

# Week 4 Practice Queries - Sample Solution

CS 343: Graph Data Science  
Habib University

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## STRING: Practice

Write queries for the following:

- Retrieve movies whose titles start with 'The'

```
match (m:Movie)
where m.title starts with 'The'
return m.title
```

- Find actors whose names end with 'Smith'

```
match (a:Person)-[:ACTED_IN]-(:Movie)
where a.name ends with "Smith"
return a.name
```

- Retrieve movies with titles containing 'Matrix'

```
match (m:Movie)
where m.title contains "Matrix"
return m.title
```

- Find actors whose names contain 'John' (case-insensitive)

```
match (a:Person)-[:ACTED_IN]->(:Movie)
where tolower(a.name) contains "john"
return a.name
```

- Retrieve movies released after 2000 with titles in uppercase

```
match (m:Movie) where m.released > 2000
return toUpper(m.title) as MovieTitle
```

- Find directors whose names start with 'Christopher' (case-sensitive)

```
match (d:Person)-[:DIRECTED]->(:Movie)
where d.name starts with "Christopher"
return d.name
```

## DISTINCT

- Find actors who have acted in movies released after 2000

```
match (a:Person)-[:ACTED_IN]->(m:Movie)
where m.released > 2000
return distinct a.name
```

- Find pairs of co-actors in movies

```
match (a1:Person)-[:ACTED_IN]->(m:Movie)<-[:ACTED_IN]-(a2:Person)
where a1.name < a2.name
return a1.name, a2.name, m.title
```

In the query above, the < sign is used to avoid self pairs, and also ensure duplicate pairs are not returned; the pair (Ben Miles, Natalie Portman) and (Natalie Portman, Ben Miles) are the same, and we only want one of them.

## ORDER BY

- Retrieve movies ordered by release year in ascending order

```
match (m:Movie) return m.title, m.released
order by m.released asc
```

- Find actors ordered by their name in alphabetical order

```
match (a:Person)-[:ACTED_IN]-()
return distinct a.name
order by a.name desc
```

- Retrieve actors and their birth years, ordered by birth year in ascending order

```
match (a:Person)-[:ACTED_IN]->(:Movie)
where a.born is not null
return distinct a.name, a.born
order by a.born asc
```

## LIMIT/SKIP

- Return the first five movies

```
match (m:Movie) return m.title limit 5
```

- Return the latest movie

```
match (m:Movie) return m.title order by m.released desc limit 1
```

- Return the list of movies of the 3rd page where each page contains 10 movies

```
match (m:Movie) return m.title skip 20 limit 10
```

## Min, Max, Count

- Count the total number of actors

```
match (a:Person)-[:ACTED_IN]-() return count(distinct a)
```

- Count the total number of movies

```
match (m:Movie) return count(distinct m)
```

- Count the total number of directors

```
match (d:Person)-[:DIRECTED]-() return count(distinct d)
```

- Number of movies in which director also acted in the same movie

```
match (d:Person)-[:DIRECTED]->(m:Movie)<-[:ACTED_IN]-(d)
return count(distinct m)
```

- Number of actor who also directed at least one movies

```
match (a:Person)-[:ACTED_IN]->(:Movie)
with a
match (a)-[:DIRECTED]->(:Movie)
return count(distinct a) as 'Actors who also Directed at least one
Movie'
```