# Week 7 Contribution - Tanmay Munigala – 12742995

## Cypher Query Language Notes

### What is Cypher?

Cypher is Neo4j’s graph query language, allowing users to store and retrieve data from a Neo4j graph database. Since in the context of our team’s project, we will be utilizing a Neo4j instance to store some of the trip related information in order to generate trip recommendations for users, learning the fundamentals of Cypher will be important as it is the best way to interact with a Neo4j instance.

### Designing a cypher query

#### MATCH keyword

The MATCH keyword in Cypher is utilized to search for an existing node, relationship, label, property or pattern in the DB. Very similar to the way SQL using the SELECT keyword.

Example:

MATCH (p:Person)

RETURN p

LIMIT 1

Here Person is the type of node and it is selected and returned.

MATCH (tom:Person {name: 'Tom Hanks'})

RETURN tom

Here Person is the type of node, with the name property set as Tom Hanks, and it is selected and returned.

#### RETURN keyword

The RETURN keyword is used to specify which results you would like to return from the query. Cypher can be told to return nodes, relationships, node and relationship properties, etc.

#### Using MATCH to filter relationships

To filter on relationships using the MATCH keyword, we will have to use the arrow syntax from Cypher.

Example:

MATCH (:Person {name: 'Tom Hanks'})-[:DIRECTED]->(movie:Movie)

RETURN movie

By changing the return statement, we are able to selectively return only the chosen properties or the entire object

#### CREATE keyword

The CREATE keyword is used to insert data into the DB. It can be either a node, relationship, property, etc.

Example:

CREATE (friend:Person {name: 'Mark'})

RETURN friend

#### DELETE keyword

The DELETE keyword is used to delete data into the DB. It can be either a node, relationship, property, etc.

Example

MATCH (j:Person {name: 'Jennifer'})-[r:IS\_FRIENDS\_WITH]->(m:Person {name: 'Mark'})

DELETE r

Something important to keep in mind is that to delete a node, all its relationships must first be deleted.

#### WHERE keyword

The WHERE keyword in Cypher is utilized to filter for an existing node, relationship, label, property or pattern in the DB. Very similar to the way SQL using the WHERE keyword. It is mostly used to ease or learning or usage, but is mostly similar to the SELECT query with filter syntax

Example

MATCH (j:Person)

WHERE j.name = 'Jennifer'

RETURN j