

Exercises: Table Relations

This document defines the **exercise assignments** for the [MySQL course @ Software University](#).

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.

3. Many-To-Many Relationship

Create three tables as follows. Use appropriate data types.

students		exams	
student_id	name	exam_id	name
1	Mila	101	Spring MVC
2	Toni	102	Neo4j
3	Ron	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

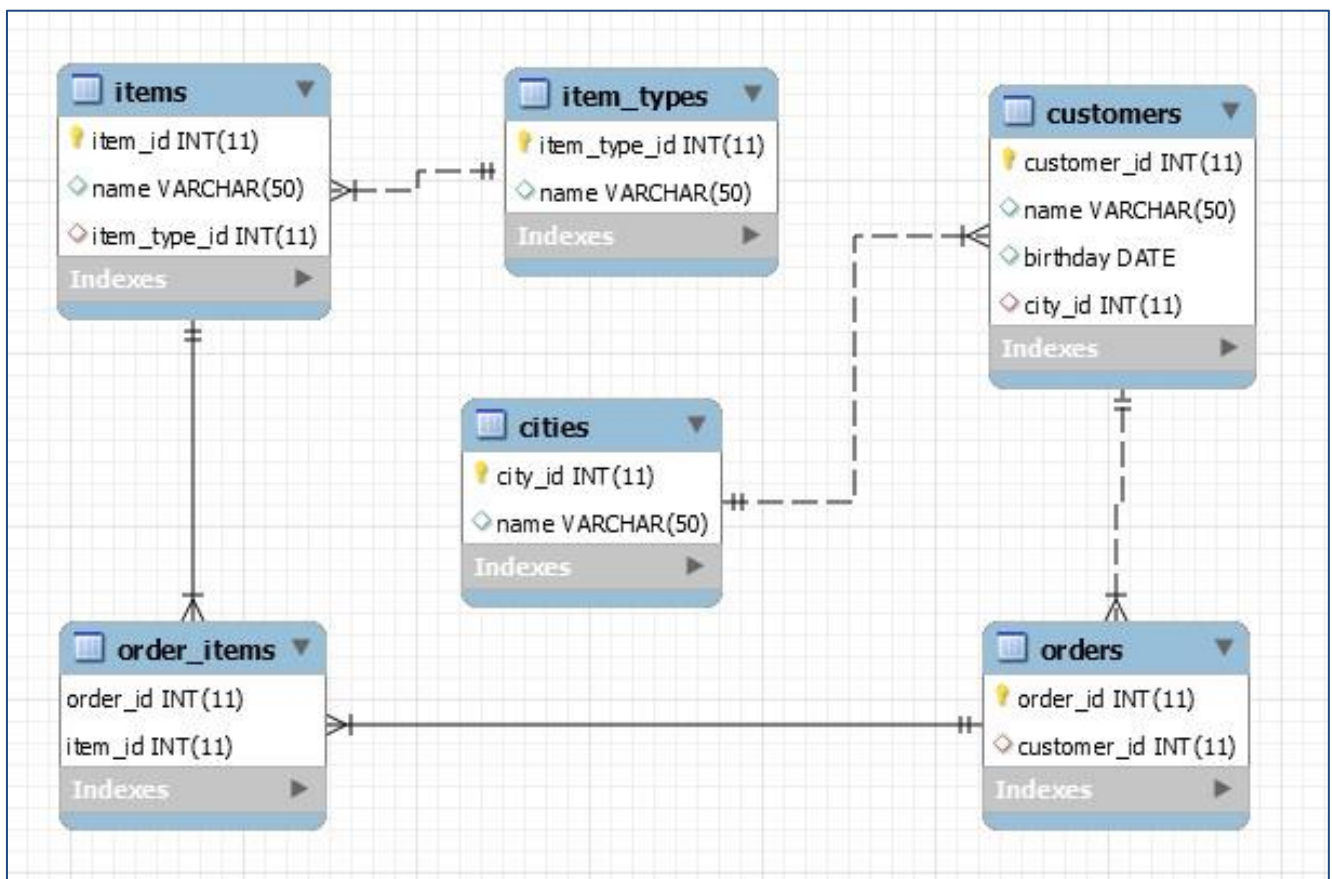
Insert the data from the example above.

- 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

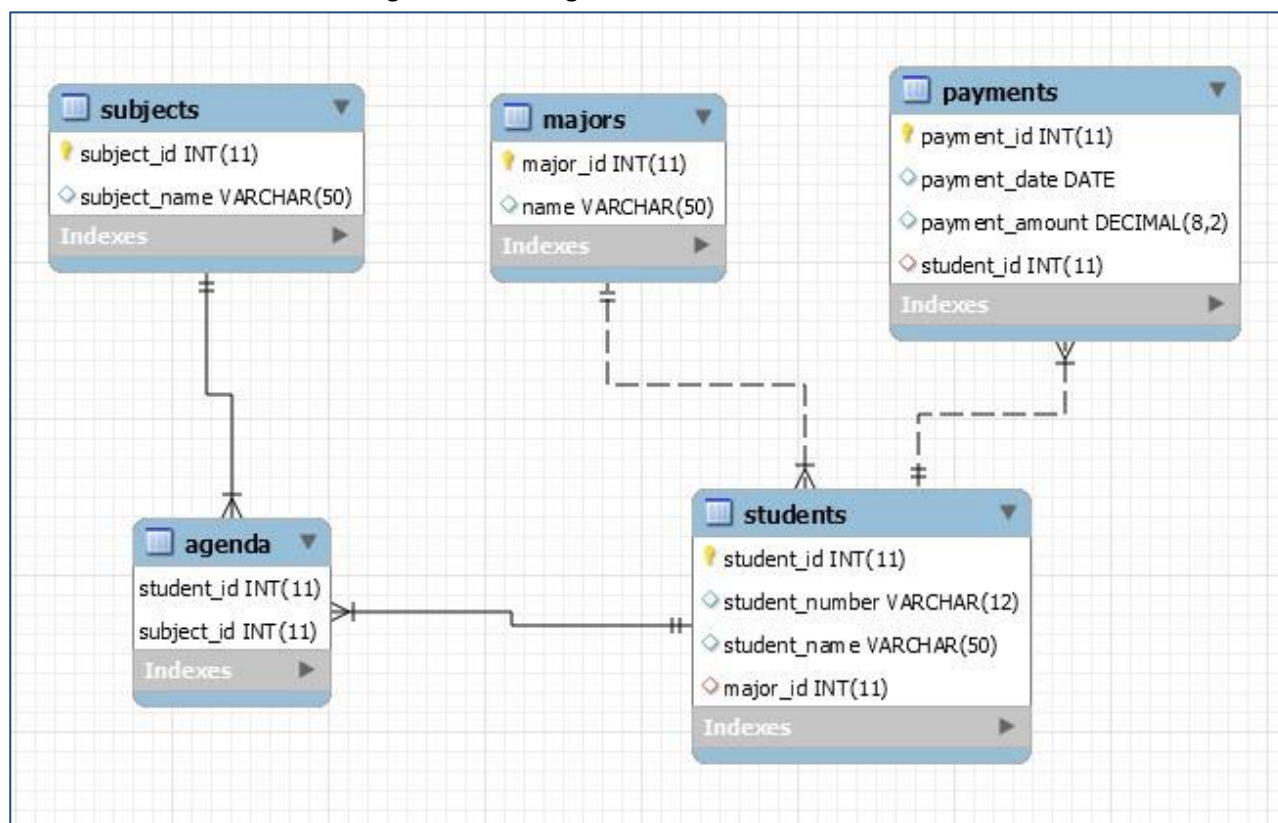
Create a new database and design the following structure:



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.