

# LU06.S03 - SQL-DDL: Constraint Management

## Case studies / Assignments

Here are five assignments, each covering a specific MySQL constraint. As usual, along with the solutions at the end (link).

## Assignments

### A: PRIMARY KEY

Create a table books that has a book\_id as a unique identifier for each book, with book\_id as the primary key. Include columns for book\_title (VARCHAR) and author\_name (VARCHAR). The book\_id should be an integer and cannot be NULL.

```
CREATE TABLE books (  
  book_id INT PRIMARY KEY,  
  book_title VARCHAR(100),  
  author_name VARCHAR(100)  
);
```

### B: FOREIGN KEY

Create two tables: one called departments and the other called employees. Each department has a department\_id as its primary key. In the employees table, include a column called department\_id as a foreign key that references the departments table. Ensure that every employee is linked to a department.

```
CREATE TABLE departments (  
  department_id INT PRIMARY KEY,  
  department_name VARCHAR(50)  
);
```

```
CREATE TABLE employees (  
  employee_id INT PRIMARY KEY,  
  employee_name VARCHAR(100),  
  department_id INT,  
  FOREIGN KEY (department_id) REFERENCES departments(department_id)  
);
```

### C: NOT NULL

Create a table students that includes a student\_id (INT) and a student\_name (VARCHAR). Ensure that

the student\_name column cannot have a NULL value by applying the NOT NULL constraint.

```
CREATE TABLE students (  
  student_id INT PRIMARY KEY,  
  student_name VARCHAR(50) NOT NULL  
);
```

## D: AUTO INCREMENT

Create a table products where each product has an automatically generated, unique product\_id using the AUTO\_INCREMENT feature. Include columns for product\_name and price.

```
CREATE TABLE products (  
  product_id INT AUTO_INCREMENT PRIMARY KEY,  
  product_name VARCHAR(100),  
  price DECIMAL(10,2)  
);
```

## E: UNIQUE

Create a table users that has a user\_id (INT) and email (VARCHAR). Ensure that no two users can have the same email address by applying the UNIQUE constraint to the email column.

```
CREATE TABLE users (  
  user_id INT PRIMARY KEY,  
  email VARCHAR(100) UNIQUE  
);
```

## Solution

[Lösung](#)

## Vocabulary

English	German
...	...
...	...



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Last update: **2024/09/27 13:23**

