Exercises: Table Relations

This document defines the **exercise assignments** for the MySQL course @ Software University.
Please submit your solutions (source code) to all the below-described problems in Judge.

1. One-To-One Relationship

Create two tables as follows. Use appropriate data types.

people			
person_id	**first_name**	**salary**	**passport_id**
1	Roberto	43300.00	102
2	Tom	56100.00	103
3	Yana	60200.00	101

passports	
passport_id	**passport_number**
101	N34FG21B
102	K65LO4R7
103	ZE657QP2

Insert the data from the example above.

- Alter table **people** and make **`person_id`** a **`primary key`**.
- Create a **`foreign key`** between **people** and **passports** by using the **`passport_id`** column.
- Think about which passport field should be **`UNIQUE`**.
- Format salary to **second** digit after decimal point.

Submit your queries by using "**MySQL run queries & check DB**" strategy.

2. One-To-Many Relationship

Create two tables as follows. Use appropriate data types.

manufacturers		
manufacturer_id	**name**	**established_on**
1	BMW	01/03/1916
2	Tesla	01/01/2003
3	Lada	01/05/1966

models		
model_id	name	manufacturer_id
101	X1	1
102	i6	1
103	Model S	2
104	Model X	2
105	Model 3	2
106	Nova	3

Insert the data from the example above.

- Add primary and foreign keys.

Submit your queries by using "**MySQL run queries & check DB**" strategy.

students	
student_id	name
1	Mila
2	Toni
3	Ron

3. Many-To-Many Relationship

Create three tables as follows. Use appropriate data types.

exams	
exam_id	name
101	Spring MVC
102	Neo4j
103	Oracle 11g

students_exams	
student_id	exam_id
1	101
1	102
2	101
3	103
2	102
2	103

Insert the data from the example above.

- Add primary and foreign keys.
- Have in mind that the table **`student_exams`** should have a **composite** primary key.

Submit your queries by using "**MySQL run queries & check DB**" strategy.

4. Self-Referencing

Create a single table as follows. Use appropriate data types.

teachers		
teacher_id	**name**	**manager_id**
101	John	
102	Maya	106
103	Silvia	106
104	Ted	105
105	Mark	101
106	Greta	101

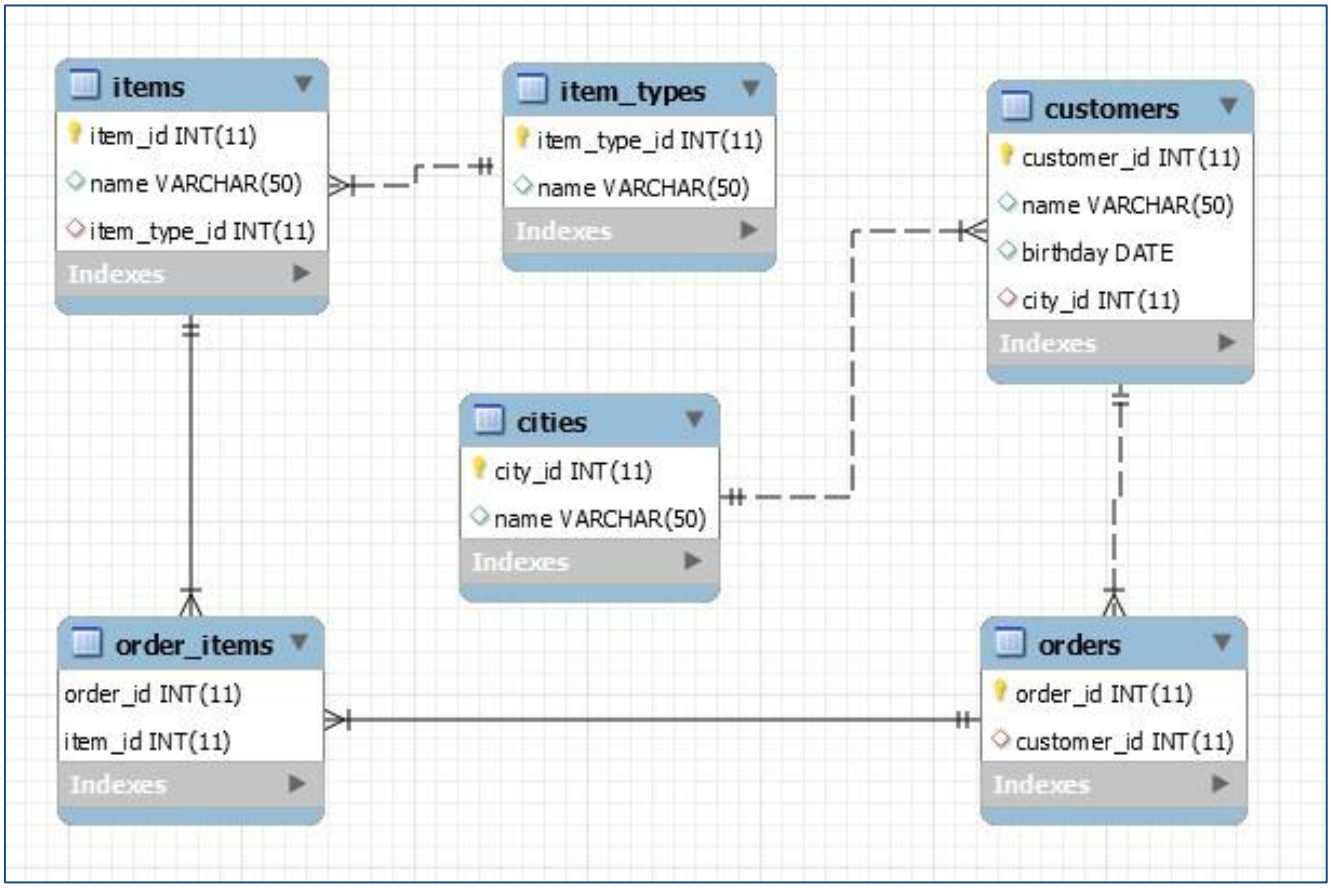
Insert the data from the example above.

- Add primary and foreign keys.
- The foreign key should be between **`manager_id`** and **`teacher_id`**.

Submit your queries by using " **MySQL run queries & check DB**" strategy**.**

5. Online Store Database

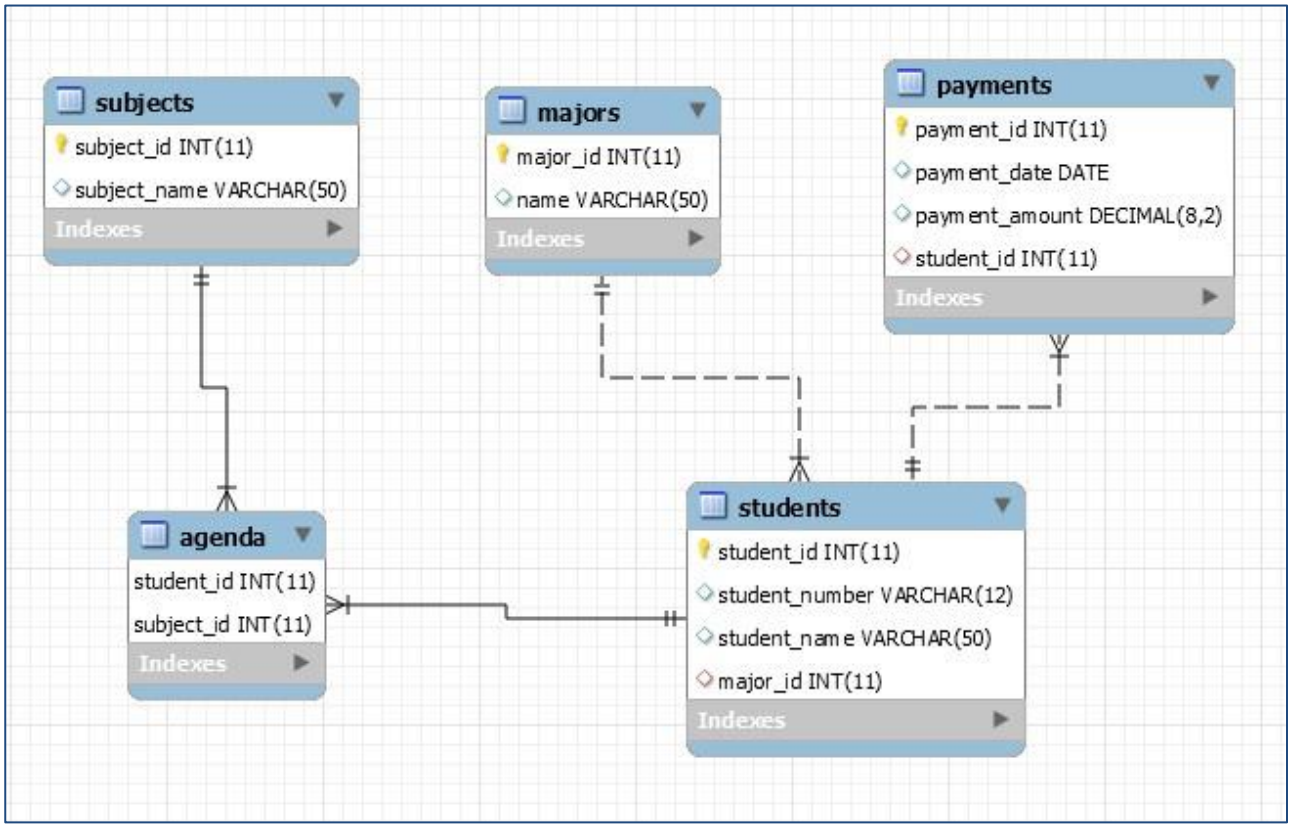
Create a new database and design the following structure:



Submit your queries by using "**MySQL run queries & check DB"** strategy**.**

6. University Database

Create a new database and design the following structure:



Submit your queries by using "**MySQL run queries & check DB**" strategy.

7. SoftUni Design

Create an E/R Diagram of the SoftUni Database. There are some special relations you should check out: **employees** are **self-referenced (manager_id)** and **departments** have **One-to-One** with the **employees (manager_id)** while the **employees** have **One-to-Many** (**department_id**). You might find it interesting how it looks on a diagram. ☺

8. Geography Design

Create an E/R Diagram of the Geography Database.

9. Peaks in Rila

Display all peaks for "**Rila**" **`mountain_range`**. Include:

- `mountain_range`
- `peak_name`
- `peak_elevation`

Peaks should be sorted by `peak_elevation` descending.

Example

mountain_range	peak_name	peak_elevation
Rila	Musala	2925
…	…	…

Submit your queries by using "**MySQL prepare DB & run queries**" strategy.