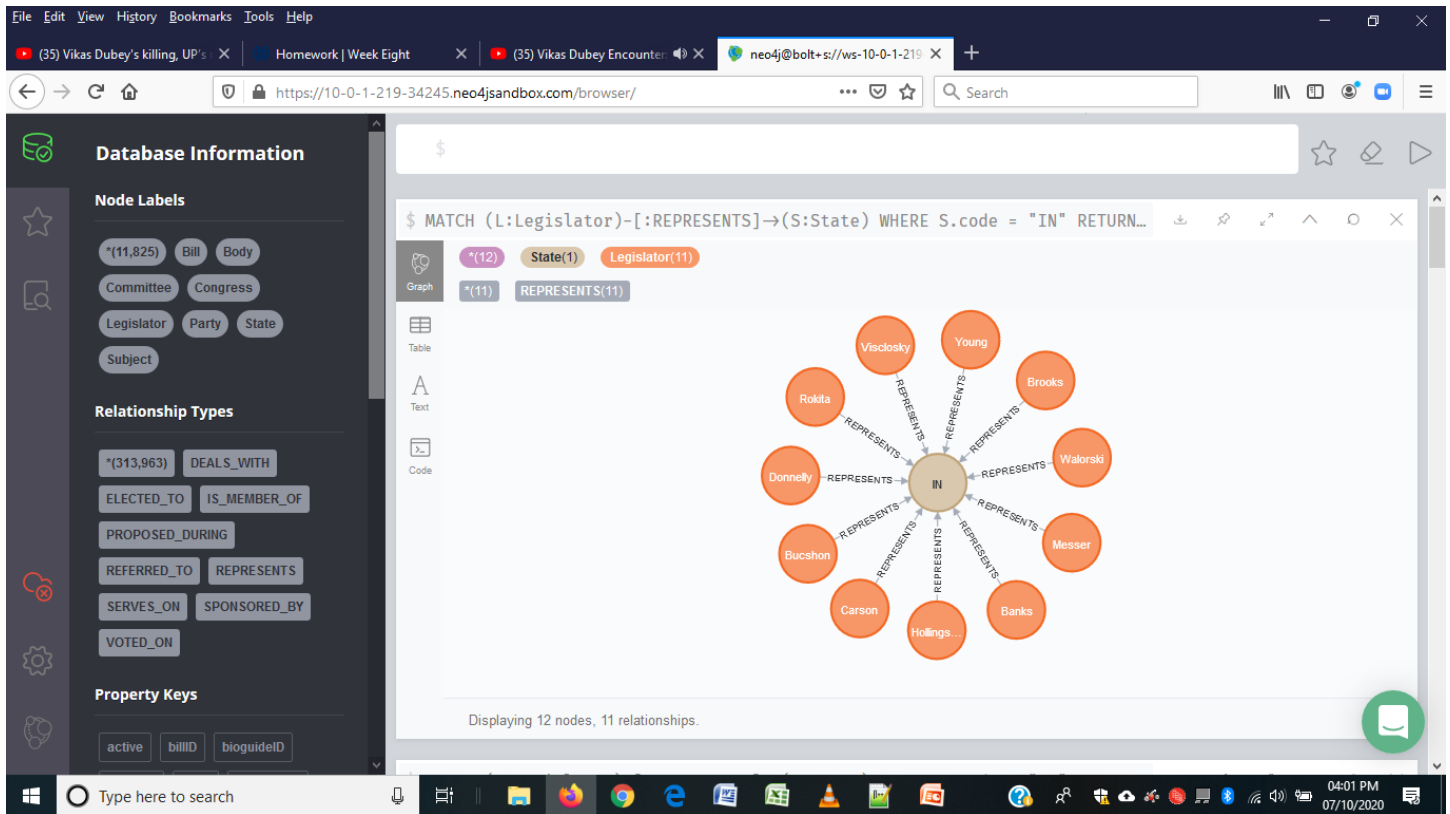
Date: 07/10/2020

Write Cypher queries for each of the items listed below. You are to turn in both the Cypher query that you wrote to answer each question and a screenshot of your results.

1. Create a graph showing all of the representatives in Congress from Indiana.
 2. Create a graph showing committee assignments for the representatives from Indiana.
 3. Limit this graph so that it only shows committee assignments where two or more representatives from Indiana serve on the same committee.
 4. Produce a listing of representatives from Indiana who have sponsored bills related to the topic, "distance education." In your list, provide the last name of the legislator, the title of the bill, and the subject.
 5. Identify the bills that two members of the House of Representatives from Indiana cast votes that were different from each other, even though the two Representatives were from the same political party. Show the bill's title and the two representative's last names.
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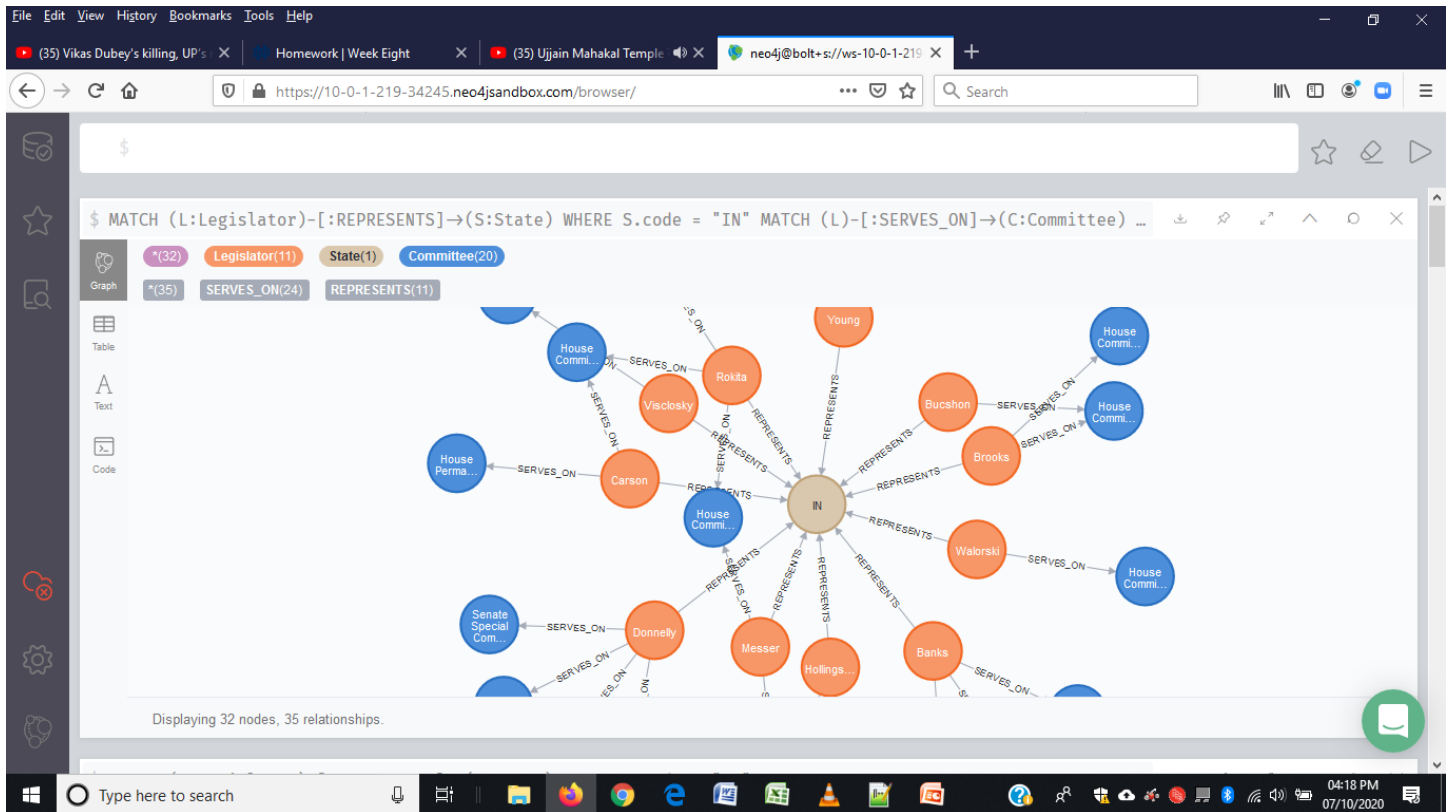
1. Create a graph showing all of the representatives in Congress from Indiana.

```
MATCH (L:Legislator)-[:REPRESENTS]->(S:State)
WHERE S.code = "IN"
RETURN L
```



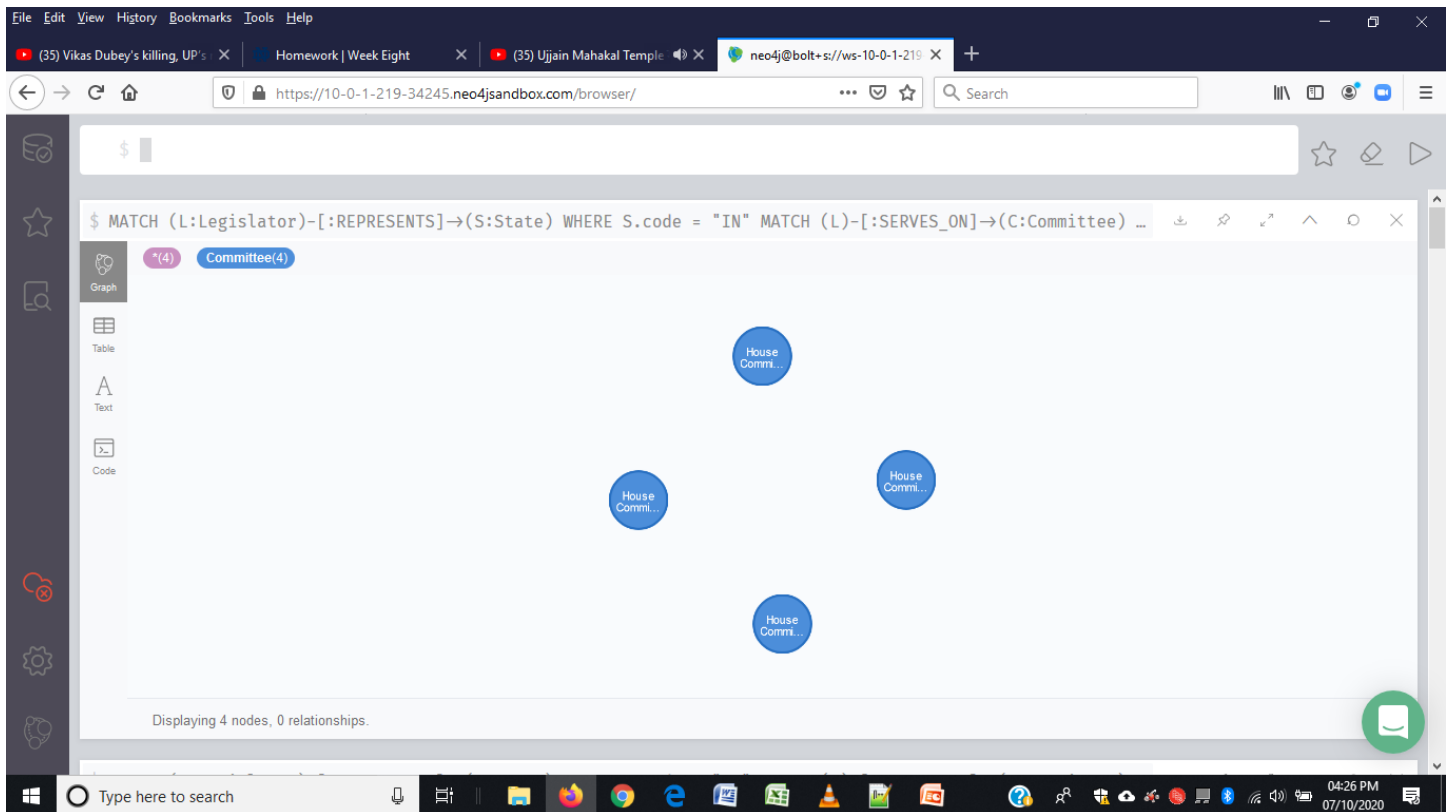
2. Create a graph showing committee assignments for the representatives from Indiana.

```
MATCH (L:Legislator)-[:REPRESENTS]->(S:State)
WHERE S.code = "IN"
MATCH (L)-[:SERVES_ON]->(C:Committee)
RETURN L, S, C
```



3. Limit this graph so that it only shows committee assignments where two or more representatives from Indiana serve on the same committee.

```
MATCH (L:Legislator)-[:REPRESENTS]->(S:State)
WHERE S.code = "IN"
MATCH (L)-[:SERVES_ON]->(C:Committee)
WITH C, count(L) as NumOfLegis
WHERE NumOfLegis > 1
RETURN C, NumOfLegis
```



4. Produce a listing of representatives from Indiana who have sponsored bills related to the topic, "distance education." In your list, provide the last name of the legislator, the title of the bill, and the subject. Legislator.LastName, Bill.Title, U.Subject

```
MATCH (L:Legislator)-[:REPRESENTS]->(S:State)
WHERE S.code = "IN"
MATCH (L)-[:SPONSORED_BY]-(B:Bill)
MATCH (B)-[:DEALS_WITH]->(U:Subject)
WHERE U.title contains "distance"
RETURN L.lastName, B.officialTitle, U.title
```

The screenshot shows a web browser window with the URL `https://10-0-1-219-34245.neo4jsandbox.com/browser/`. The browser displays a Cypher query in a text editor and its results in a table view.

Query:

```
1 MATCH (L:Legislator)-[:REPRESENTS]->(S:State)
2 WHERE S.code = "IN"
3 MATCH (L)-[:SPONSORED_BY]-(B:Bill)
4 MATCH (B)-[:DEALS_WITH]->(U:Subject)
5 WHERE U.title contains "distance"
6 RETURN L.lastName, B.officialTitle, U.title
```

Results Table:

	L.lastName	B.officialTitle	U.title
1	"Messer"	"To support State and local accountability for public education, protect State and local authority, inform parents of the performance of their children's schools, and for other purposes."	"Educational technology and distance education"
2	"Young"	"To amend the Internal Revenue Code of 1986 to improve 529 plans."	"Educational technology and distance education"
3	"Rokita"	"To support State and local accountability for public education, protect State and local authority, inform parents of the performance of their children's schools, and for other purposes."	"Educational technology and distance education"
4	"Carson"	"To amend the Elementary and Secondary Education Act of 1965 and the Workforce Investment Act of 1998 to award grants to prepare individuals for the 21st century workplace and to increase America's global competitiveness, and for other purposes."	"Educational technology and distance education"

Started streaming 4 records after 6 ms and completed after 8 ms.

5. Identify the bills that two members of the House of Representatives from Indiana cast votes that were different from each other, even though the two Representatives were from the same political party. Show the bill's title and the two representative's last names.

```
MATCH      (S:State) <- [:REPRESENTS] - (L1:Legislator) - [V1:VOTED_ON] -> (B:Bill) -
[V2:VOTED_ON] - (L2:Legislator) - [:REPRESENTS] -> (S:State)
WITH      B.officialTitle AS Title,
          L1.lastName      AS LastName1,
          L2.lastName      AS LastName2
WHERE      S.code          = "IN"                      AND
          L1.type          = "House"                   AND
          L2.type          = "House"                   AND
          L1.party         = L2.party                   AND
          V1.vote          <> "Not Voting"              AND
          V2.vote          <> "Not Voting"              AND
          L1.bioguideID    < L2.bioguideID AND
          V1.vote          <> V2.vote
RETURN     Title, LastName1, LastName2
```

Database

\$ MATCH (S:State) <- [:REPRESENTS] - (L1:Legislator) - [V1:VOTED_ON] -> (B:Bill) - [V2:VOTED_ON] - (L2:Legislator) - [:REPRESENTS] -> (S:State) WITH B.officialTitle AS Title, L1.lastName AS LastName1, L2.lastName AS LastName2 WHERE S.code = "IN" AND L1.type = "House" AND L2.type = "House" AND L1.party = L2.party AND V1.vote <> "Not Voting" AND V2.vote <> "Not Voting" AND L1.bioguideID < L2.bioguideID AND V1.vote <> V2.vote RETURN Title, LastName1, LastName2

	Title	LastName1	LastName2
1	"To establish an Oversight Board to assist the Government of Puerto Rico, including instrumentalities, in managing its public finances, and for other purposes."	"Brooks"	"Messer"
2	"To establish an Oversight Board to assist the Government of Puerto Rico, including instrumentalities, in managing its public finances, and for other purposes."	"Bucshon"	"Messer"
3	"A bill to reauthorize and amend the National Sea Grant College Program Act, and for other purposes."	"Brooks"	"Messer"
4	"A bill to reauthorize and amend the National Sea Grant College Program Act, and for other purposes."	"Bucshon"	"Messer"
5	"To provide for reconciliation pursuant to section 2002 of the concurrent resolution on the budget for fiscal year 2016."	"Brooks"	"Messer"
6	"To provide for reconciliation pursuant to section 2002 of the concurrent resolution on the budget for fiscal year 2016."	"Bucshon"	"Messer"
7			

Started streaming 169 records after 50 ms and completed after 9090 ms.