Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956) School of Computing
B.Tech. – Information Technology

VTR UGE2021- (CBCS)

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SUMMER SEMESTER - SS2526

Course Code : 10211IT201

Course Name : Database System Concepts

Slot No : S12L5

DBMS TASK - 9 REPORT

Submitted by:

VTUNO	REGISTER NUMBER	STUDENT NAME
VTU29010	24UEIT0040	P.Manikanta

ABSTRACT

The objective of this task is to perform CRUD operations using graph databases such as Neo4j.
Graph databases use nodes and relationships to represent and query complex data relationships efficiently.

AIM:

To perform CRUD operations like creating, inserting, querying, finding, deleting operations on graph spaces.

- Create Node with Properties

Properties are the key-value pairs using which a node stores data. You can create a node with properties using the CREATE clause. You need to specify these properties separated by commas within the flower braces "{ }".

Syntax

Following is the syntax to create a node with properties.

CREATE (node:label { key1: value, key2: value,.....})

- Returning the Created Node

To verify the creation of the node, type and execute the following query in the dollar prompt.

MATCH (n) RETURN n

- Creating Relationships

We can create a relationship using the CREATE clause. We will specify relationship within the square braces "[ ]" depending on the direction of the relationship it is placed between hyphen " - " and arrow " → " as shown in the following syntax.

Syntax

Following is the syntax to create a relationship using the CREATE clause.

CREATE (node1)-[:RelationshipType]->(node2)

- Creating a Relationship Between the Existing Nodes

You can also create a relationship between the existing nodes using the MATCH clause.

Syntax

Following is the syntax to create a relationship using the MATCH clause.

```
MATCH (a:LabeofNode1), (b:LabeofNode2)
   WHERE a.name = "nameofnode1" AND b.name = " nameofnode2"
CREATE (a)-[: Relation]->(b)
RETURN a,b
```

- Deleting a Particular Node

To delete a particular node, you need to specify the details of the node in the place of “n” in the above query.

Syntax

Following is the syntax to delete a particular node from Neo4j using the DELETE clause.

```
MATCH (node:label {properties..... })
DETACH DELETE node
```

Create a graph database for student course registration, create student and dept node and insert values of properties.

```
create(n:student{Sid: "VTU14500",
Sname:"John", deptname:"CSE" }
)
```

OUTPUT

Added 1 label, created 1 node, set 3 properties, completed after 232 ms.

```
Create(n:student {Sid: "VTU14501",
Sname:"Dharsana", deptname:"EEE"})
```

OUTPUT

Added 1 label, created 1 node, set 3 properties, completed after 16 ms.

```
Create(n:student { Sid: "VTU14502",
Sname:"vijay", deptname:"CSE"
})
```

OUTPUT

Added 1 label, created 1 node, set 3 properties, completed after 12 ms.

```
Create(n:dept{deptname:"cse",deptid:"d001"})
```

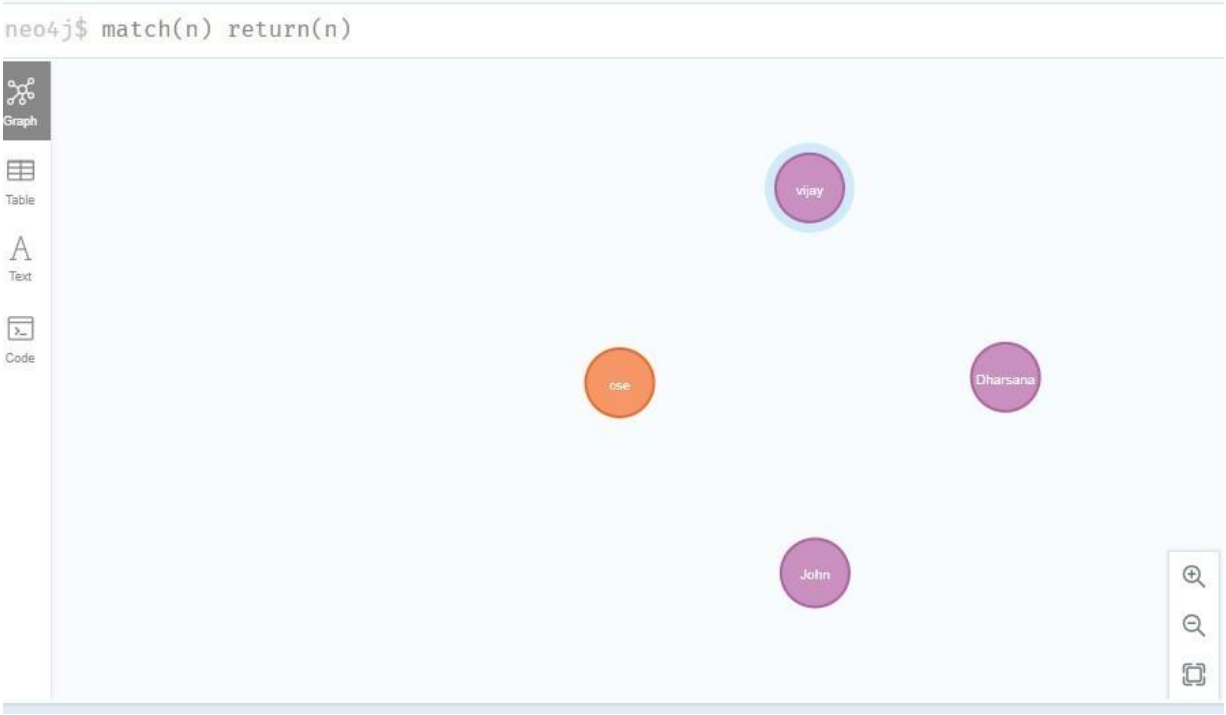
OUTPUT:

Added 1 label, created 1 node, set 2 properties, completed after 72 ms.

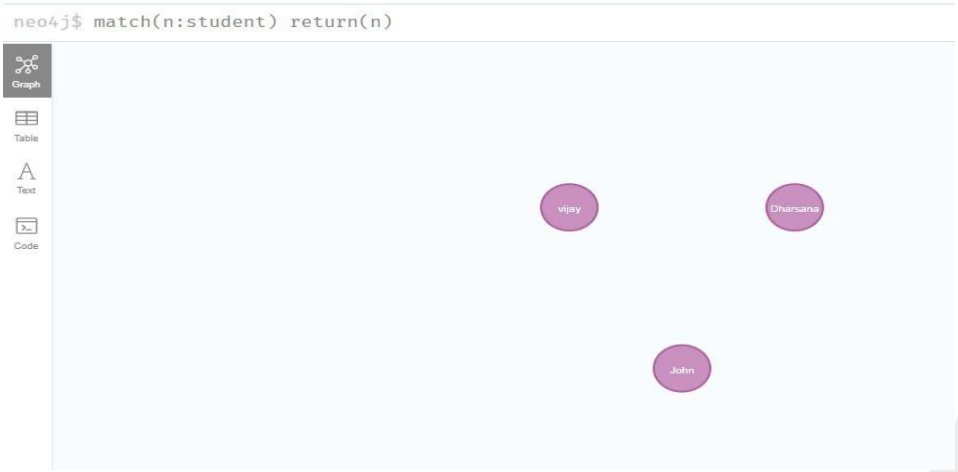
Select all the nodes in your database using match command

 match(n) return(n)

OUTPUT



 match(n:student) return(n) OUTPUT:



a) Create relationship between student and cse .

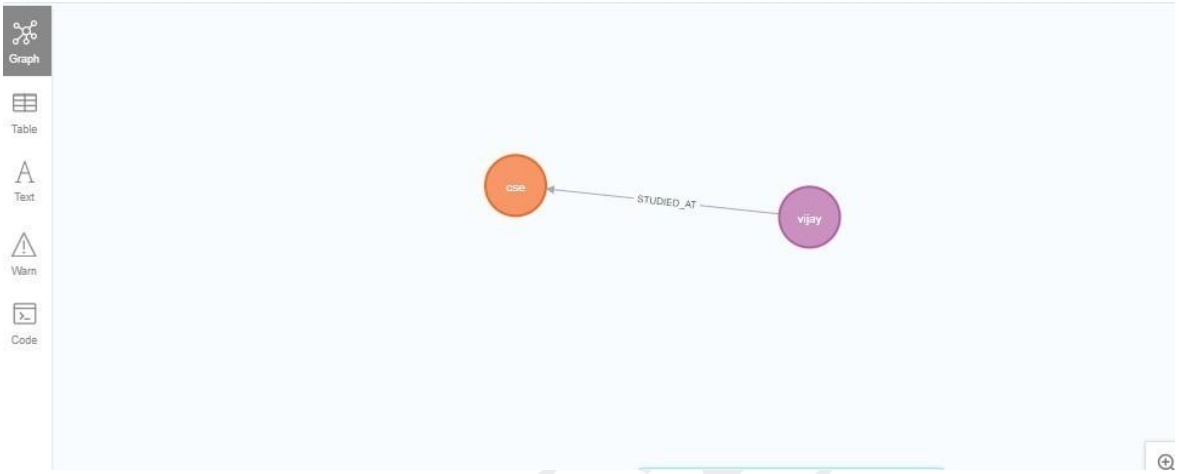
MATCH(s:student),(d:dept) WHERE s.Sname ='vijay' AND d.deptname=' cse'

CREATE(s)-[st:STUDIED_AT]->(d)

return s,d

OUTPUT:

```
MATCH(s:student),(d:dept) WHERE s.Sname ='vijay' AND d.deptname='cse'
CREATE(s)-[st:STUDIED_AT]→(d)
return s,d
```

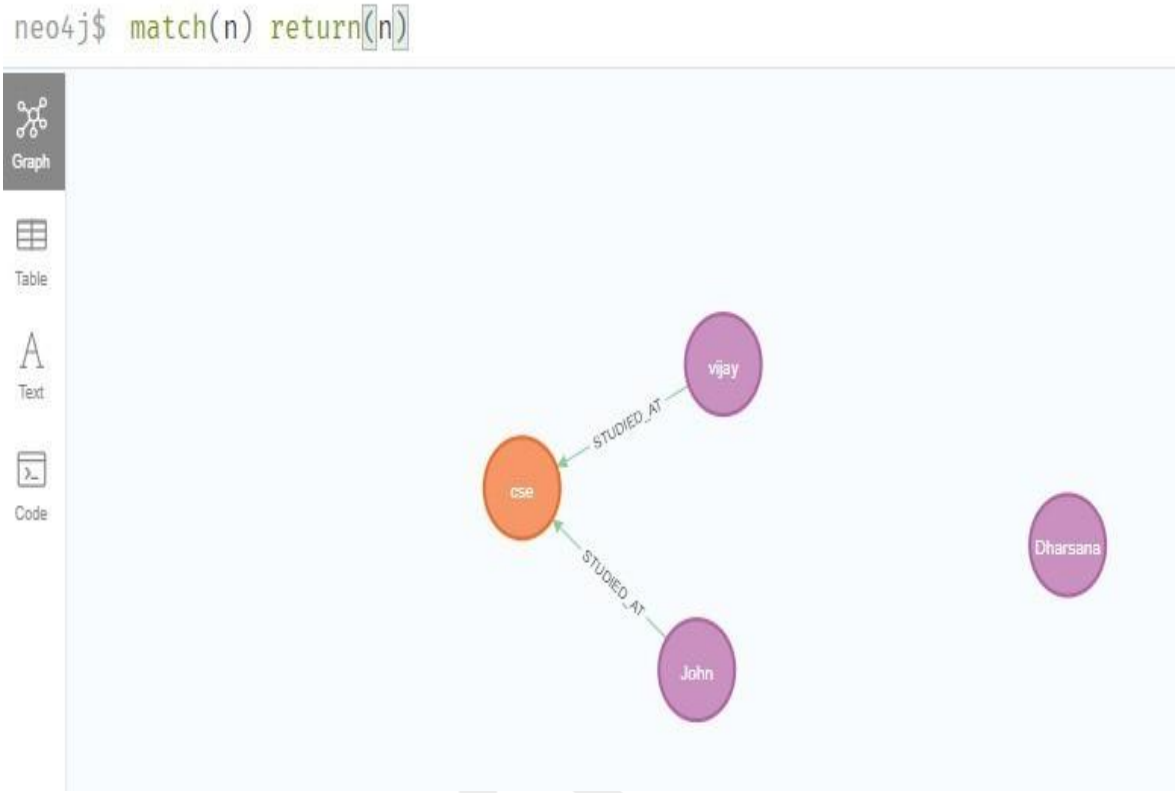


MATCH(s:student),(d:dept) WHERE s.Sname ='John' AND d.deptname='cse'

CREATE(s)-[st:STUDIED_AT]-

>(d) return s,d OUTPUT:

match(n) return(n)

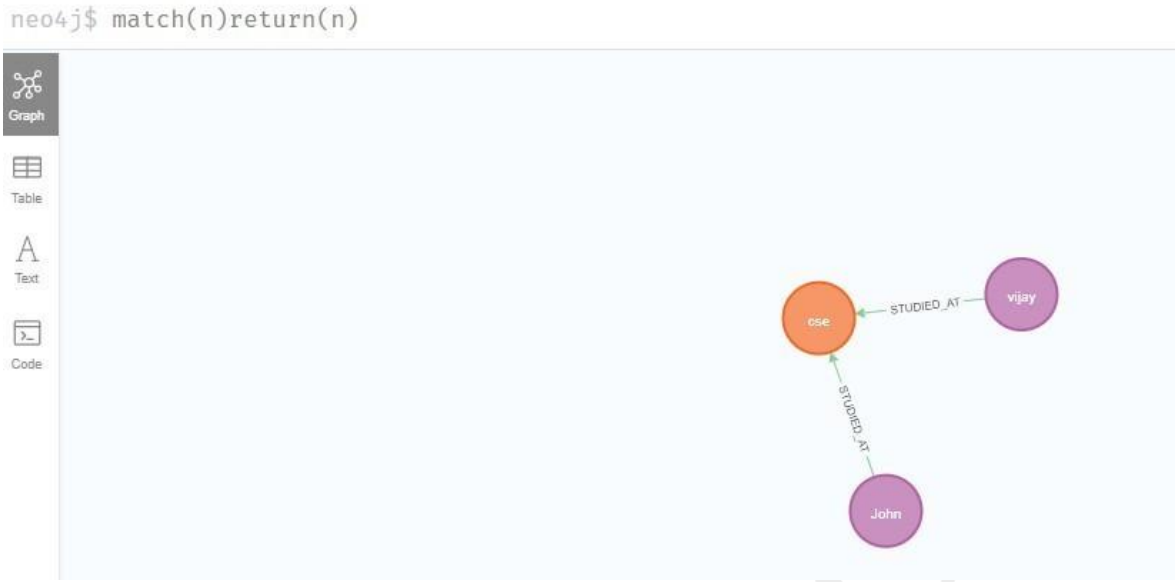


b) Delete a node from student

match(n:student{Sname:'Dharsana'}) DELETE(n)

OUTPUT:

Deleted 1 node, complaeted after 10834 ms.



Result

The implementation of CRUD operations like creating, inserting, finding and removing operations using GraphDB is successfully executed.