



**Universidade do Minho**  
Escola de Engenharia

# **Bases de Dados NoSQL**

**Mestrado em Bioinformática**

## **Resolução da Ficha de Trabalho 5**

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## ➔ FE05 – “Introduction to Graph Databases”

### Exercício 1:

```
MATCH (t:Tournament)<-[:PARTICIPATED_IN]-(team:Team)
RETURN t.name AS Tournament, count(team) AS NumberOfTeams
```

### Exercício 2:

```
MATCH (t:Tournament {year: 2011})
MATCH (E) <-[a: FOR]-(s:Squad)
MATCH (team: Team{name: 'Brazil'})-[b: NAMED]->(s)
MATCH (p: Person) - [q: IN_SQUAD| COACH_FOR] -> (s)
RETURN p.name, type(q)
```

### Exercício 3:

```
MATCH (t:Tournament)<-[:PARTICIPATED_IN]-(team:Team)
RETURN t.name AS Tournament, collect(team.name) AS Teams
```

### Exercício 4:

```
MATCH (person:Person)-[:IN_SQUAD]->(Squad)-[:FOR]->(tournament:Tournament)
WITH person, COUNT(DISTINCT tournament) AS TournamentsPlayed
ORDER BY TournamentsPlayed DESC
LIMIT 1
RETURN person.name AS Player, TournamentsPlayed
```

### Exercício 5:

```
MATCH (t:Tournament {year: 2003})<-[:IN_TOURNAMENT]-(m:Match)
WITH t, MIN(m.date) AS firstMatchDate
MATCH (m:Match {date: firstMatchDate})<-[:PLAYED_IN]-(team:Team)
RETURN DISTINCT team.name AS TeamName
```

### Exercício 6:

```
MATCH (p:Person)-[:PLAYED_IN{type:'Started'}]->(m:Match)-[:IN_TOURNAMENT]->(t:Tournament)
where (p)-[:REPRESENTS]->(Team{name:'USA'})
with p, count(m) as starts
return p.name,starts
order by starts desc
```

### Exercício 7:

```
MATCH (p:Person)-[:SCORED_GOAL]->(match)-[:IN_TOURNAMENT]->(tourn)
MATCH (p)-[:REPRESENTS]->(team)
WITH p, team, tourn.year AS year, count(*) AS goals
ORDER BY goals DESC
```

WITH p, team, collect(year) AS years, goals

RETURN p.name, team.name AS team, goals, years;

**Exercício 8:**

MATCH (p:Person)-[:PLAYED\_IN {type:'Subbed On'}]->(m:Match)

MATCH (p)-[:SCORED\_GOAL]->(m)

MATCH (p)-[:REPRESENTS]->(t:Team)

RETURN p.name AS Player,t.name as Team, count(s) as Goals

Order by Goals DESC

**Exercício 9:**

MATCH (t:Team)-[:PLAYED\_IN]->(m:Match {stage:'Final'})

WITH t.name AS Team, collect(m.date.year) AS Years, count(m) AS Number\_Finals

RETURN Team, Years, Number\_Finals

ORDER BY Number\_Finals DESC