

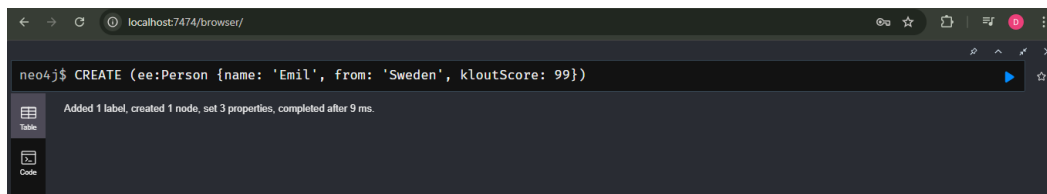
## Cypher Query Language

Cypher adalah bahasa query deklaratif yang digunakan oleh Neo4j (dan beberapa database graph lain) untuk berinteraksi dengan graph database. Fungsinya mirip seperti SQL pada relational database, tapi dirancang khusus untuk graph: node (simpul) dan relationship (relasi).

### 1. Create Node

```
CREATE (ee:Person { name: "Emil", from: "Sweden", klout: 99 })
```

- CREATE clause to **create data**
- () parenthesis to indicate a node
- ee:Person a **variable 'ee'** and **label 'Person'** for the new node
- brackets to add **properties** to the node



### 2. Finding Node

```
MATCH (ee:Person) WHERE ee.name = "Emil" RETURN ee;
```

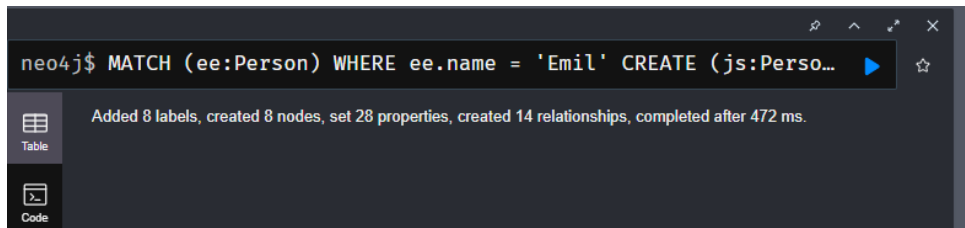
- MATCH clause to specify a pattern of nodes and relationships
- (ee:Person) a single node pattern with label 'Person' which will assign matches to the variable 'ee'
- WHERE clause to constrain the results
- ee.name = "Emil" compares name property to the value "Emil"
- RETURN clause used to request particular results



### 3. CREATE more data

The CREATE clause can create many nodes and relationships at once.

```
MATCH (ee:Person) WHERE ee.name = 'Emil' CREATE (js:Person { name: 'Johan', from: 'Sweden', learn: 'surfing' }), (ir:Person { name: 'Ian', from: 'England', title: 'author' }), (rvb:Person { name: 'Rik', from: 'Belgium', pet: 'Orval' }), (ally:Person { name: 'Allison', from: 'California', hobby: 'surfing' }), (ee)-[:KNOWS {since: 2001}]->(js),(ee)-[:KNOWS {rating: 5}]->(ir), (js)-[:KNOWS]->(ir),(js)-[:KNOWS]->(rvb), (ir)-[:KNOWS]->(js),(ir)-[:KNOWS]->(ally), (rvb)-[:KNOWS]->(ally)
```



### 4. MATCH patterns

*Describe what to find in the graph*

For instance, a pattern can be used to find Emil's friends:

```
WHERE ee.name = 'Emil' RETURN ee, friends
```

- MATCH describes what nodes will be retrieved based upon the pattern.
- (ee) is the node reference that will be returned based upon the WHERE clause.
- -[:KNOWS]- matches the KNOWS relationships (in either direction) from ee.
- (friends) represents the nodes that are Emil's friends.
- RETURN returns the node, referenced here by (ee), and the related (friends) nodes found.

