POLITECNICO
MILANO 1863

Exercise Session - Neo4j Exercises

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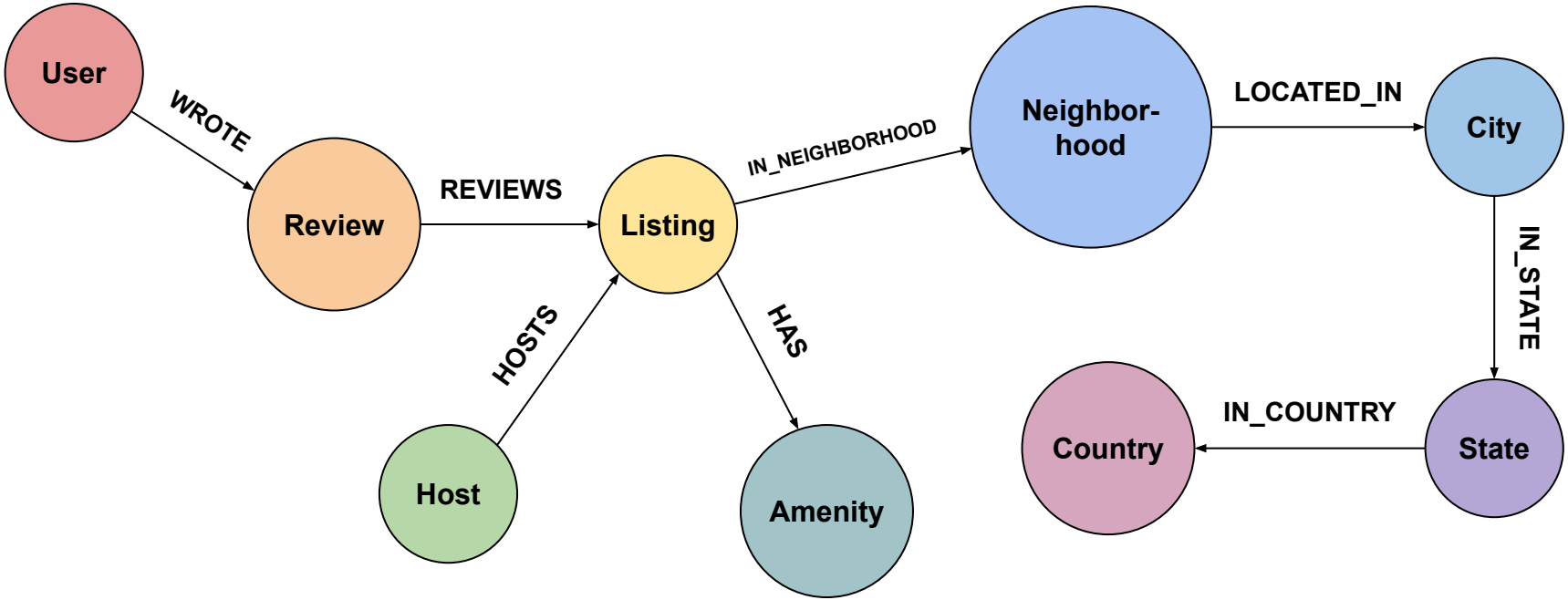
Neo4j Exercises - Data Model



Neo4j Exercises - Exercises

Return all the different types of nodes (one at a time) to inspect their attributes, limiting the number of returned nodes to 10.

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```
MATCH (a :Amenity) RETURN a LIMIT 10
MATCH (c :City) RETURN c LIMIT 10
MATCH (c :Country) RETURN c LIMIT 10
MATCH (h :Host) RETURN h LIMIT 10
MATCH (l :Listing) RETURN l LIMIT 10
MATCH (n :Neighborhood) RETURN n LIMIT 10
MATCH (re :Review) RETURN r LIMIT 10
MATCH (s :State) RETURN s LIMIT 10
MATCH (u :User) RETURN u LIMIT 10
```

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Return all the different relationships (one at a time) to inspect their attributes, limiting the number of returned nodes to 10.

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Return all the different relationships (one at a time) to inspect their attributes, limiting the number of returned nodes to 10.

```
MATCH (a :Amenity) ← [r :HAS] – (l :Listing)  RETURN a, r, l LIMIT 10
MATCH (c :City) – [r :IN_STATE] → (s :State) RETURN c, r, s LIMIT 10
MATCH (h :Host) – [r :HOST] → (l :Listing) RETURN h, r, l LIMIT 10
MATCH (l :Listing) – [r :IN_NEIGHBORHOOD] → (n :Neighborhood) RETURN l, r, n LIMIT 10
MATCH (n :Neighborhood) – [r :LOCATED_IN] → (c :City) RETURN n, r, c LIMIT 10
MATCH (re :Review) – [r :REVIEWS] → (l :Listing) RETURN re, r, l LIMIT 10
MATCH (s :State) – [r :IN_COUNTRY] → (c :Country) RETURN s, r, c LIMIT 10
MATCH (u :User) – [r :WROTE] → (re :Review) RETURN u, r, re LIMIT 10
```

Neo4j Exercises - Exercises

Return the list of listings with accommodates less or equal than 3.

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Return the list of listings with *accommodates* less or equal than 3.

```
MATCH (l :Listing)
WHERE l.accommodates <= 3
RETURN l, l.accommodates
```

Check the count to be sure of the correctness of the solution by changing the last line with the following code as it may take some time to compute the previous query.

* `RETURN COUNT(l)` → *listing_count* = 2517

Neo4j Exercises - Exercises

For each user who wrote a review, count the number of reviews they wrote.

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For each user who wrote a review, count the number of reviews they wrote.

```
MATCH (u :User) – [r :WROTE] → (re :Review)
RETURN u, COUNT(re)
```

* `RETURN COUNT(u)` → *distinct_user_count* = 55917

Neo4j Exercises - Exercises

For each user name who wrote a review, count the number of reviews they wrote.

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For each user name who wrote a review, count the number of reviews they wrote.

```
MATCH (u :User) – [r :WROTE] → (re :Review)
RETURN u.name, COUNT(re)
```

* `RETURN COUNT(u)` → *distinct_user_count* = 55917

Neo4j Exercises - Exercises

Return the list of users and the number of reviews they wrote.

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Return the list of users and the number of reviews they wrote.

```
MATCH (u :User) – [r :WROTE] → (re :Review)
RETURN u, COUNT(re) AS `COUNT`
UNION
MATCH (u :User)
WHERE NOT (u) – [ :WRITE] → ( :Review)
RETURN u, 0 AS `COUNT`
```

* RETURN COUNT(u) → *user_count* = 55917

In this dataset, each user wrote at least one review.

Neo4j Exercises - Exercises

Return the list of listings whose amenities include “First Aid Kit” and “Wireless Internet”.

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Return the list of listings whose amenities include “First Aid Kit” and “Wireless Internet”.

```
MATCH (l :Listing) – [r1 :HAS] → (a1 :Amenity), (l) – [r2 :HAS] → (a2 :Amenity)
WHERE a1.name = "First Aid Kit" AND a2.name = "Wireless Internet"
RETURN l, a1, a2
```

* `RETURN COUNT(l)` → *listing_count = 1839*

Neo4j Exercises - Exercises

Return the collection of all the listings' names in the same neighborhood.

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Return the collection of all the listings' names in the same neighborhood.

```
MATCH (l :Listing) – [ :IN_NEIGHBORHOOD] → (n :Neighborhood)
RETURN n.name, collect(l.name)
```

Neo4j Exercises - Exercises

Return the collection of all the listings' names in the same neighborhood.

```
MATCH (l :Listing) – [ :IN_NEIGHBORHOOD] → (n :Neighborhood)
RETURN n.name, collect(l.name)
```

Return the number of neighborhoods for each state.

Neo4j Exercises - Exercises

Return the collection of all the listings' names in the same neighborhood.

```
MATCH (l :Listing) – [ :IN_NEIGHBORHOOD] → (n :Neighborhood)
RETURN n.name, collect(l.name)
```

Return the number of neighborhoods for each state.

```
MATCH (s :State) ← [ ] – ( :City) ← [ ] – (n :Neighborhood)
RETURN s.code, COUNT(n)
```

Neo4j Exercises - Exercises

Return the name of the states with at least 10 neighborhoods.

```
MATCH (s :State) ← [ ] – ( :City) ← [ ] – (n :Neighborhood)
WITH s, COUNT(n) AS `neighborhood_count`
WHERE neighborhood_count >= 10
RETURN s.code, neighborhood_count
```

Neo4j Exercises - Exercises

For each host, return the total number of reviews assigned to their listings with “First Aid Kit” amenity, the total number of listings they own, and their name.

```
MATCH (h :Host) – [ :HOSTS] -> (l :Listing) <- [ :REVIEWS] – (r :Review),
          (l) – [ :HAS] -> (a :Amenity)
WHERE a.name = "First Aid Kit"
WITH h, COUNT(r) AS `reviews_count`
MATCH  (h) – [:HOSTS] -> (li :Listing)
WITH h, reviews_count, COUNT(li) AS `all_listings_count`
RETURN h.name, all_listings_count, reviews_count
```


ANY
Questions?