Graph DBs (Neo4j) exercises

Firas Kahlaoui 3 BD 1

1. In which rooms does course with course number "1" take place in? Retrieve the course name and the names of the rooms in which the course takes place.

```
neo4j$ MATCH (c:Course {courseNr: "1"})-[:TAKESPLACEIN]→(r:Room) RETURN c.courseName AS CourseName, r.roomNa…
```

Table | Text | Code

	CourseName	RoomName
1	"Databases"	"Pascal"
2	"Databases"	"Alpha"
3	"Databases"	"Beta"
4	"Databases"	"Pascal"
5	"Databases"	"Alpha"
6	"Databases"	"Beta"

2. How many hours and in which projects does student with student number "1" works on? Retrieve the first name of the student, the project the student works on and the corresponding number of hours worked on the project.

```
neo4j$ MATCH (s:Student {studentID: "1"})-[r:WORKSON]→(p:Project) RETURN s.firstName AS FirstName, p.project…
```

Table | Text | Code

	FirstName	ProjectName	HoursWorked
1	"Ana"	"eCommerce database"	1
2	"Ana"	"eCommerce website"	2

3. Which students and how many hours do they work on the project with project number "24"? Retrieve the project name, the last name of the student and the corresponding number of hours worked on the project.

```
1 MATCH (s:Student)-[r:WORKSON]→(p:Project {projectNr: "24"})
2 RETURN p.projectName AS ProjectName, s.lastName AS LastName, r.hours AS HoursWorked;
3
```

Table

	ProjectName	LastName	HoursWorked
1	"eCommerce website"	"Doe"	2

4. Which students work in which projects and how many hours? Retrieve the last name of the students, the name of the projects they work on, and the corresponding number of hours. Order the results by the last name of the students. Limit the results to four.

```
MATCH (s:Student)-[r:WORKSON]→(p:Project)
RETURN s.lastName AS LastName, p.projectName AS ProjectName, r.hours AS HoursWorked
ORDER BY s.lastName
LIMIT 4;
```

Table | Text

	LastName	ProjectName	HoursWorked
1	"Doe"	"eCommerce database"	1
2	"Doe"	"eCommerce website"	2

5. Which students work on more than two projects and on how many projects exactly? Retrieve the last name of the students and the corresponding number of projects. Order the results by the number of projects.

```
MATCH (s:Student)-[:WORKSON]→(p:Project)
WITH s, COUNT(DISTINCT p) AS projectCount
WHERE projectCount > 2
RETURN s.lastName AS LastName, projectCount AS NumberOfProjects
ORDER BY projectCount;
```

6. Which students have the same last name and work on the same projects? Retrieve the first name of the students and the name of projects they share.

```
MATCH (s1:Student)-[:WORKSON]→(p:Project)←[:WORKSON]-(s2:Student)
WHERE s1.lastName = s2.lastName AND s1.studentID <> s2.studentID
RETURN s1.firstName AS FirstName1, s2.firstName AS FirstName2, p.projectName AS ProjectName;
```