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Course : MCS NoSQL (LAB 08)

## Neo4J:

### Creating Nodes:

```
1 CREATE(Dhawan:player{id:1, name: "shikar Dhawan", YOB: 1995, POB: "IND"})
2 CREATE(Jonathan:player {id:2, name: "Jonathan Trott", YOB: 1981, POB: "AUS"})
3 CREATE(Sangakkara:player {id:3, name: "Kumar Sangakkara", YOB: 1977, POB: "SLK"})
4 CREATE(Rohit:player {id:4, name: "Rohit Sharma", YOB: 1987, POB: "IND"})
5 CREATE(Virat:player {id:5, name: "Virat Kohli", YOB: 1988, POB: "IND"})
6 CREATE(Gayle:player {id:7, name: "Chris Gayle", YOB: 1979, POB: "JMC"})
7 CREATE(Ricky:coach {id:6, name: "Ricky Ponting", YOB: 1974, POB: "AUS"})
8 CREATE(Lan:coach {id:8, name: "Lan Botham", YOB: 1955, POB: "ENG"})
9 CREATE(Lee:coach {id:9, name: "Brett Lee", YOB: 1976, POB: "AUS"})
10
```

```
neo4j$ CREATE(Dhawan:player{id:1, name: "shikar Dhawan", YOB: 1995, POB: "IND"}) CREATE(Jonatha...
```



Table

Added 9 labels, created 9 nodes, set 36 properties, completed after 81 ms.

```
1 CREATE (Ind:Country {name: "India"})
2 CREATE (Eng:Country {name: "England"})
3 CREATE (Jmc:Country {name: "Jamaica"})
4 CREATE (Aus:Country {name: "Australia"})
```

```
neo4j$ CREATE (Ind:Country {name: "India"}) CREATE (Eng:Country {name: "England"}) CREATE (Jmc:...
```



Table

Added 4 labels, created 4 nodes, set 4 properties, completed after 7 ms.

### Creating Relationships:

```
1 MATCH (a:player), (b:Country) WHERE a.name = "Shikar Dhawan" AND
  b.name = "India"
2 CREATE (a)-[r: BATSMAN_OF]→(b)
3 RETURN a,b
```

```
neo4j$ MATCH (a:player), (b:Country) WHERE a.name = "Shika...
```



Graph



Table



Text

\*(2)

player(1)

Country(1)

\*(1)

BATSMAN\_OF(1)



## Case Expressions:

```
1 MATCH (n:player)
2 RETURN n.name,
3 CASE n.POB
4   WHEN n.POB = 'India' THEN 1
5   WHEN n.POB = 'Srilanka' THEN 2
6   ELSE 3
7 END AS Result
```

```
1 MATCH (n:player)
2 RETURN n.name,
3 CASE n.YOB
4   WHEN n.YOB > 1990 THEN 1
5   Else 2
6 END AS Result
```

## Boolean Operators

```
neo4j$ MATCH (n) WHERE 1970 < n.YOB AND n.YOB ≤ 1985 RETURN n.name
```

neo4j\$ MATCH (n) WHERE 1970 < n.YOB AND n.YOB ≤ 1985 RETU...

Table	n.name
1	"Shikar Dhawan"
2	"Sangakkara"
3	"Gayle"
4	"Ricky"

Temporal Operators

1 WITH

2

localdatetime({year:1998, month:06, day:27, hour:12, minute:31, second:14}) AS aDateTime,

3 duration({years: 23, nanoseconds: 2}) AS aDuration

4 RETURN aDateTime + aDuration, aDateTime - aDuration

Server is taking a long time to respond...

neo4j\$ WITH localdatetime({year:1998, month:06, day:27, ho...

Table	aDateTime + aDuration	aDateTime - aDuration
1	"2021-06-27T12:31:14.000000002"	"1975-06-27T12:31:13.999999998"

## Distinct Operators

```
1 CREATE
2   (a:player {name: 'Raj', POB: 'India'}),
3   (b:player {name: 'Kumar', POB: 'Canada'}),
4   (c:player {name: 'Hareesma', POB: 'India'}),
5   (d:player {name: 'Rohin', POB: 'South Korea'})
6 WITH [a, b, c, d] AS ps
7 UNWIND ps AS p
8 RETURN DISTINCT p.POB
```

```
neo4j$ CREATE (a:player {name: 'Raj', POB: 'India'}), (b:p...
```

Table	p.POB
A Text	1 "India"
> Code	2 "Canada"
	3 "South Korea"

## String Operators

```
1 MATCH (n)
2 WHERE n.POB =~ '^A.*ia'
3 RETURN n.name, n.POB
```

```
neo4j$ MATCH (n) WHERE n.POB =~ '^A.*ia' RETURN n.name, n....
```

	n.name	n.POB
1	"Ricky"	"Australia"

## Property Operators

```
1 MATCH (n)
2 WHERE exists(n.YOB)
3 RETURN n.name, n.YOB
```

```
neo4j$ MATCH (n) WHERE exists(n.YOB) RETURN n.name, n.YOB
```

	n.name	n.YOB
1	"Shikar Dhawan"	1985
2	"Rohit"	1988
3	"Virat"	1992
4	"Sangakkara"	1977
5	"Gayle"	1979

## Map Operators : Static

```
1 WITH {player: {name: 'Raj', YOB: 1998}} AS p
2 RETURN p.player.name
```

## Map Operators : Dynamic

{mykey:"name"}

```
⚠ 1 WITH {player:{name: 'Raj', YOB: 1998}} AS a
   2 RETURN a[$myKey] AS result
   3
```

## List Operators

```
1 MATCH (n)
2 WHERE size([label IN labels(n) WHERE label IN ['player', 'coach']
  | 1]) > 0
3 RETURN count(n)
```

```
neo4j$ MATCH (n) WHERE size([label IN labels(n) WHERE labe...
```



Table



Text

count(n)

1

13

## Patterns:

(virat)-->(india)

(virat)-->( india)<--(rohit)

(n:player)-->(india)

(virat)-[:BATSMAN\_OF]->(India)

# Temporal Values:

1 Return date() as currentDate

2

Server is taking a long time to respond...

neo4j\$ Return date() as currentDate

Table

currentDate

1

"2021-04-15"

Text

1 WITH date({year: 1998, month: 06, day: 27}) AS d

2 RETURN d.year, d.quarter, d.month, d.week, d.weekYear, d.day, d.ordinalDay, d.dayOfWeek, d.dayOfQuarter

Server is taking a long time to respond...

neo4j\$ WITH date({year: 1998, month: 06, day: 27}) AS d RE...

Table

d.year d.quarter d.month d.week d.weekYear d.day d.ordinalDay d.dayOfWeek d.dayOfQuar

1

1998 2 6 26 1998 27 178 6 88

Text

1 WITH datetime({

2 year: 1998, month: 06, day: 27,

3 hour: 12, minute: 31, second: 14, nanosecond: 645876123,

4 timezone: 'Europe/Stockholm'

5 }) AS d

6 RETURN d.hour, d.minute, d.second, d.millisecond, d.microsecond, d.nanosecond

# Spatial Values:

```
1 WITH
2   point({latitude:toFloat('13.83'), longitude:toFloat('56.10')})
   AS match1,
3   point({latitude:toFloat('13.25'), longitude:toFloat('56.61')})
   AS match2
4 RETURN toInteger(distance(match1, match2)/1000) AS km
```

neo4j\$ WITH point({latitude:toFloat('13.83'), longitude:to...

<div>Table</div>	km
1	84
<div>Text</div>	

# List:

neo4j\$ RETURN [x IN range(0,50) WHERE x % 3 = 0 ] AS result

Server is taking a long time to respond...

neo4j\$ RETURN [x IN range(0,50) WHERE x % 3 = 0 ] AS result

<div>Table</div>	result
1	[0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48]
<div>Text</div>	

```
1 MATCH (n)
2 RETURN DISTINCT ([label IN labels(n)]) as result
3
```



```
neo4j$ MATCH (n) RETURN DISTINCT ([label IN labels(n)]) as...
```



Table

result

1

["player"]



Text

2

["coach"]



## Map:

```
1 MATCH (btman:player {name: 'Shikar Dhawan'})-[:BATSMAN_OF]→  
  (cntry:country)  
2 RETURN btman{.name, .YOB, Countries: collect(cntry{.name})}  
3
```

