Cloud Computing and Big Data

LIS 4102 SECTION 1

Dr. Genoveva Vargas-Solar

Assignment 3: Creating and Querying Graphs with Cypher on Neo4J

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February 20th ‘22

1. Which are the names of the available rooms?

```
1 MATCH (room:Room)
2 RETURN room.roomName
```

Table | Text | Code

	room.roomName
1	"Pascal"
2	"Seminar C"
3	"Alpha"
4	"Beta"
5	"Pascal"
6	"Seminar C"
7	"Alpha"
8	"Beta"

2. Which are the names of the current projects?

```
1 MATCH (project:Project)
2 RETURN project.projectName, project.projectNr
```

Table | Text | Code

	project.projectName	project.projectNr
1	"eCommerce database"	"34"
2	"eCommerce website"	"24"
3	"User interface"	"13"
4	"Reporting"	"26"
5	"eCommerce database"	"34"
6	"eCommerce website"	"24"
7	"User interface"	"13"
8	"Reporting"	"26"

3. In which room does courses labelled with number “1” take place? Retrieve the course name and the names of the rooms in which the course takes place.

```
1 MATCH (course:Course {courseNr: '1'})-[r:TAKESPLACEIN]→(room:Room)
2 RETURN course.courseName, room.roomName
```

Table | Text | Code

	course.courseName	room.roomName
1	"Databases"	"Beta"
2	"Databases"	"Alpha"
3	"Databases"	"Pascal"
4	"Databases"	"Beta"
5	"Databases"	"Alpha"
6	"Databases"	"Pascal"

4. 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.

```
1 MATCH  (s:Student {studentID: "1"}) - [w:WORKSON] → (p)
2 RETURN s.firstName, p.projectName, w.hours
```

Table | Text | Code

	s.firstName	p.projectName	w.hours
1	"Ana"	"eCommerce website"	"2"
2	"Ana"	"eCommerce database"	"1"
3	"Ana"	"eCommerce website"	"2"
4	"Ana"	"eCommerce database"	"1"

5. 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.

```
MATCH (s) - [w:WORKSON] → (p:Project {projectNr: "24"})
RETURN p.projectName, s.lastName , w.hours
```

Table | Text | Code

	p.projectName	s.lastName	w.hours
1	"eCommerce website"	"Doe"	"2"
2	"eCommerce website"	"Ung"	"4"
3	"eCommerce website"	"Doe"	"2"
4	"eCommerce website"	"Doe"	"2"
5	"eCommerce website"	"Ung"	"4"
6	"eCommerce website"	"Doe"	"2"

6. 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) - [w:WORKSON] → (p)
RETURN s.lastName, p.projectName, w.hours
ORDER BY s.lastName
LIMIT 4
```

Table | Text | Code

	s.lastName	p.projectName	w.hours
1	"Doe"	"eCommerce website"	"2"
2	"Doe"	"eCommerce database"	"1"
3	"Doe"	"Reporting"	"3"
4	"Doe"	"eCommerce website"	"2"

7. 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) - [w:WORKSON] → (p)
WITH s, COUNT(p) AS nrOfProjects
WHERE nrOfProjects > 2
RETURN s.lastName , nrOfProjects
ORDER BY nrOfProjects
```

Table | Text | Code

	s.lastName	nrOfProjects
1	"Doe"	3
2	"Doe"	3
3	"Ung"	4
4	"Ung"	4

8. 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) - [:WORKSON] - (p), (s2) - [:WORKSON] - (p)
WHERE s1.lastName = s2.lastName
RETURN s1.firstName , p.projectName
```

Table | Text | Code

	s1.firstName	p.projectName
1	"Ana"	"eCommerce database"
2	"John"	"eCommerce database"
3	"Ana"	"eCommerce website"
4	"John"	"eCommerce website"
5	"Ana"	"eCommerce database"
6	"John"	"eCommerce database"
7	"Ana"	"eCommerce website"
8	"John"	"eCommerce website"