Task 11:- Date:- 14/10/25

CRUD operations in Graph Database.

Aim:-

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

Create Node with properties:-

properties are the key values pair using with a node stores data. You can create a nodes 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: lable{key1: value, key2: value, ...}).

* Returning the created Node:-

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

MATCH (n) RETURN n.

Create Relationship:-

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 hypen "-" and arrow "→" as shown in the following syntax.

Syntax:-

following is the syntax to create a relationship using the CREATE clauses.

```
CREATE (node1) - [: Relationship Type] → (node 2).
```

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: label of Node1), (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.
```

Deleting a particular Node:-

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

syntax:-

following is the syntax:-

MATCH (node: label {properties ... })

DETACH DELETE Node.

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

```
create (n: student {sid: "VTU14500",
    sname: "john",
    deptname: "CSE"}
  )
```

output:-

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

```
create (n: student {sid: "VTU14501",
  sname: "pharsana",
  deptname: "EEE"}).
```

output:-

Added 1 lable, created 1 node, set 3 properties, Completed after 12 ms.

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

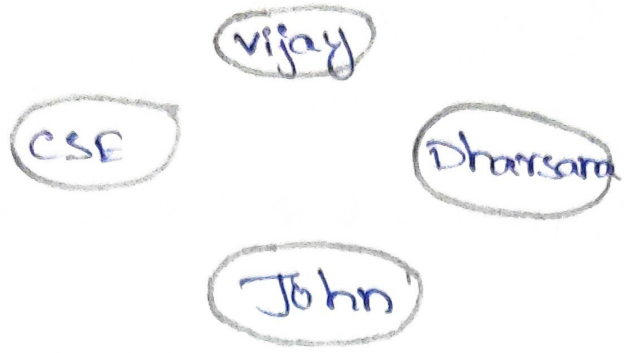
Output:-

Added 1 lable, created 1 Node, set 2 properties, Completed after 72 ms.

Select all nodes in your database using match command

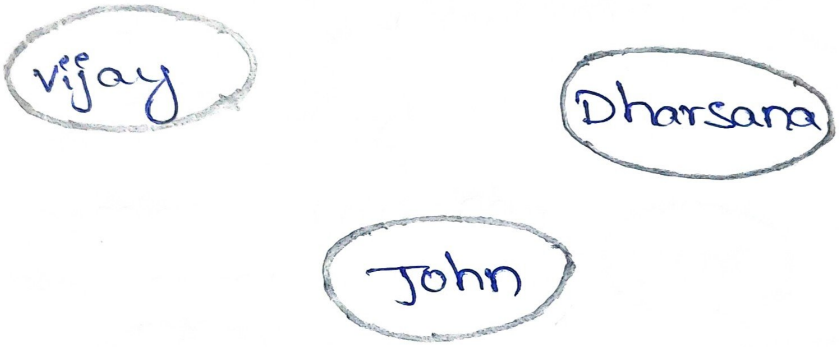
* match (n) return(n)

output:-



* match (n:student) return(n)

output:-



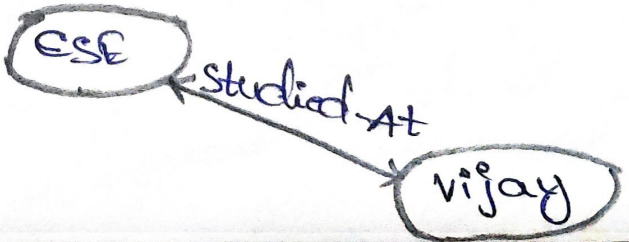
(a) Create relationship between student and CSE

MATCH(s:student),(d:dept) where s.sname = "vijay" AND d.deptname = "CSE"

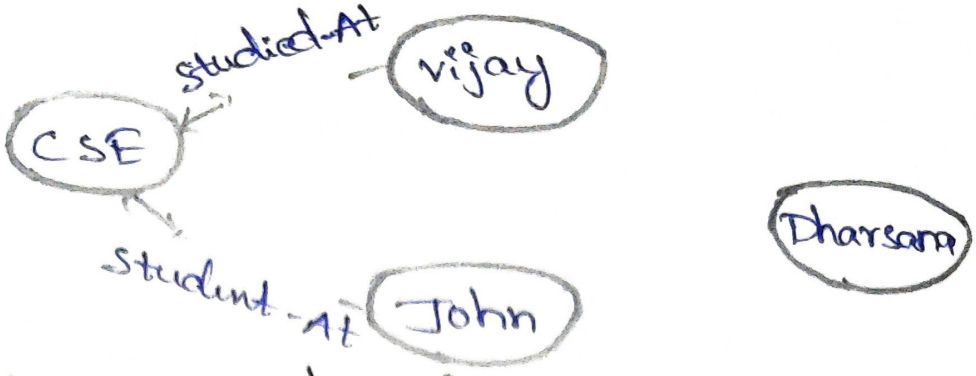
CREATE (s)-[st:student-At]-s(d)

return s, d.

Output:-



match (n) return (n).



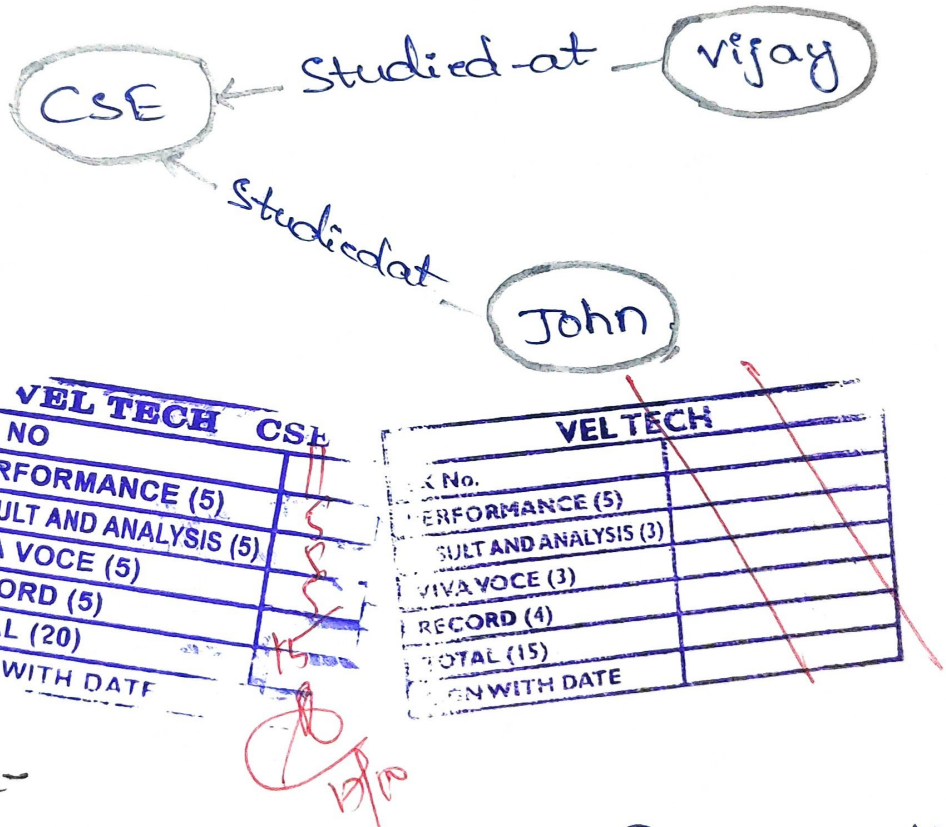
(b) Delete a node from student.

match (n:student {sname: "Dharsana"})

DELETE(n).

Output:-

Deleted 1 Node, completed after 10834 ms.



Result:-

The implementation of CRUD operations like creating, insertion, finding and removing operation using Graph DB is successfully executed.