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Neo4j

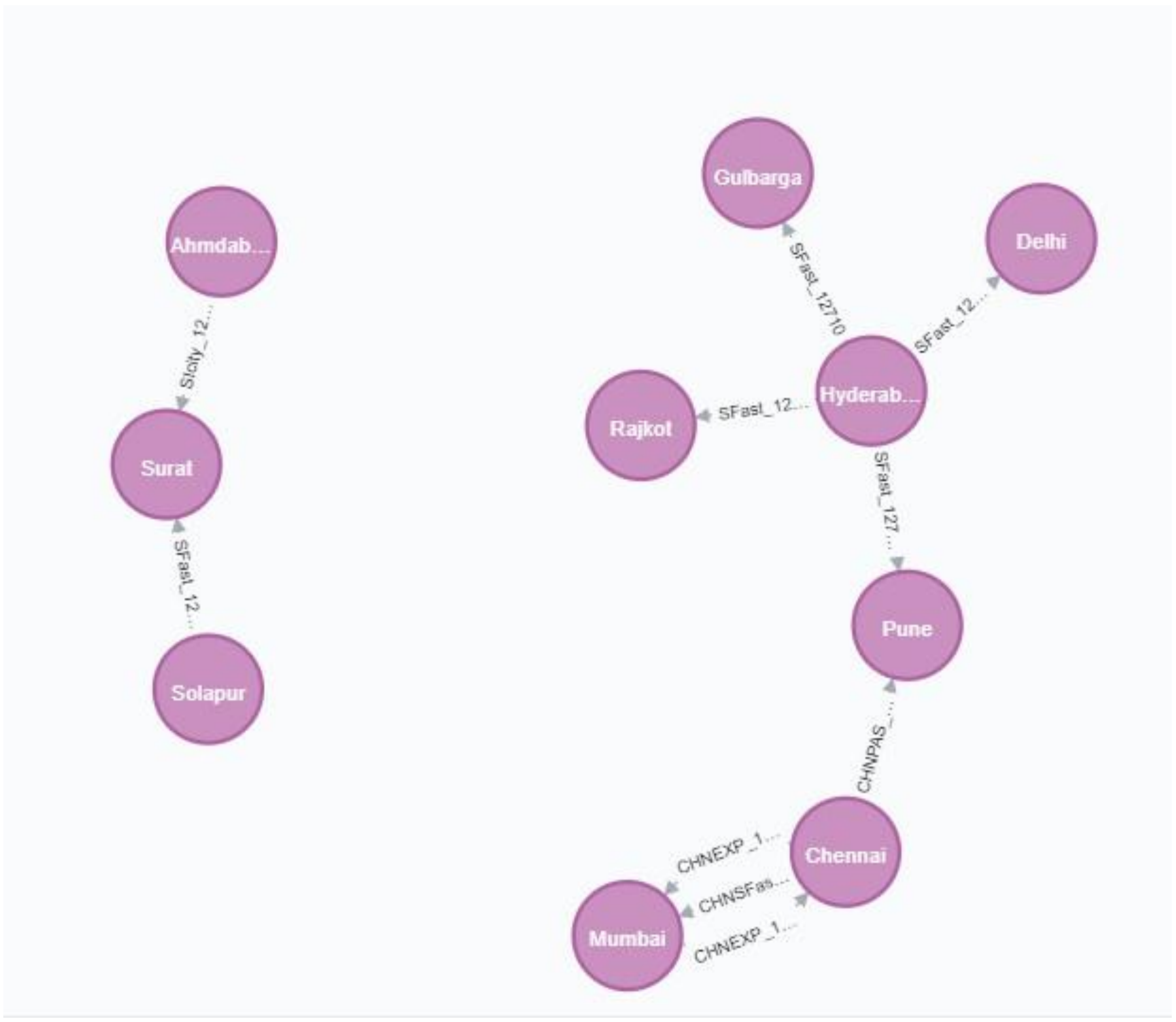
1. **Create 10 nodes**

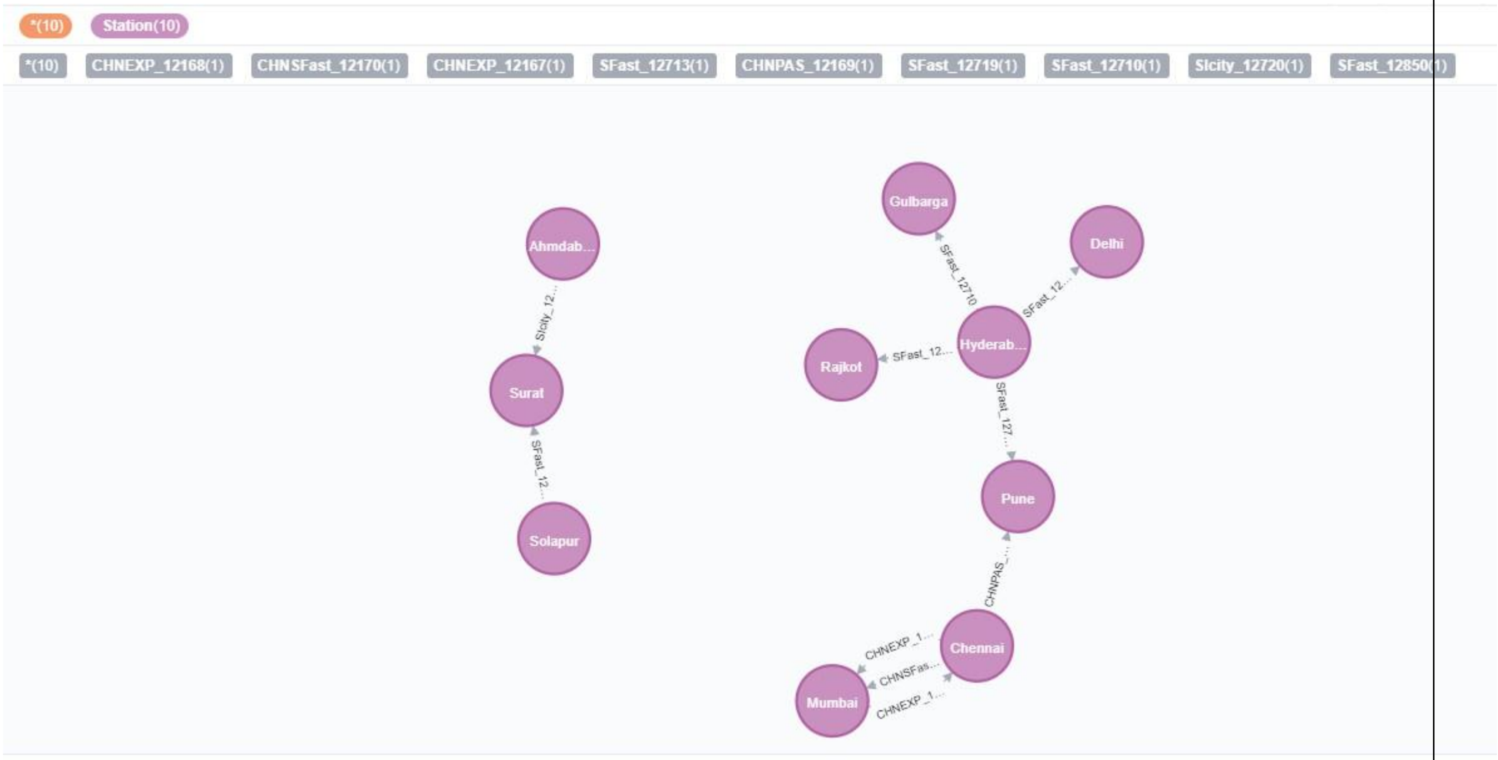
```
CREATE (Chennai:Station {name: "Chennai", stncode:"MAS"})
CREATE (Mumbai:Station {name: "Mumbai", stncode:"CST"})
CREATE (Pune:Station {name: "Pune", stncode:"PNE"})
CREATE (Solapur:Station {name: "Solapur", stncode:"SUR"})
CREATE (Delhi:Station {name: "Delhi", stncode:"DHY"})
CREATE (Hyderabad:Station {name: "Hyderabad", stncode:"HYD"})
CREATE (Gulbarga:Station {name: "Gulbarga", stncode:"GBA"})
CREATE (Ahmdabad:Station {name: "Ahmdabad", stncode:"AMD"})
CREATE (Surat:Station {name: "Surat", stncode:"SRT"})
CREATE (Rajkot:Station {name: "Rajkot", stncode:"RJKT"})
```

2. **Create links**

```
MERGE (Chennai)-[:CHNEXP_12167]-(Mumbai)
MERGE (Mumbai)-[:CHNEXP_12168]-(Chennai)
MERGE (Chennai)-[:CHNPAS_12169]-(Pune)
MERGE (Chennai)-[:CHNSFast_12170]-(Mumbai)
MERGE (Hyderabad)-[:SFast_12710]-(Gulbarga)
MERGE (Hyderabad)-[:SFast_12712]-(Rajkot)
MERGE (Hyderabad)-[:SFast_12713]-(Pune)
MERGE (Hyderabad)-[:SFast_12719]-(Delhi)
MERGE (Ahmdabad)-[:SIcity_12720]-(Surat)
MERGE (Solapur)-[:SFast_12850]-(Surat)
```

OUTPUT:


Ahmdab…
Sicity_12…
Surat
SFast_12…
Solapur
Gulbarga
SFast_12710
Delhi
SFast_12…
Hyderab…
SFast_12…
Rajkot
SFast_127…
Pune
CHNPAS_…
Chennai
CHNEXP_1…
CHNSFas…
CHNEXP_1…
Mumbai

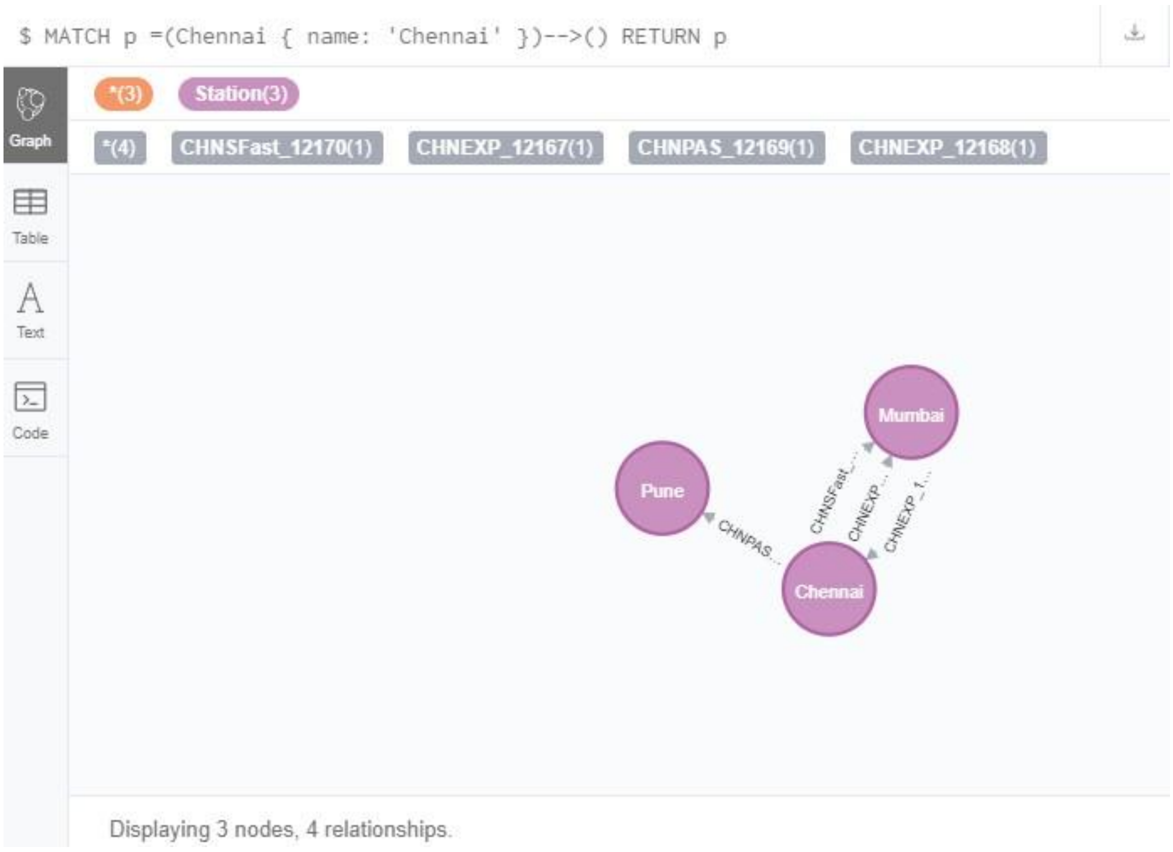


Displaying 10 nodes, 10 relationships.

Cypher Queries:

1) **Train having source or destination as Chennai**

```
MATCH p =(Chennai { name: 'Chennai' })-->() RETURN p
```



```
$ MATCH p =(Chennai { name: 'Chennai' })-->() RETURN p
```

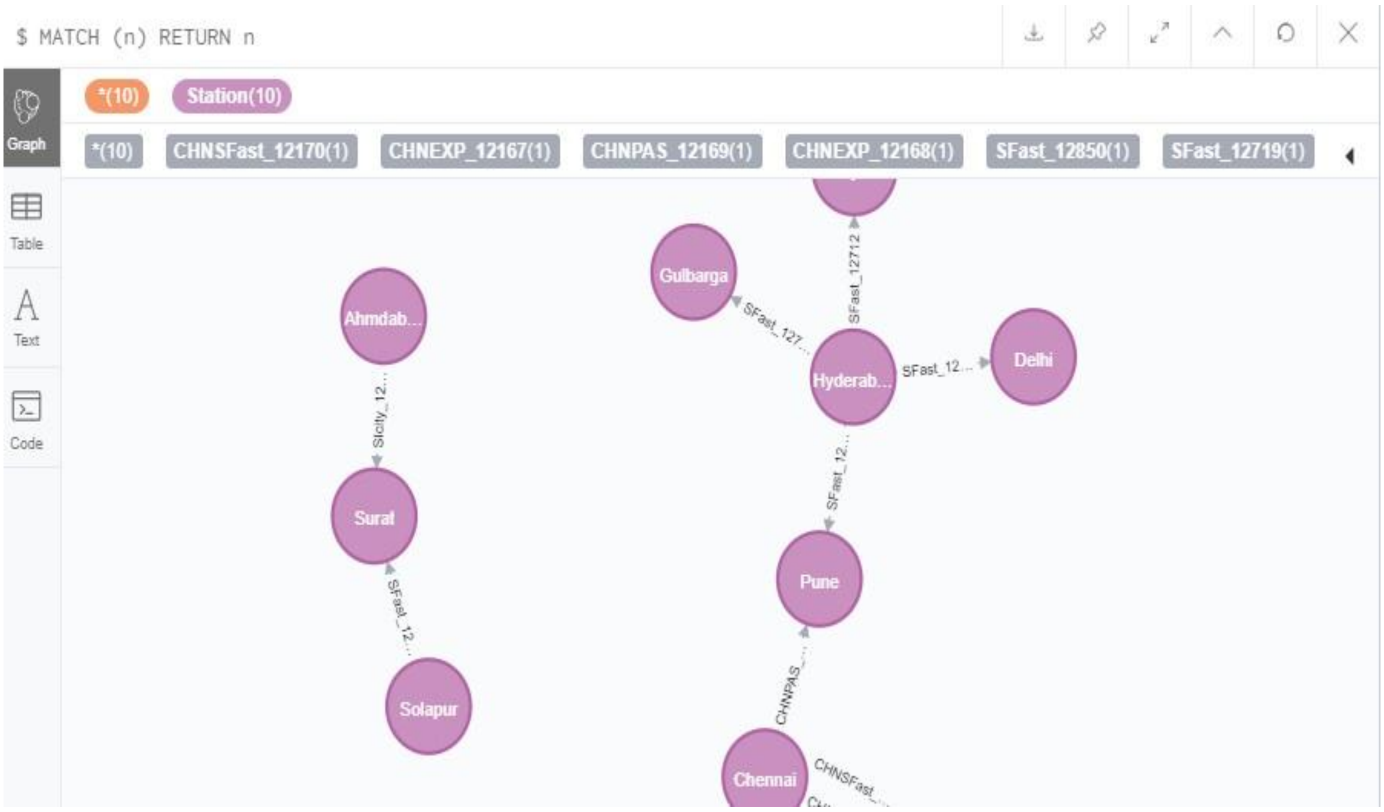
*(3) Station(3)

*(4) CHNSFast_12170(1) CHNEXP_12167(1) CHNPAS_12169(1) CHNEXP_12168(1)

Displaying 3 nodes, 4 relationships.

2) Find train connectivity among all stations

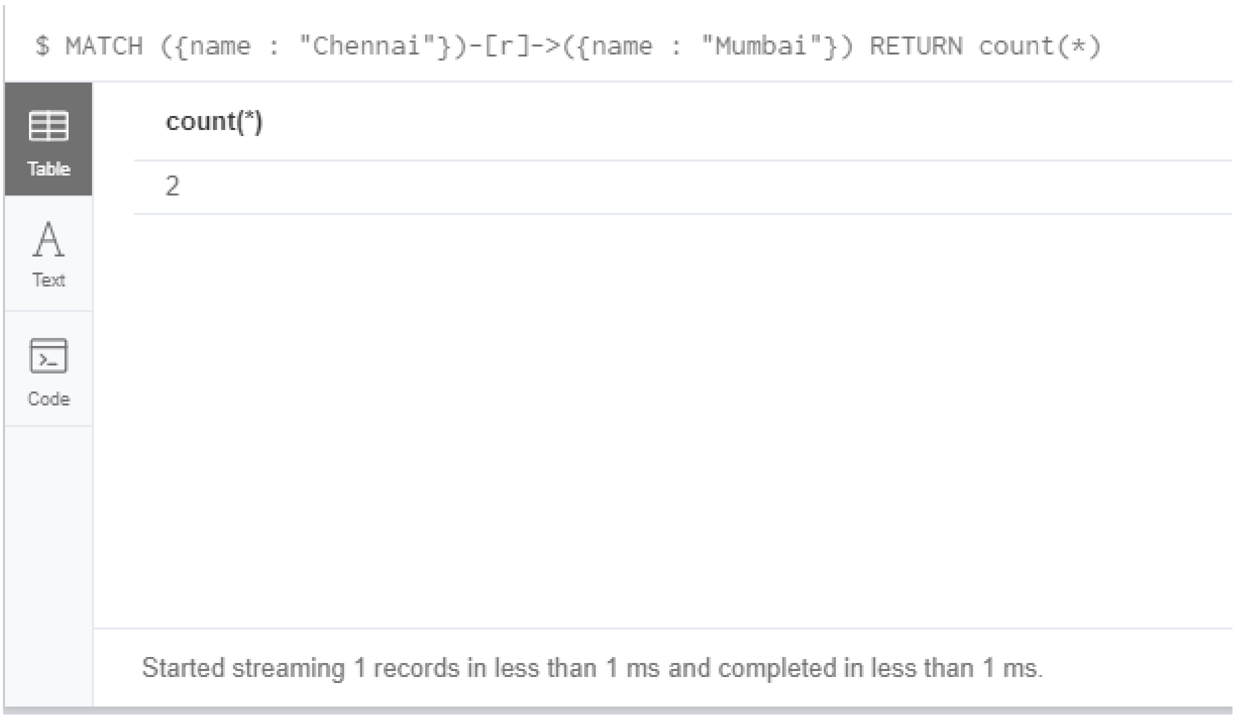
MATCH (n) RETURN n



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

3) Count number of trains between Chennai to Mumbai

```
MATCH ({name : "Chennai"})-[r]->({name : "Mumbai"})
RETURN count(*)
```



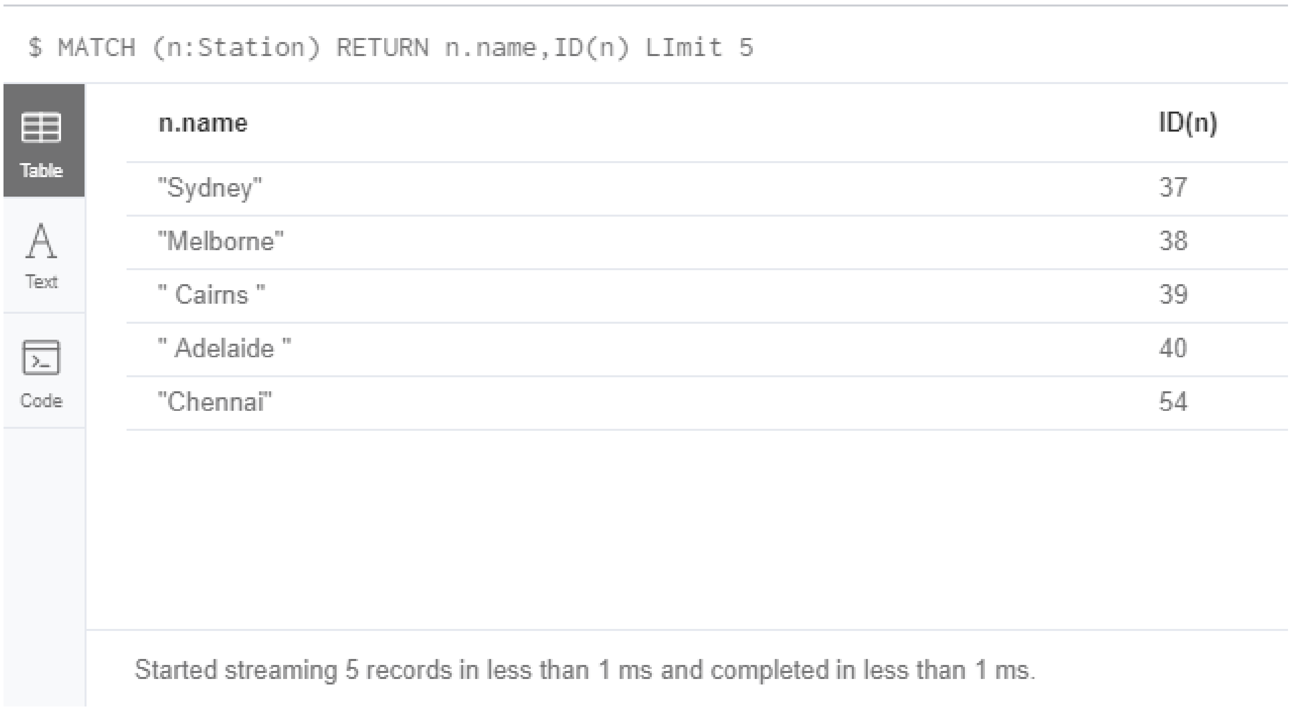
```
$ MATCH ({name : "Chennai"})-[r]->({name : "Mumbai"}) RETURN count(*)
```

count(*)
2

Started streaming 1 records in less than 1 ms and completed in less than 1 ms.

4) Find nodes and nodeid

MATCH (n:Station) RETURN n.name,ID(n) LImit 5



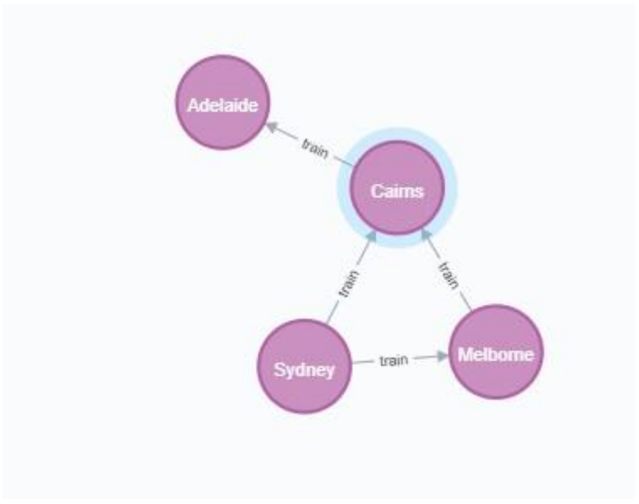
```
$ MATCH (n:Station) RETURN n.name,ID(n) LImit 5
```

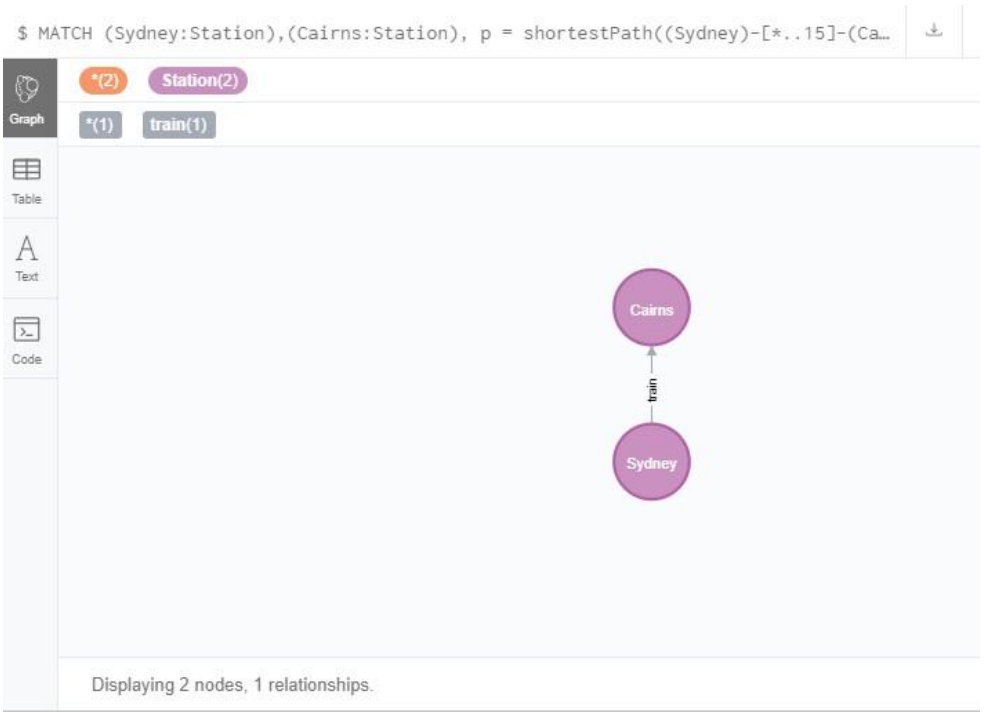
n.name	ID(n)
"Sydney"	37
"Melborne"	38
" Cairns "	39
" Adelaide "	40
"Chennai"	54

Started streaming 5 records in less than 1 ms and completed in less than 1 ms.

4)Find Shortest path among two stations(that's we will prefer direct train instead of break journey)

```
CREATE (Sydney:Station {name: "Sydney", stncode:"SYD"})

CREATE (Melborne:Station {name: "Melborne", stncode:"MLB"})

CREATE (Cairns:Station {name: " Cairns ", stncode:"CAI"})

CREATE (Adelaide:Station {name: " Adelaide ", stncode:"ADE"})

MERGE (Sydney)-[:train]-( Melborne)

MERGE (Melborne)-[:train]-(Cairns)

MERGE (Cairns)-[:train]-( Adelaide)

MERGE (Melborne)-[:train]-( Sydney)

MERGE (Sydney)-[:train]-( Cairns)

MATCH (Sydney:Station),(Cairns:Station),

p = shortestPath((Sydney)-[*..15]-(Cairns))

WHERE id(Sydney) = 42 AND id(Cairns) = 44

RETURN p
```



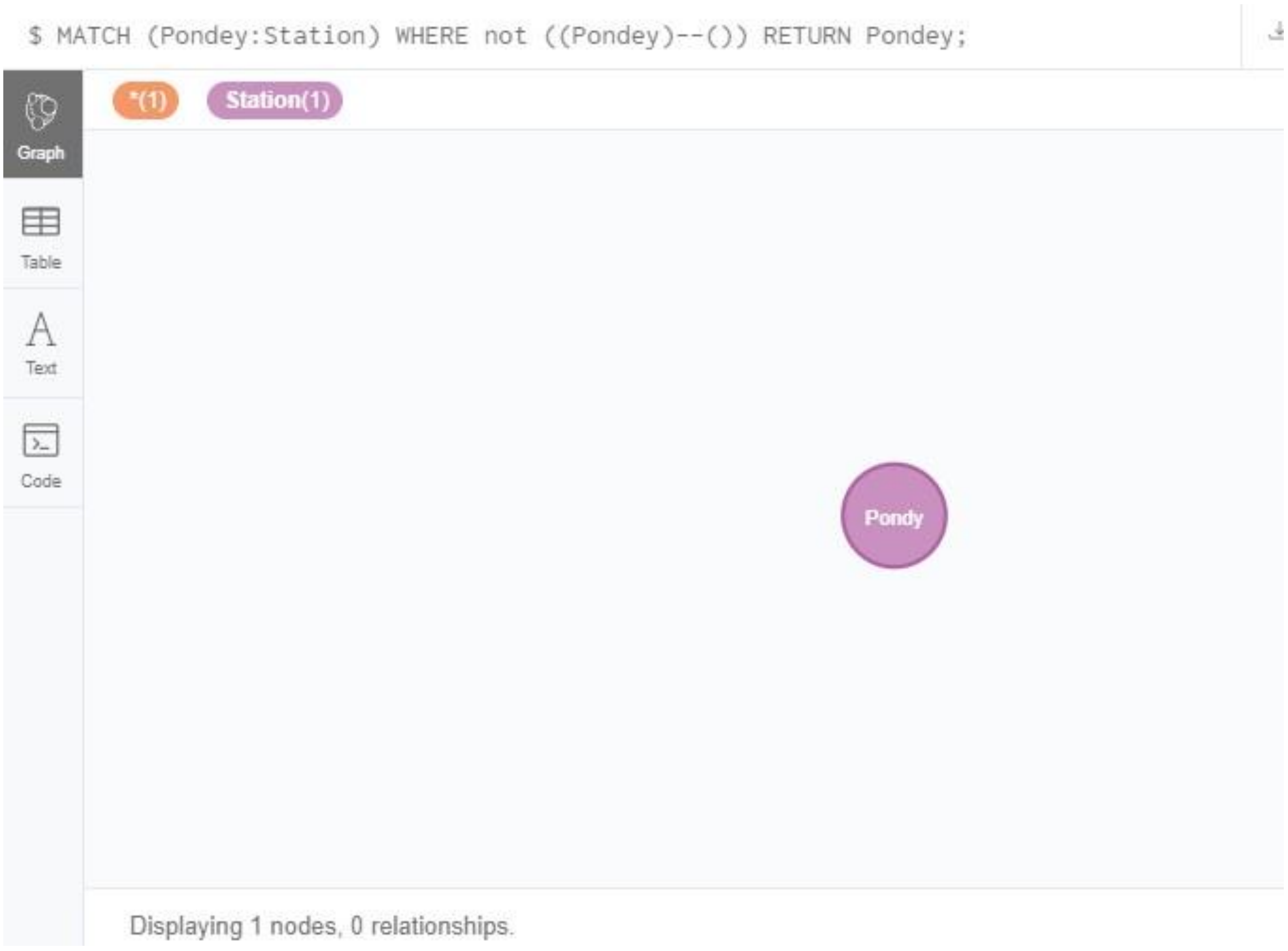


```
$ MATCH (Sydney:Station),(Cairns:Station), p = shortestPath((Sydney)-[*..15]-(Ca…
```

Displaying 2 nodes, 1 relationships.

5) City that don't have train route

MATCH (Pondey:Station) WHERE not ((Pondey)--()) RETURN Pondey;



```
$ MATCH (Pondey:Station) WHERE not ((Pondey)--()) RETURN Pondey;
```

Displaying 1 nodes, 0 relationships.