CMPINF 2110

Week 13

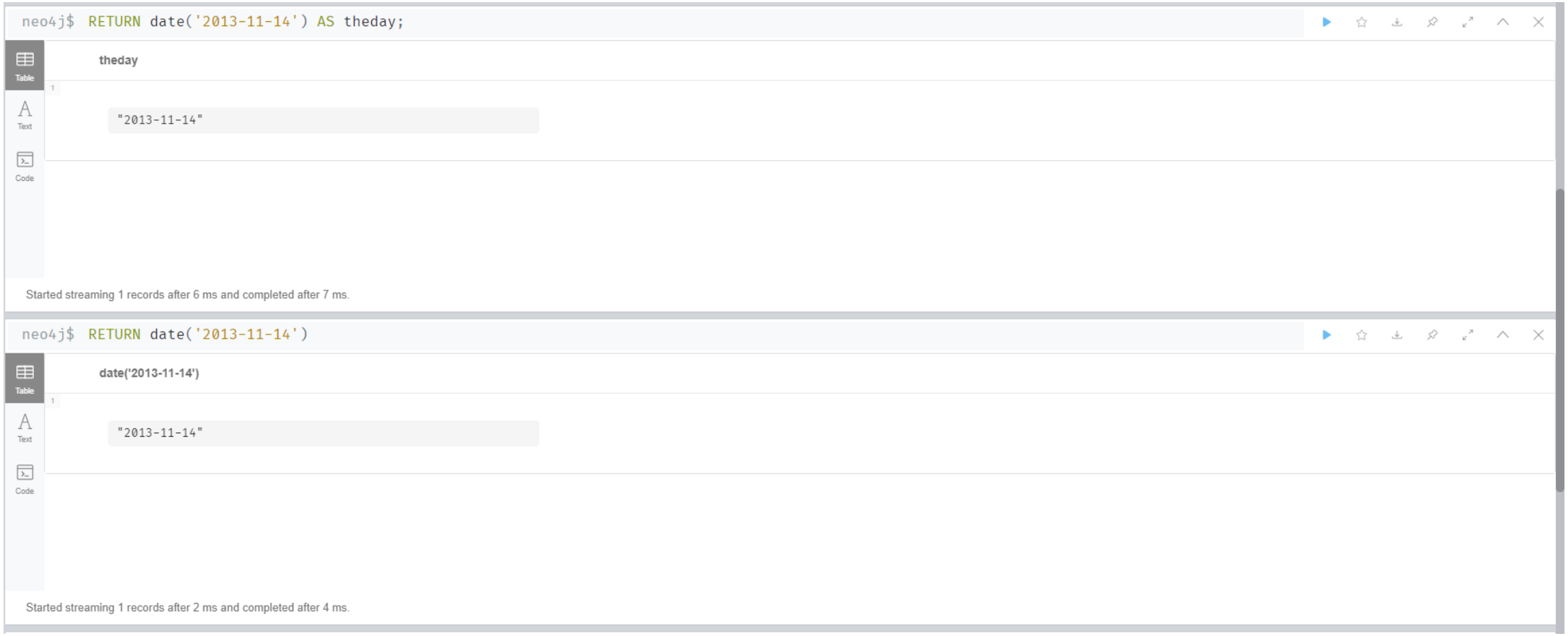
More Graph examples with Neo4j and Cypher

Dates and DateTime Neo4j

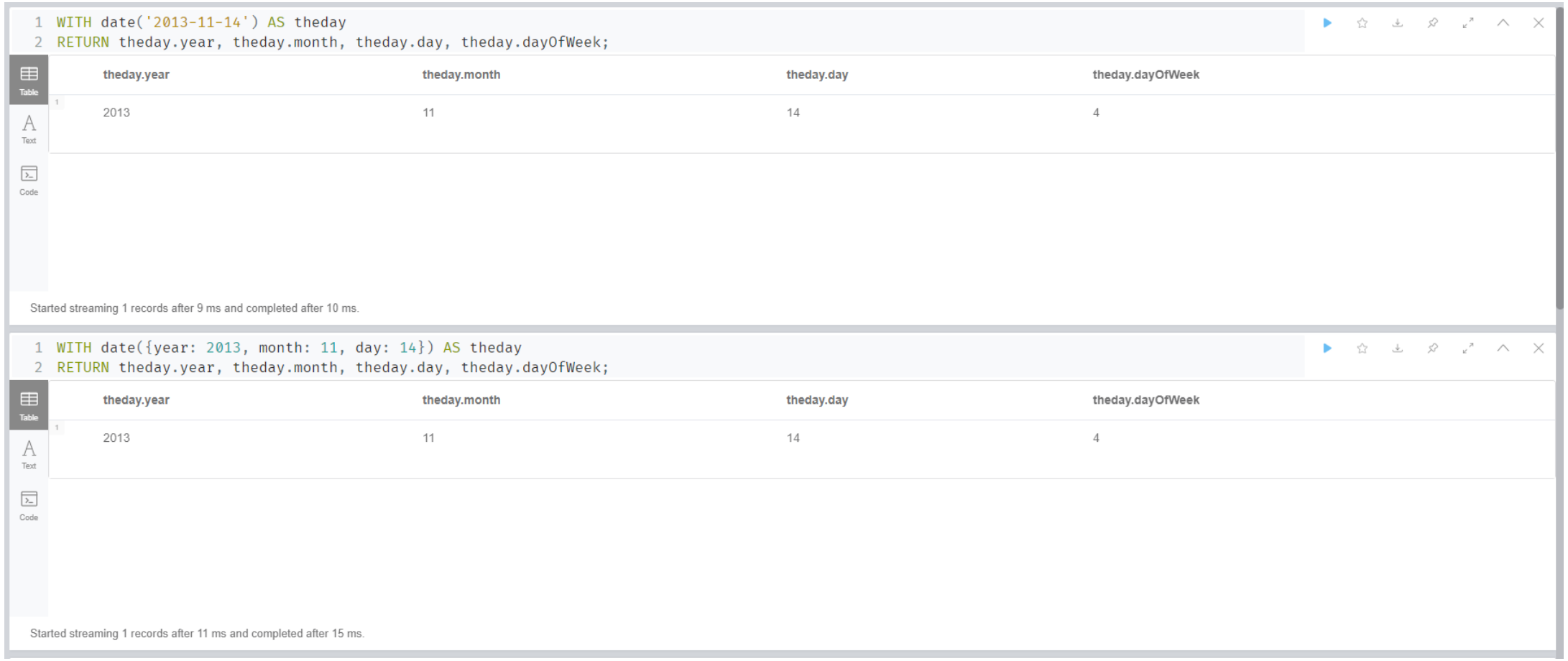
- Creating date and DateTime:
  - https://neo4j.com/docs/cypher-manual/current/syntax/temporal/

- Extracting DateTime components:
  - https://neo4j.com/docs/cypher-manual/current/syntax/temporal/#cypher-temporal-accessing-components-temporal-instants

Simple example to create a date and return it



Multiple ways to create a date, but once created can extract datetime components



```
1 WITH date('2013-11-14') AS theday
2 RETURN theday.year, theday.month, theday.day, theday.dayOfWeek;
```

Table | Text | Code

	theday.year	theday.month	theday.day	theday.dayOfWeek
1	2013	11	14	4

Started streaming 1 records after 9 ms and completed after 10 ms.

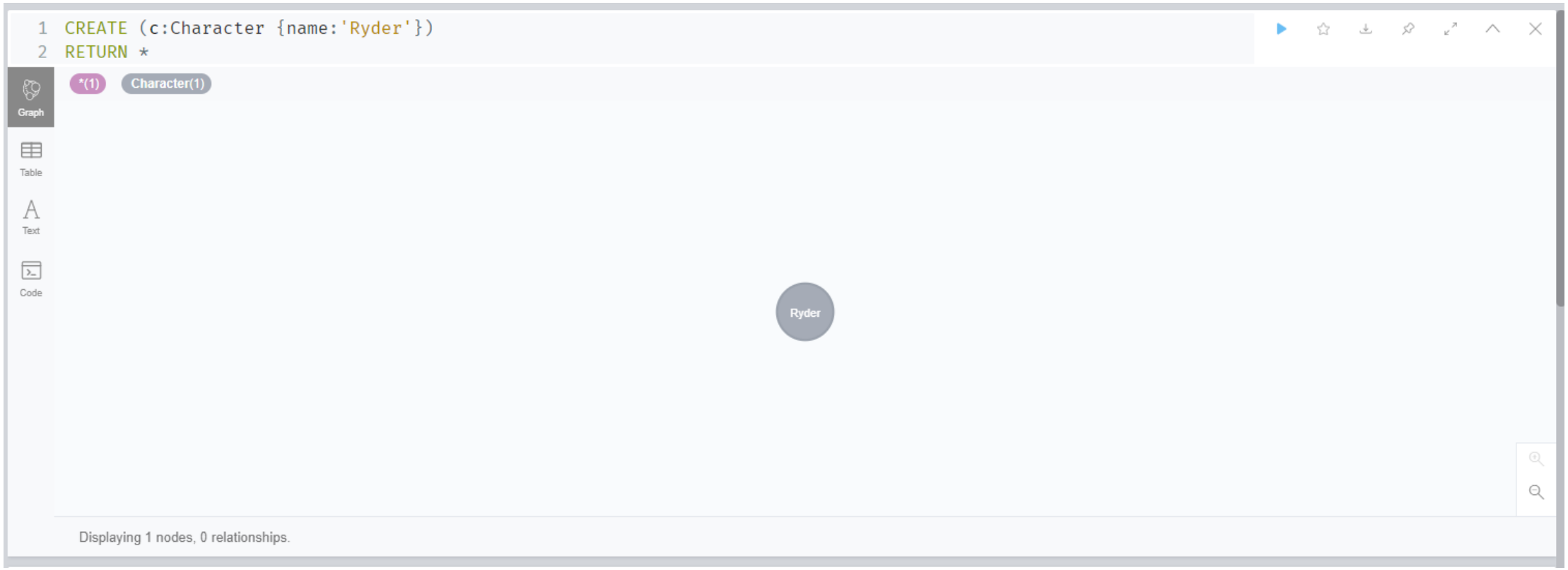
```
1 WITH date({year: 2013, month: 11, day: 14}) AS theday
2 RETURN theday.year, theday.month, theday.day, theday.dayOfWeek;
```

Table | Text | Code

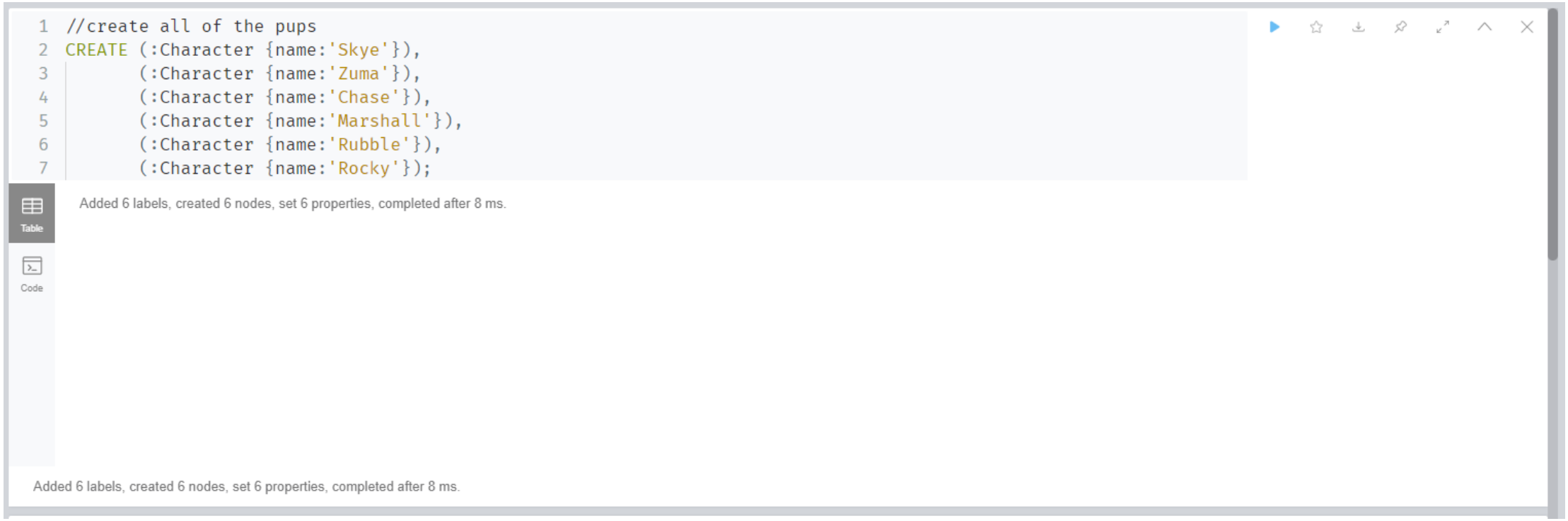
	theday.year	theday.month	theday.day	theday.dayOfWeek
1	2013	11	14	4

Started streaming 1 records after 11 ms and completed after 15 ms.

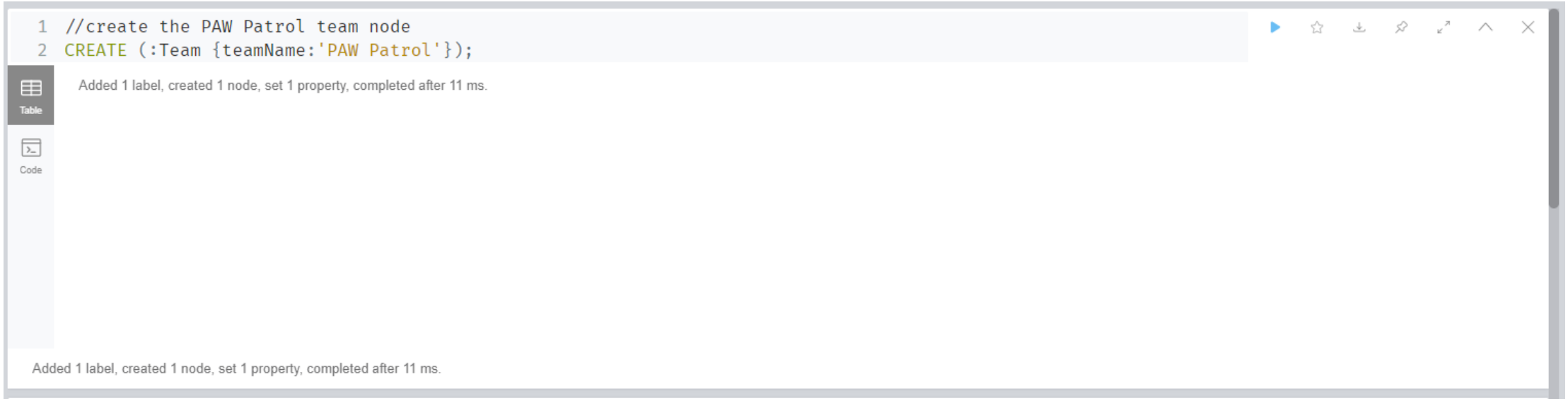
PAW Patrol example – create Ryder Node as Label Character



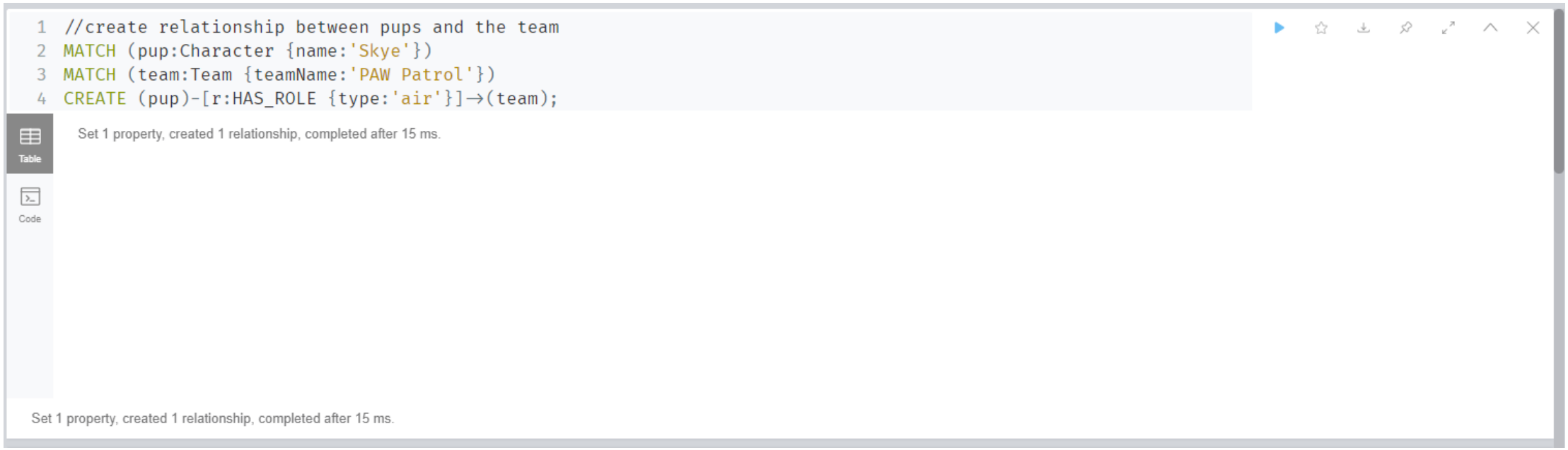
Create all Pups as Character Label nodes



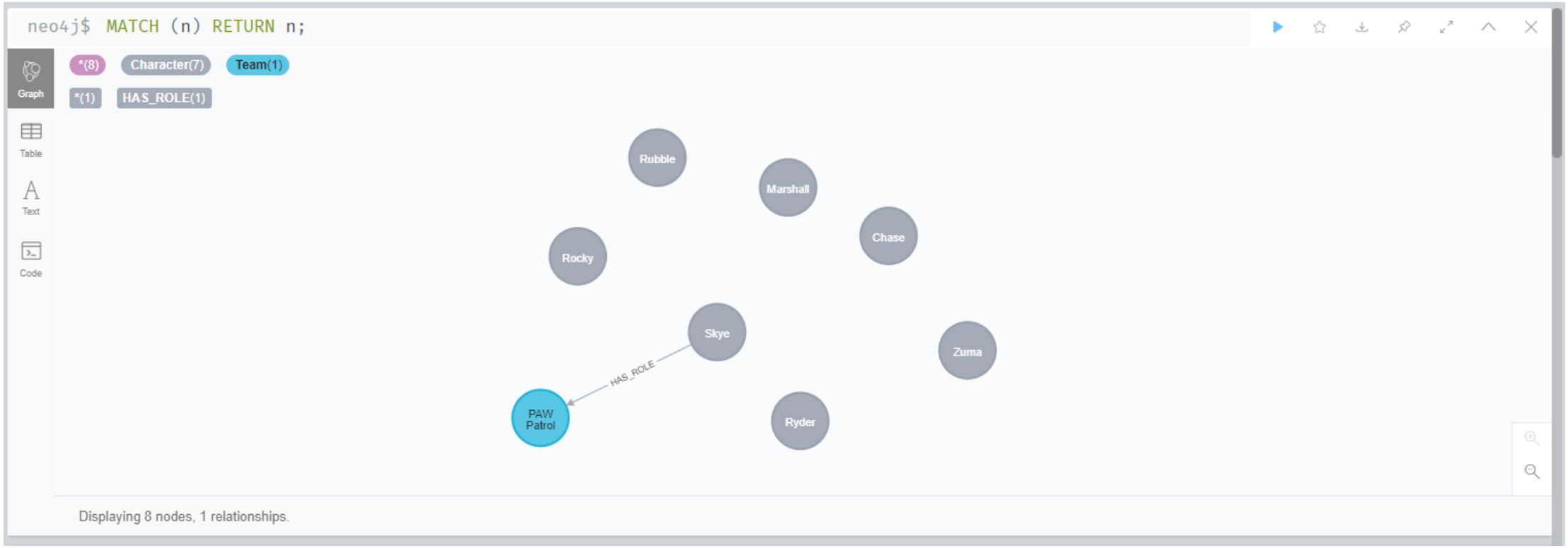
Create the PAW Patrol team label



Create the relationship between the pups and the team, every pup as at least 1 role on the team



Show the relationship



Some pups have multiple roles! This allows us to have multiple relationships between nodes

Create the roles for Marshall

```
1 //create relationship between pups and the team
2 MATCH (pup:Character {name:'Marshall'})
3 MATCH (team:Team {teamName:'PAW Patrol'})
4 CREATE (pup)-[r:HAS_ROLE {type:'paramedic'}]→(team);
```

Table Code

Set 1 property, created 1 relationship, completed after 7 ms.

Set 1 property, created 1 relationship, completed after 7 ms.

```
1 //create relationship between pups and the team
2 MATCH (pup:Character {name:'Marshall'})
3 MATCH (team:Team {teamName:'PAW Patrol'})
4 CREATE (pup)-[r:HAS_ROLE {type:'firefighter'}]→(team);
```

Table Code

Set 1 property, created 1 relationship, completed after 8 ms.

Set 1 property, created 1 relationship, completed after 8 ms.

Create the roles for Chase

Create the role for Zuma

```
1 //create relationship between pups and the team
2 MATCH (pup:Character {name:'Zuma'})
3 MATCH (team:Team {teamName:'PAW Patrol'})
4 CREATE (pup)-[r:HAS_ROLE {type:'aquatic'}]→(team);
```

Table

Code

Set 1 property, created 1 relationship, completed after 7 ms.

Set 1 property, created 1 relationship, completed after 7 ms.

Create the role for Rubble

```
1  //create relationship between pups and the team
2  MATCH (pup:Character {name:'Rubble'})
3  MATCH (team:Team {teamName:'PAW Patrol'})
4  CREATE (pup)-[r:HAS_ROLE {type:'construction'}]→(team);
```

Table

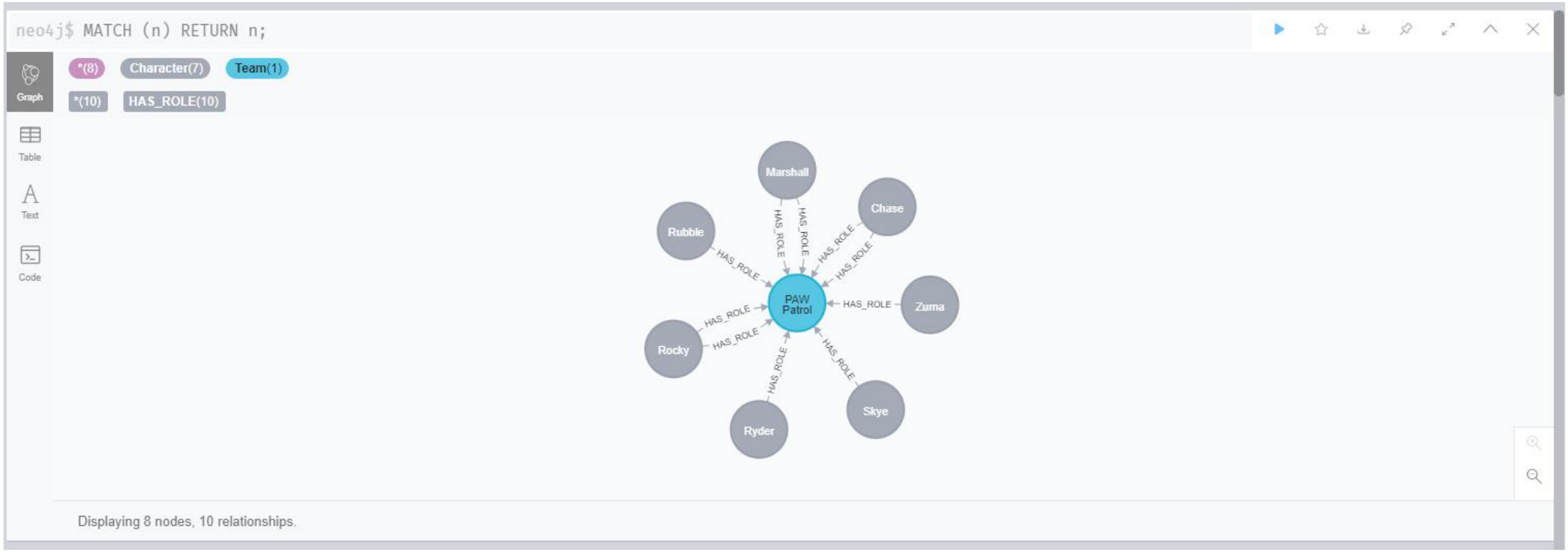
Code

Set 1 property, created 1 relationship, completed after 7 ms.

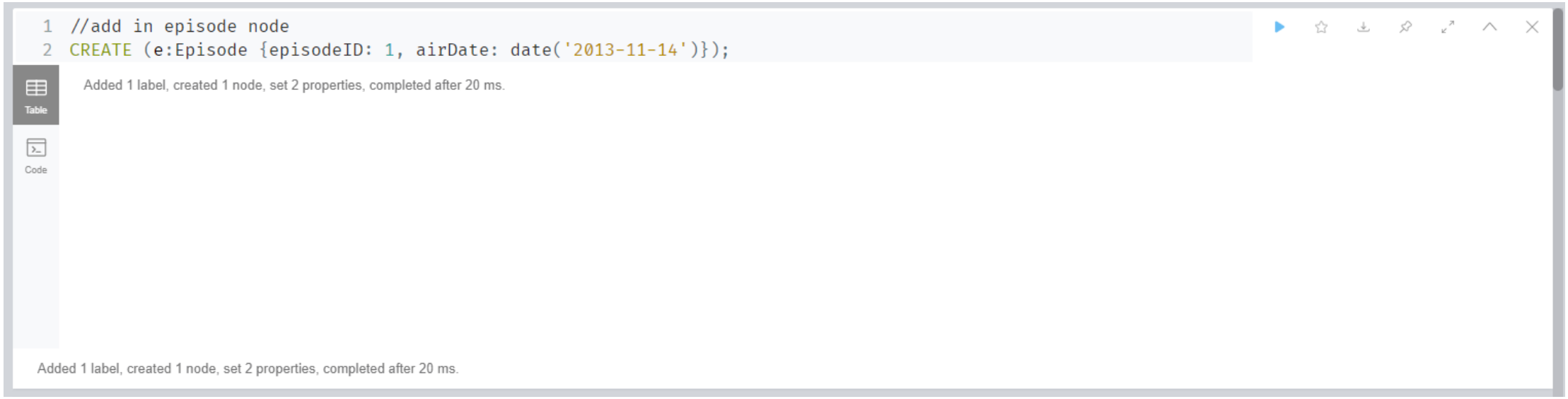
Set 1 property, created 1 relationship, completed after 7 ms.

Create the role for Ryder

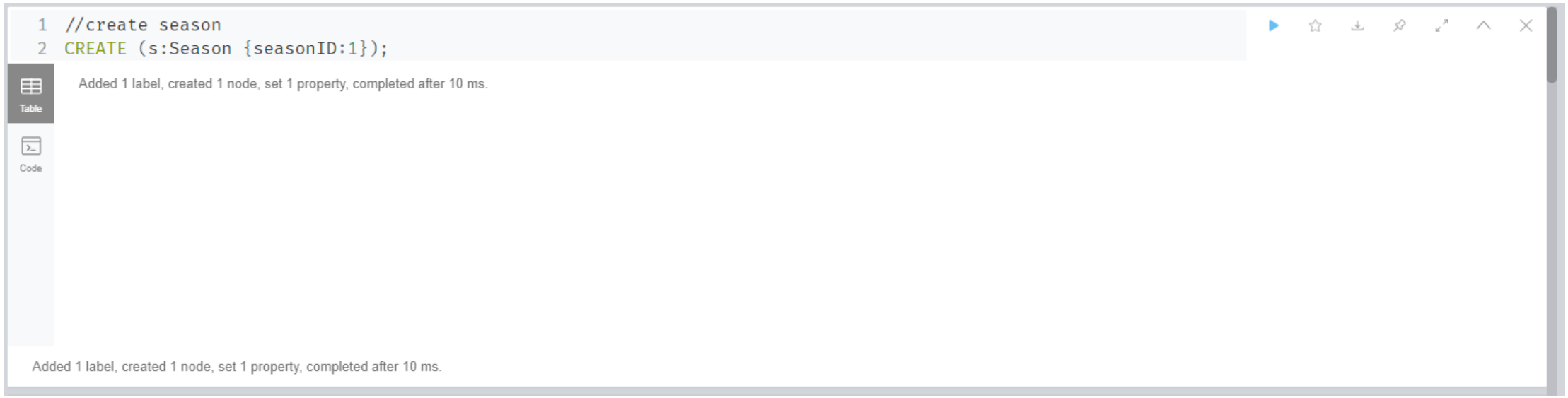
The PAW patrol!



Create episode 1



Create season 1



Create segments a and b of episode 1

```
1 //create segments a and b of episode 1
2 CREATE (s:Segment {segmentID: 'a', title:'Pups make a splash'}),
3        (s2:Segment {segmentID: 'b', title:'Pups Fall Festival'});
```

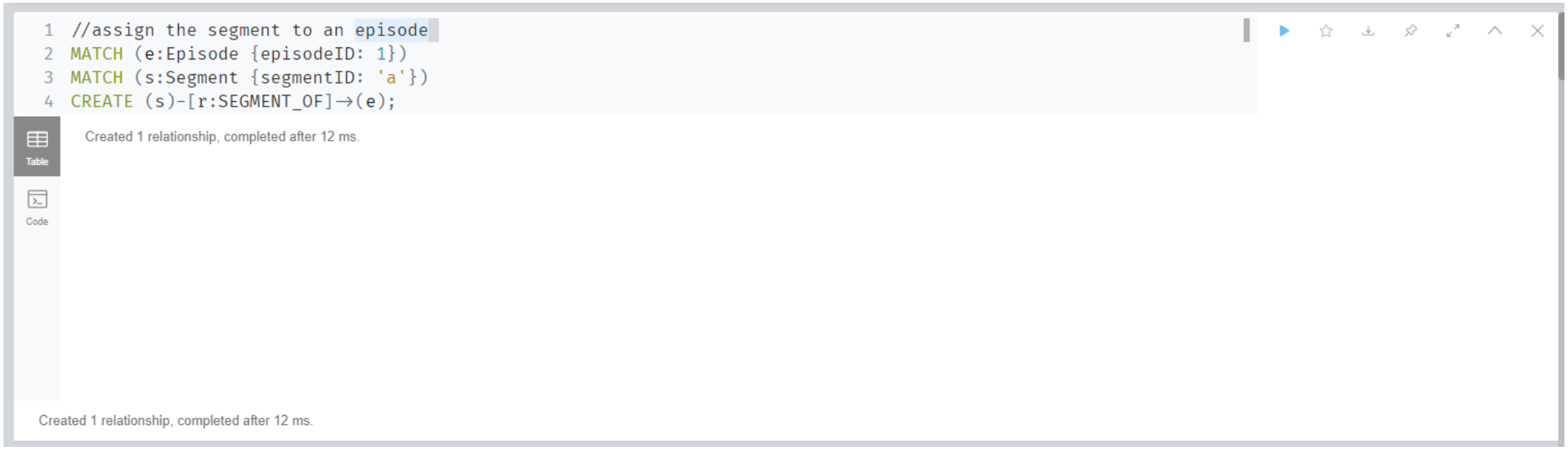
Table

Code

Added 2 labels, created 2 nodes, set 4 properties, completed after 11 ms.

Added 2 labels, created 2 nodes, set 4 properties, completed after 11 ms.

Relate segment to episode



Relate segment to episode

```
1 //assign the segment to an episode
2 WITH [1] AS episode_use
3 MATCH (e:Episode)
4 MATCH (s:Segment {segmentID: 'b'})
5 WHERE e.episodeID IN episode_use
6 CREATE (s)-[r:SEGMENT_OF]→(e);
```

Table

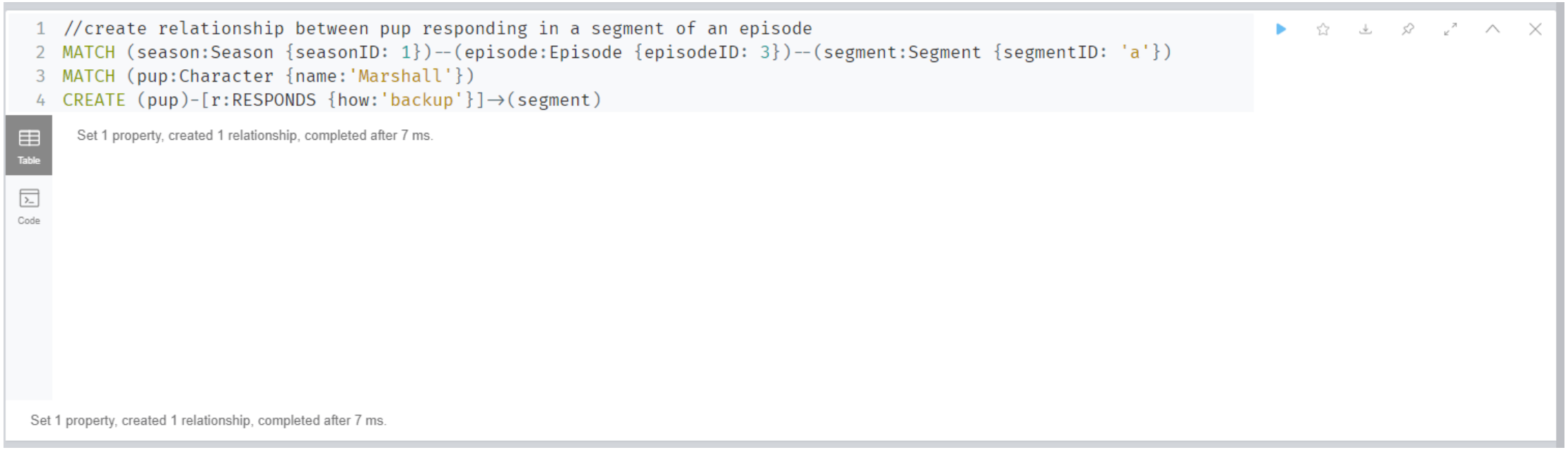
Code

Created 1 relationship, completed after 14 ms.

Created 1 relationship, completed after 14 ms.

Without using the segment title we need a PATH to identify a specific segment!

Create a relationship for Marshal and segment a in episode 3



Network graph