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School of Computing
B.Tech. – Computer Science and Engineering

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Course Name : Database Management Systems

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DBMS TASK - 9 REPORT

Title: **CRUD operations in Graph databases**

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TASK 9

CRUD operations in Graph databases

AIM:

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

The steps to get started with Neo4j's Aura Graph Database:

Step1: Copy and paste the following link into your web browser: https://neo4j.com/cloud/platform/aura-graph-database/?ref=docs-get-started-dropdown

Step2: Click on "Start Free."

Step3: Choose the option to "Continue with Google."

Step4: Click the "Open" button.

Step5: After clicking "Open," a text file will be automatically downloaded. This file contains your user ID and password details.

Step6: Copy the password from the downloaded text file and paste it where required.

Step7: Close the "Get started with Neo4j with beginner guides" if it's open.

Sep8: You're now ready to begin practicing with the Graph Database.

Create Node with Properties

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

Syntax

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

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

Syntax:

```
MATCH (n) RETURN n
```

Creating Relationships

To create a relationship using the CREATE clause and 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:

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

Syntax:

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 and need to specify the details of the node in the place of "n" in the above query.

Syntax:

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

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

Create a CrickerBoard Node:

create(cb:CricketBoard{BoardID:'BID01',Name:'Chennai Cricket Board', Address:'Chennai', Phone:9988776699}) returncb

Create Team Nodes:

create(t1:Team{teamID:'CCB01',BoardID:'BID01',name:'ABS EXPRESS', Coach:'G.D.RAMESH', Captain:'SAMPATH KUMAR'}) return t1

create(t2:Team{teamID:'CCB02',BoardID:'BID01',name:'AVG EXPRESS',Coach: 'T.KARTHIKH', Captain:'Y.JOHN'}) return t2

Create Player Nodes:

create(p1:Player{PlayerID:'1',TeamID:'CCB01',Name:'Raj',Age:23,DateofBirth:'29-JUN-1996', PlayingRole:'Bowler',email:'rajn@gmail.com'}) return p1

create(p2:Player{PlayerID:'33',TeamID:'CCB01',Name:'Anand',Age:23,DateofBirth:'02-JAN-1999', PlayingRole:'Batsman',email:'balajid@gmail.comm'}) return p2

create(p3:Player{PlayerID:'65',TeamID:'CCB02',Name:'Suresh',Age:27,DateofBirth:'02-JUN-1996', PlayingRole:'Batsman',email:'sureshd@gmail.comm'}) return p3

create(p4:Player{PlayerID:'75',TeamID:'CCB02',Name:'Rohit',Age:33,DateofBirth:'02-JUN-1991', PlayingRole:'Batsman',email:'srohit@gmail.comm'}) return p4

Creating Relationship among CricketBoard and Teams:

match(cb:CricketBoard{BoardID:'BID01'}),(t1:Team{teamID:'CCB01'}) create(cb)-[r:has]->(t1) return cb,r,t1

match(cb:CricketBoard{BoardID:'BID01'}),(t2:Team{teamID:'CCB02'}) create(cb)-[r:has]->(t2) return cb,r,t2

Creating Relationship among Players and Teams:

match(p1:Player{PlayerID:'1'}),(t1:Team{teamID:'CCB01'}) create(p1)-[r1:playfor]->(t1) return p1,r1,t1

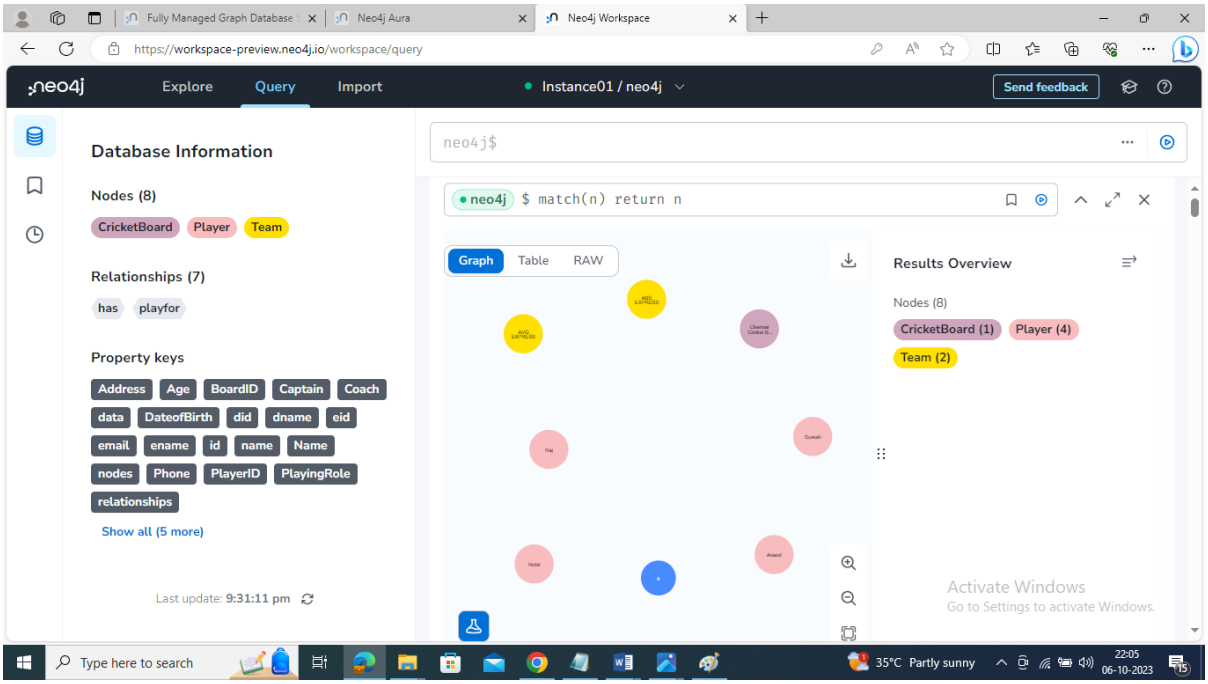
match(p2:Player{PlayerID:'33'}),(t1:Team{teamID:'CCB01'}) create(p2)-[r2:playfor]->(t1) return p2,r2,t1

match(p3:Player{PlayerID:'65'}),(t2:Team{teamID:'CCB02'}) create(p3)-[r3:playfor]->(t2) return p3,r3,t2

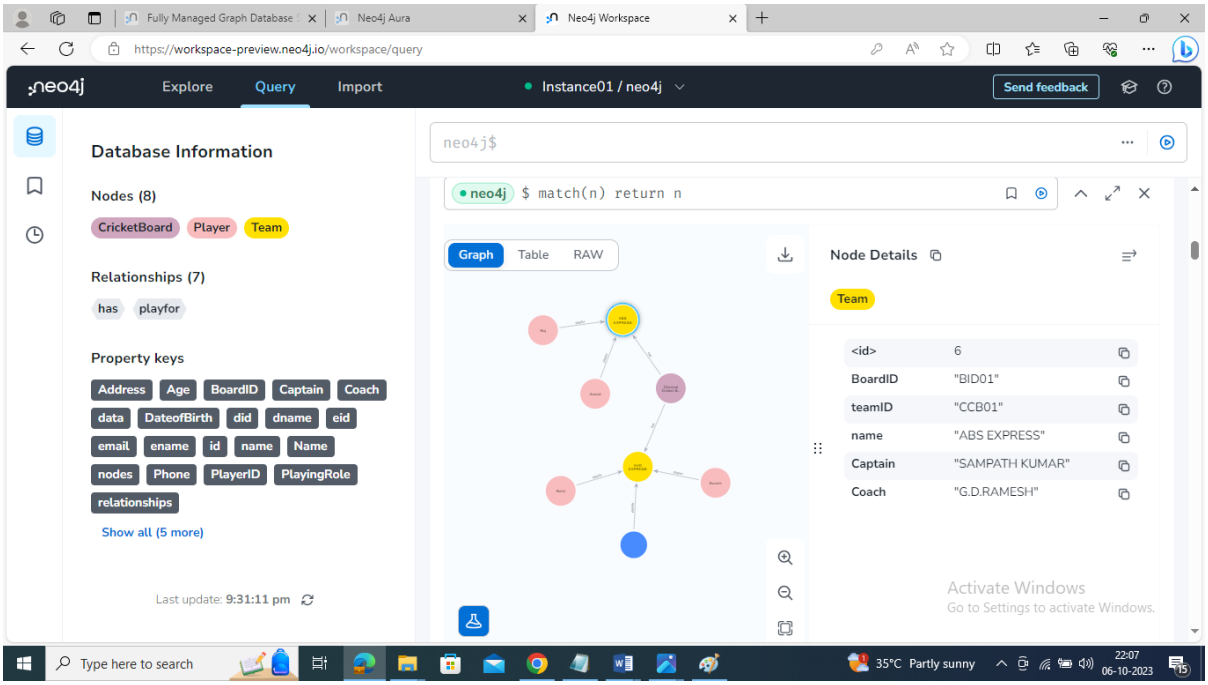
match(p4:Player{PlayerID:'75'}),(t2:Team{teamID:'CCB02'}) create(p3)-[r4:playfor]->(t2) return p4,r4,t2

Display All nodes: match(n) return n

Output:

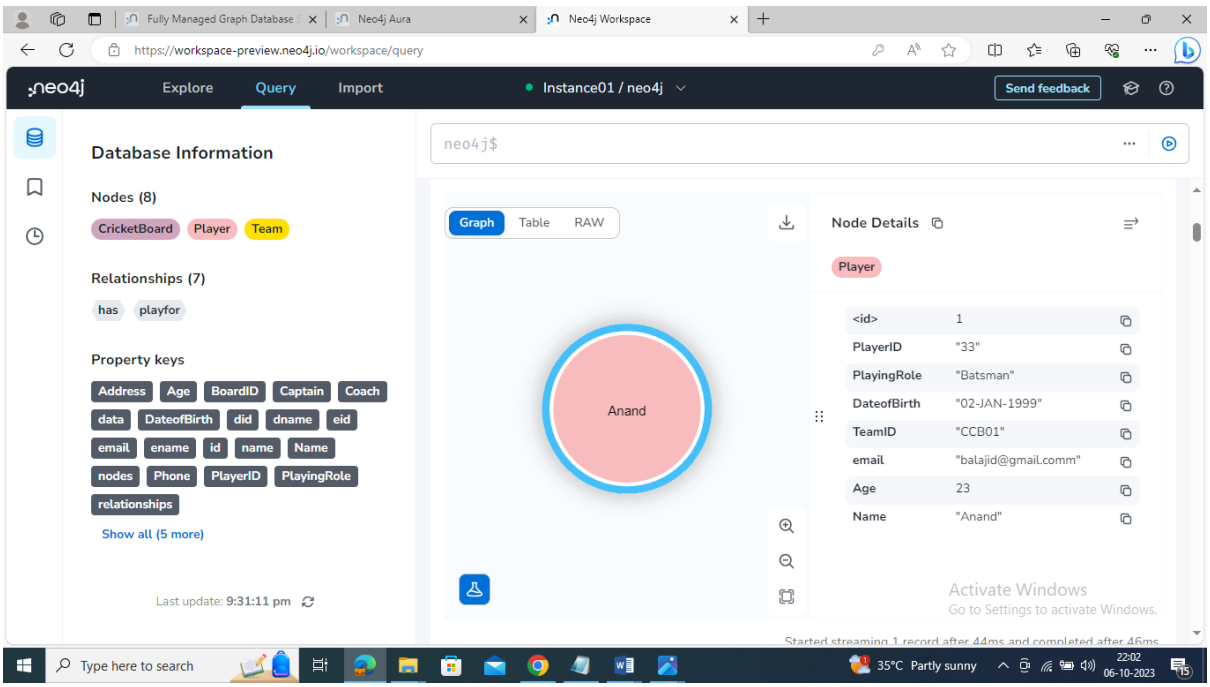


OUTPUT:



Retrieve particular player details:

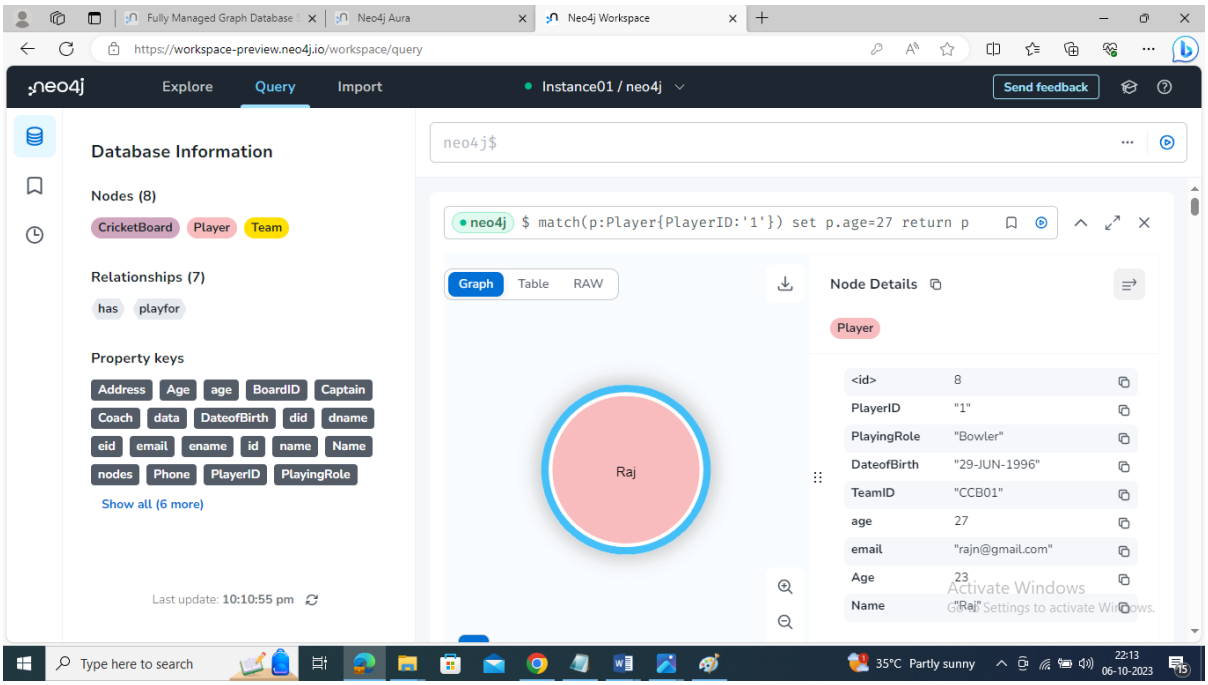
match(p:Player{PlayerID:'33'}) return p



Update particular player details:

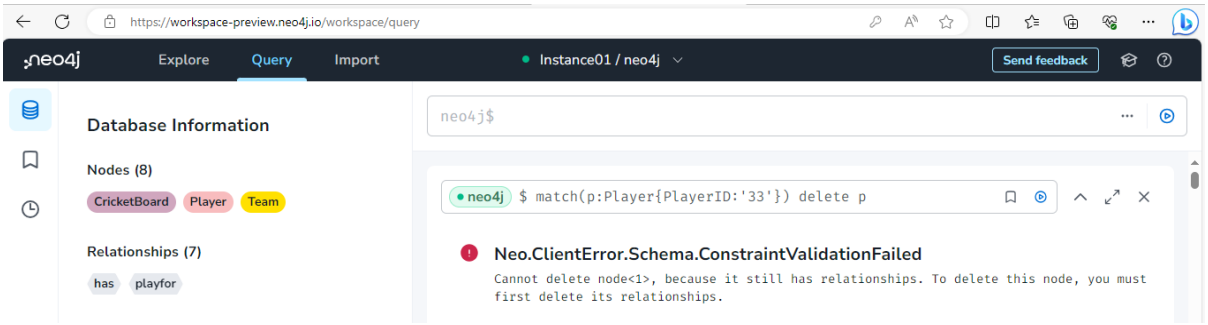
match(p:Player{PlayerID:'1'}) set p.age=27 return p

Output:



Delete particular player from the team:

match(p:Player{PlayerID:'33'}) delete p



Result:

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