TASK 9: CRUD operations in Graph databases CO3, S3

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.

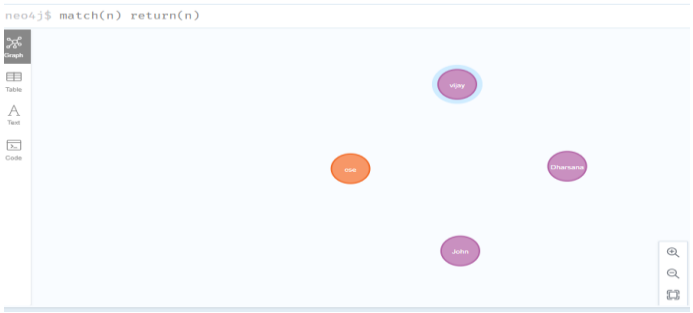
Create(n:student { Sid: "VTU14502",
Sname:"vijay",
deptname:"CSE"
})

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

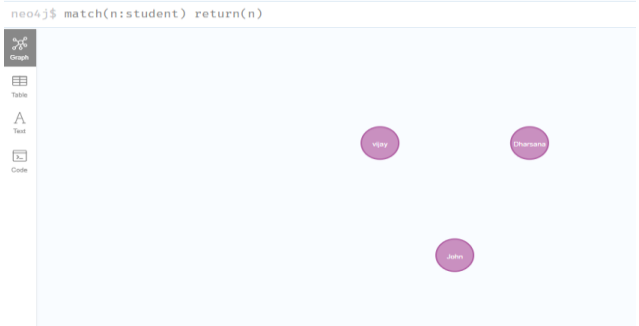
match(n) return(n)

OUTPUT:



match(n:student) return(n)

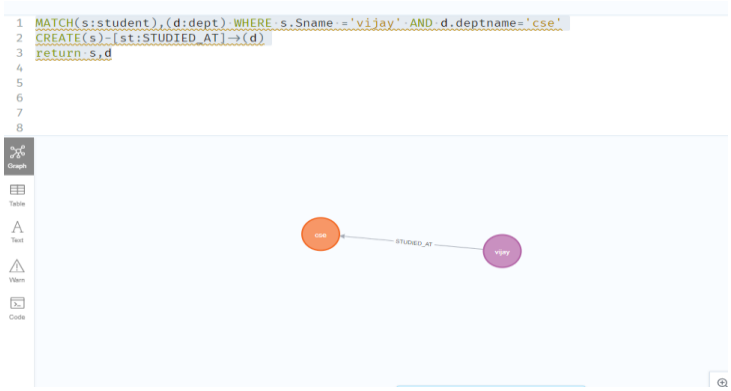
OUTPUT:



a. Create relationship between student and cse .

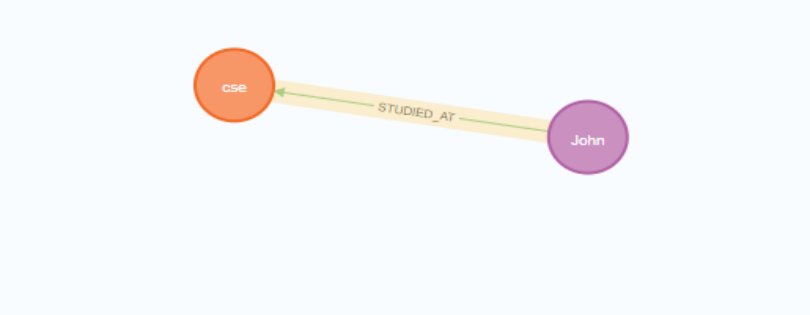
MATCH(s:student),(d:dept) WHERE s.Sname ='vijay' AND d.deptname= 'cse'
CREATE(s)-[st:STUDIED_AT]->(d)
return s,d

OUTPUT:

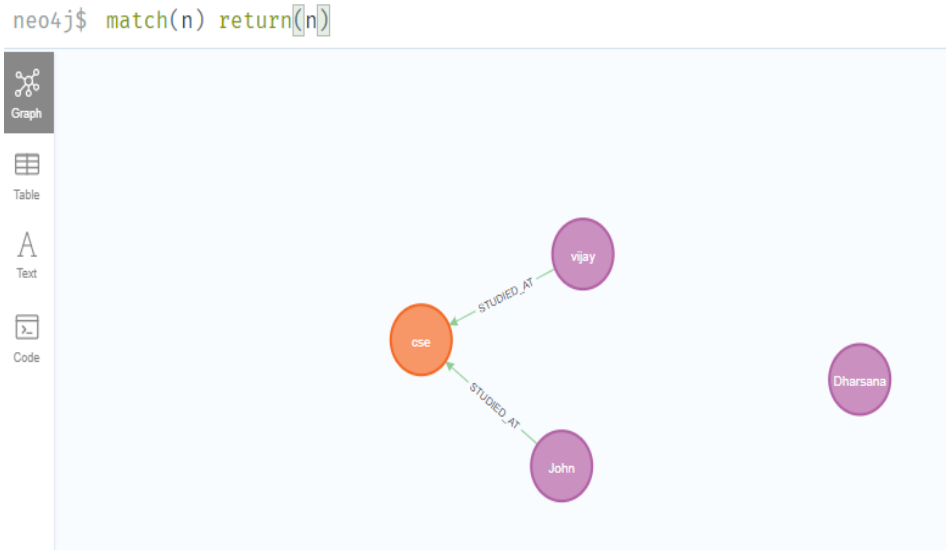


MATCH(s:student),(d:dept) WHERE s.Sname ='John' AND d.deptname='cse'
CREATE(s)-[st:STUDIED_AT]->(d)
return s,d

OUTPUT:



match(n) return(n)

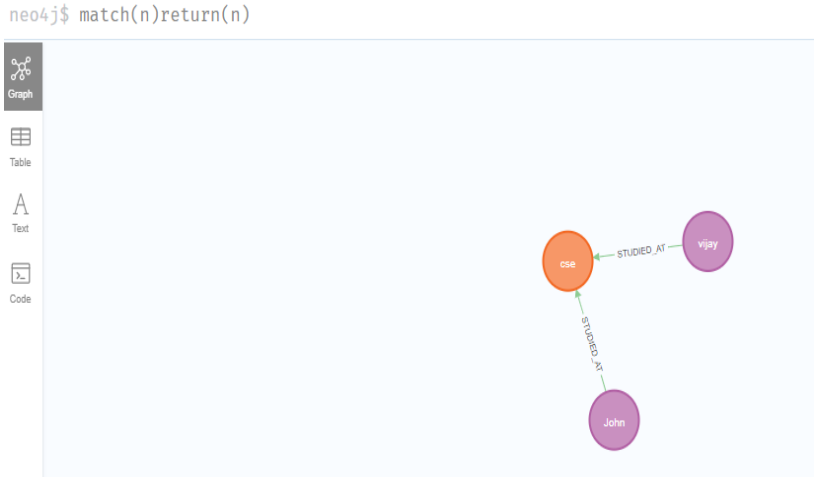


b. Delete a node from student

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

OUTPUT:

Deleted 1 node, complaeted after 10834 ms.



Result:

Thus, the CRUD operations like creating, inserting, querying, finding, deleting operations on graph spaces were executed successfully.