

Task NO: 11

Date: 14/10/25

CRUD operations in Graph Databases.

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

```
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 the relationship within the square braces "[]" depending on the direction of the relationship it is placed between hyphen "-" and arrow "→".

```
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:

```
MATCH (a:label of Node 1), (b:label of Node 2)
WHERE a.name = "name of node 1" AND
b.name = "name of node 2"
CREATE (a) - [:Relation] -> (b)
RETURN a, b
```

Delete 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:

```
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: "VTU 14500", sname: "John",
deptname: "CSE"})
```

output

Added 1 label, Created 1 node, Set 3 properties,
Completed after 232 ms.

```
Create (n:student {sid: "VTU 14501", sname: "Dharsan",
deptname: "EEE"})
```

Output:

Added 1 label, Created 1 node, Set 3 properties,
Completed 16 ms


```
create (w:student {sid: "VTU 14502", Sname:
"vijay", deptname: "CSE"})
```

Output:-

Added 1 label, created 1 node, set 3 properties,
Completed 12 ms

```
create (n:dept {deptname: "CSE", deptid: "d001"})
```

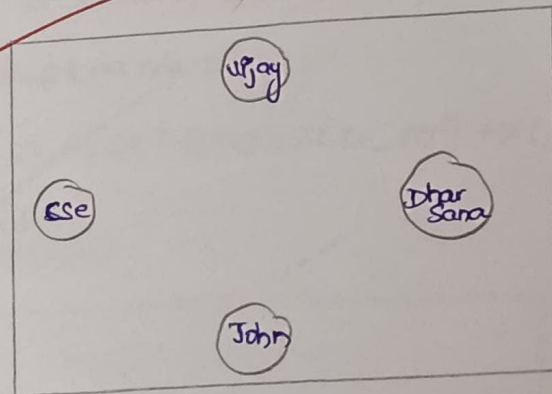
Output:-

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

Select all the nodes in your database using
match command.

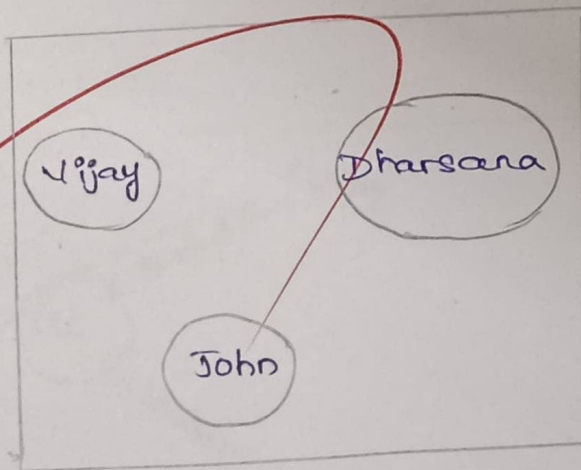
```
* match (n) return (n)
```

output:-



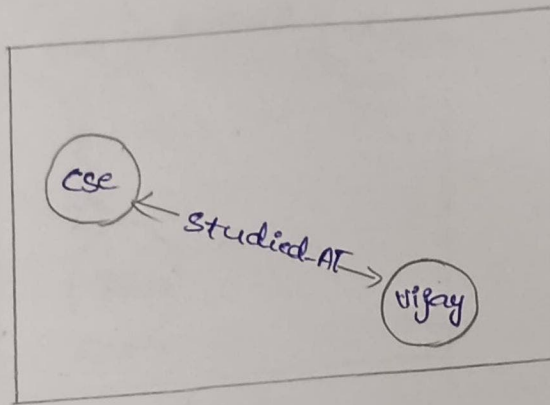
```
* match (n: student) return (n)
```

Output:-



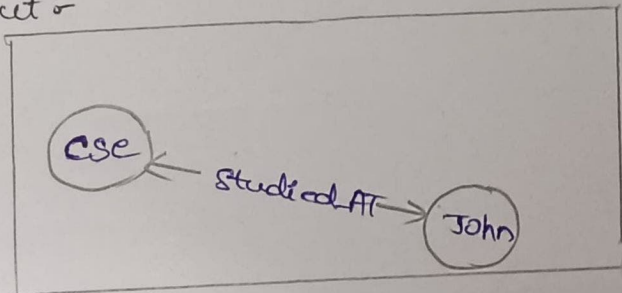
a) create relationship between student and cse
 MATCH (s:student), (d:dept) WHERE s.sname = 'vijay'
 AND d.deptname = 'cse'.
 CREATE(s) - [st: STUDIED_AT] -> (d)
 return s, d

output:

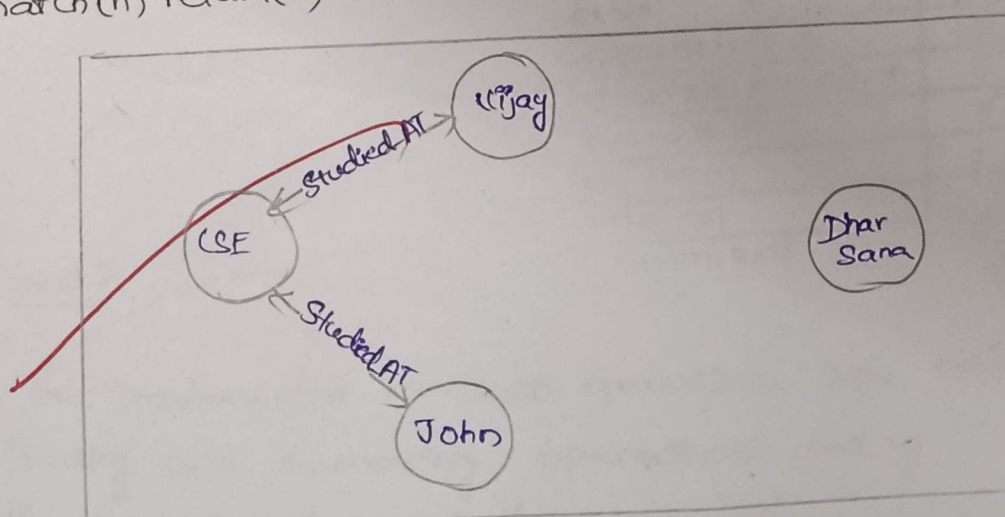


MATCH (s:student), (d:dept) where s.sname = 'John'
 AND d.deptname = 'cse'
 CREATE(s) - [st: STUDIED_AT] -> (d)
 return s, d

Output:



match(n) return(n)

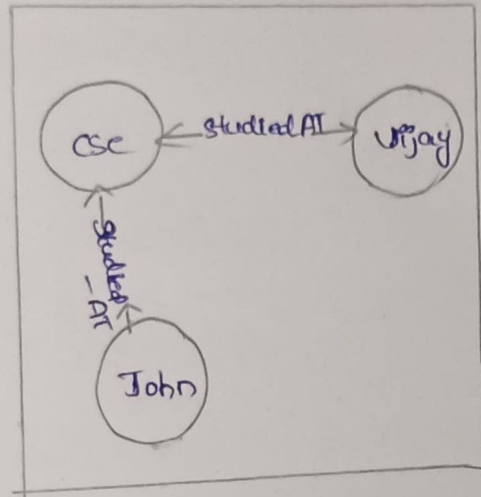


b) delete a node from student

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

Output:-

Deleted 1 node, completed after 10834 ms



VEL TECH	
EX NO.	11
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	10
TOTAL (20)	35
SIGN WITH DATE	

Result:-

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