

LU07.A01 - Preparatory work

Requirements

- Work type: Individual
- Timeframe: 10 Minutes
- Means of aid:
 - Only teaching materials, no websearch, no use of ai.
- Establishment of a MySQL **table employees** and import of the provided initial data in order to perform the requirements of the task: 2: INSERT, 3: UPDATE, 4: DELETE

Preparation Assignments

A: DATA SCHEMA

First of all we need a database schema (database workspace). Execute the following two lines on your MySQL installation.

```
CREATE DATABASE hr_database;  
SHOW DATABASES;  
USE hr_database;
```

B: CREATE TABLE

To exercise the DML commands, we need a suitable table including a reasonable amount of data. The following SQL statement will create a table **employee** regarding all necessary attributes of an „average employee“.

```
CREATE TABLE EMPLOYEES (  
  employee_ID INT PRIMARY KEY,           -- Employee ID as the primary key  
  name VARCHAR(50) NOT NULL,           -- Name of the employee (max length 50  
  characters)  
  surname VARCHAR(50) NOT NULL,        -- Surname of the employee (max length  
  50 characters)  
  birthdate DATE NOT NULL,             -- Birthdate of the employee  
  sex CHAR(1),                          -- Sex of the employee (M/F/0 for  
  other)  
  pronomen VARCHAR(10),                -- Pronoun of the employee  
  employment_date DATE NOT NULL,       -- Date when the employee was hired  
  salary DECIMAL(10, 2) NOT NULL,      -- Salary of the employee (up to 10  
  digits, 2 decimal places)  
  department VARCHAR(50) NOT NULL      -- Department where the employee works  
);
```

Explanation

1. **employee_ID** is the primary key and ensures that each employee has a unique ID.
2. **name** and **surname** are 'VARCHAR' fields that store the name and surname of the employee.
3. **birthdate** and **employment_date** use the 'DATE' data type to store the birth and employment dates.
4. **sex** is stored as a 'CHAR(1)' type to represent gender with one letter ('M' for male, 'F' for female, etc.).
5. **pronomen** stores the employee's pronouns.
6. **salary** is stored as a 'DECIMAL' value to account for financial precision.
7. **department** is a VARCHAR(50) field that stores the name of the department the employee is associated with. It has a NOT NULL constraint to ensure that every employee is assigned to a department.

C: Inital data import

Once we have created our 'employees' table, we need a reasonable amount of data to be able to make the assignments. The following SQL INSERTS will provide you with the inital data of 30 employees. Though execute the follwing INSERT statements on your MySQL.

As we already know there are two ways how to import the inital data cosisting of 30 rows of employee data:

- multiple inserts
- single insert

C1: Multiple inserts

```
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (1, 'John', 'Doe', '1985-03-25', 'M', 'He/Him', '2015-01-15',
55000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (2, 'Jane', 'Smith', '1990-07-19', 'F', 'She/Her', '2017-06-10',
60000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (3, 'Mike', 'Brown', '1982-11-02', 'M', 'He/Him', '2012-03-05',
75000.00, 'IT');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (4, 'Sarah', 'Johnson', '1970-01-14', 'F', 'She/Her', '2020-08-22',
50000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (5, 'Chris', 'Williams', '1987-04-11', 'M', 'He/Him', '2016-09-30',
65000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
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employment_date, salary, department)
VALUES (6, 'Anna', 'Lee', '1993-12-01', 'F', 'She/Her', '2018-04-12',
72000.00, 'IT');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (7, 'David', 'Kim', '1989-10-22', 'M', 'He/Him', '2014-11-08',
69000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (8, 'Laura', 'Clark', '1986-02-17', 'F', 'She/Her', '2013-05-01',
56000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (9, 'Jake', 'Lewis', '1962-09-05', 'M', 'He/Him', '2019-12-20',
59000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (10, 'Emily', 'Martinez', '1996-06-13', 'F', 'She/Her', '2021-01-05',
61000.00, 'IT');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (11, 'Ryan', 'Turner', '1991-05-21', 'M', 'He/Him', '2017-07-19',
70000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (12, 'Sophia', 'Adams', '1988-12-06', 'F', 'She/Her', '2014-02-11',
62000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (13, 'Nathan', 'Garcia', '1994-03-29', 'M', 'He/Him', '2018-09-15',
66000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (14, 'Olivia', 'Baker', '1983-08-11', 'F', 'She/Her', '2011-10-25',
78000.00, 'IT');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (15, 'Liam', 'Scott', '1958-12-18', 'M', 'He/Him', '2020-06-13',
53000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (16, 'Isabella', 'Carter', '1990-01-02', 'F', 'She/Her',
'2016-03-30', 67000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (17, 'James', 'Rodriguez', '1984-05-14', 'M', 'He/Him', '2013-07-22',
72000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (18, 'Mia', 'Lopez', '1998-09-27', 'F', 'She/Her', '2021-03-11',
51000.00, 'IT');
```

```
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (19, 'Ethan', 'Harris', '1970-04-07', 'M', 'He/Him', '2019-10-05',
64000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (20, 'Charlotte', 'Moore', '1986-11-03', 'F', 'She/Her',
'2014-12-30', 59000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (21, 'Lucas', 'Jackson', '1989-02-28', 'M', 'He/Him', '2015-08-18',
74000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (22, 'Amelia', 'Young', '1991-06-23', 'F', 'She/Her', '2016-11-02',
62000.00, 'IT');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (23, 'Henry', 'King', '1993-10-08', 'M', 'He/Him', '2018-05-07',
67000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (24, 'Grace', 'Wright', '1987-03-19', 'F', 'She/Her', '2012-04-14',
71000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (25, 'Jack', 'White', '1962-08-15', 'M', 'He/Him', '2019-01-23',
69000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (26, 'Chloe', 'Martin', '1996-12-31', 'F', 'She/Her', '2021-07-05',
54000.00, 'IT');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (27, 'Daniel', 'Green', '1985-09-25', 'M', 'He/Him', '2013-02-13',
76000.00, 'Marketing');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (28, 'Ella', 'Hall', '1994-04-30', 'F', 'She/Her', '2017-09-26',
63000.00, 'HR');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (29, 'Oliver', 'Nelson', '1993-07-21', 'M', 'He/Him', '2018-11-19',
64000.00, 'Finance');
INSERT INTO EMPLOYEES (employee_id, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES (30, 'Ava', 'Walker', '1958-02-11', 'F', 'She/Her', '2021-05-30',
52000.00, 'Marketing');
```

C2: Single insert

```
INSERT INTO EMPLOYEES (employee_ID, name, surname, birthdate, sex, pronomen,
employment_date, salary, department)
VALUES
  (1, 'John', 'Doe', '1985-03-25', 'M', 'He/Him', '2015-01-15', 55000.00,
'Finance'),
  (2, 'Jane', 'Smith', '1990-07-19', 'F', 'She/Her', '2017-06-10', 60000.00,
'HR'),
  (3, 'Mike', 'Brown', '1982-11-02', 'M', 'He/Him', '2012-03-05', 75000.00,
'IT'),
  (4, 'Sarah', 'Johnson', '1970-01-14', 'F', 'She/Her', '2020-08-22',
50000.00, 'Marketing'),
  (5, 'Chris', 'Williams', '1987-04-11', 'M', 'He/Him', '2016-09-30',
65000.00, 'Finance'),
  (6, 'Anna', 'Lee', '1993-12-01', 'F', 'She/Her', '2018-04-12', 72000.00,
'IT'),
  (7, 'David', 'Kim', '1989-10-22', 'M', 'He/Him', '2014-11-08', 69000.00,
'Marketing'),
  (8, 'Laura', 'Clark', '1986-02-17', 'F', 'She/Her', '2013-05-01',
56000.00, 'HR'),
  (9, 'Jake', 'Lewis', '1962-09-05', 'M', 'He/Him', '2019-12-20', 59000.00,
'Finance'),
  (10, 'Emily', 'Martinez', '1996-06-13', 'F', 'She/Her', '2021-01-05',
61000.00, 'IT'),
  (11, 'Ryan', 'Turner', '1991-05-21', 'M', 'He/Him', '2017-07-19',
70000.00, 'Marketing'),
  (12, 'Sophia', 'Adams', '1988-12-06', 'F', 'She/Her', '2014-02-11',
62000.00, 'HR'),
  (13, 'Nathan', 'Garcia', '1994-03-29', 'M', 'He/Him', '2018-09-15',
66000.00, 'Finance'),
  (14, 'Olivia', 'Baker', '1983-08-11', 'F', 'She/Her', '2011-10-25',
78000.00, 'IT'),
  (15, 'Liam', 'Scott', '1958-12-18', 'M', 'He/Him', '2020-06-13', 53000.00,
'Marketing'),
  (16, 'Isabella', 'Carter', '1990-01-02', 'F', 'She/Her', '2016-03-30',
67000.00, 'HR'),
  (17, 'James', 'Rodriguez', '1984-05-14', 'M', 'He/Him', '2013-07-22',
72000.00, 'Finance'),
  (18, 'Mia', 'Lopez', '1998-09-27', 'F', 'She/Her', '2021-03-11', 51000.00,
'IT'),
  (19, 'Ethan', 'Harris', '1970-04-07', 'M', 'He/Him', '2019-10-05',
64000.00, 'Marketing'),
  (20, 'Charlotte', 'Moore', '1986-11-03', 'F', 'She/Her', '2014-12-30',
59000.00, 'HR'),
  (21, 'Lucas', 'Jackson', '1989-02-28', 'M', 'He/Him', '2015-08-18',
74000.00, 'Finance'),
  (22, 'Amelia', 'Young', '1991-06-23', 'F', 'She/Her', '2016-11-02',
62000.00, 'IT'),
  (23, 'Henry', 'King', '1993-10-08', 'M', 'He/Him', '2018-05-07', 67000.00,
'Marketing'),
  (24, 'Grace', 'Wright', '1987-03-19', 'F', 'She/Her', '2012-04-14',
71000.00, 'HR'),
```

```
(25, 'Jack', 'White', '1962-08-15', 'M', 'He/Him', '2019-01-23', 69000.00, 'Finance'),  
(26, 'Chloe', 'Martin', '1996-12-31', 'F', 'She/Her', '2021-07-05', 54000.00, 'IT'),  
(27, 'Daniel', 'Green', '1985-09-25', 'M', 'He/Him', '2013-02-13', 76000.00, 'Marketing'),  
(28, 'Ella', 'Hall', '1994-04-30', 'F', 'She/Her', '2017-09-26', 63000.00, 'HR'),  
(29, 'Oliver', 'Nelson', '1993-07-21', 'M', 'He/Him', '2018-11-19', 64000.00, 'Finance'),  
(30, 'Ava', 'Walker', '1958-02-11', 'F', 'She/Her', '2021-05-30', 52000.00, 'Marketing');
```

Solution

[Lösung](#)

Vocabulary

English	German
preparatory work	Vorarbeit



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