



## Assignment 3 (NF, minor subject)

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*Due: Friday 18.11.2016; 14:00h (1 Week)*

### Goals

After doing these exercises,

- You can create tables in a database with SQL
- You know how to store and retrieve data from tables with SQL statements.

### Task 1: More Table Operations

**Difficulty: Easy**

The tutorial showed you how to create a table like this:

```
CREATE TABLE Contacts(  
    PersonID int NOT NULL PRIMARY KEY AUTO_INCREMENT,  
    FirstName VARCHAR(255) NOT NULL,  
    LastName VARCHAR(255) NOT NULL,  
    PhoneNumber INT NOT NULL  
);
```

This is problematic, for example in two situations:

- There will be an error if there already is table 'Contacts'
- If you want your table to have more than the columns PersonID, FirstName, LastName and PhoneNumber, you need to do something else.

There are two statements that can help you. "IF NOT EXISTS" and "ALTER TABLE".

Do an online search and write down the SQL code to:

- a) prevent that 'Contacts' table is created if it already exists.
- b) add an "Address" column to the 'Contacts' table

**Create a file "task1.txt" and add the SQL statements in there.**



## Task 2: Address Book

**Difficulty: Medium**

The goal of this task is to create a data model and database for an address book. Create a file that contains a couple of SQL statements.

The file should have an SQL statement for each of the following steps:

1. Create a database named „mmn\_1617“. Make sure it is only created if it does not exist yet.<sup>1</sup>  
**Example Solution:** `CREATE DATABASE IF NOT EXISTS mmn_1617;`
2. Switch to the newly created mmn\_1617 database.
3. Create a table called „AddressBook“. The table consist of five columns:
  - a. The first column is the ID column. It is a unique numeric identifier that must not be empty and is incremented automatically.
  - b. All other columns hold text (strings). The columns also must not be empty when adding entries.
3. Add some contacts, for example:

ID	FirstName	LastName	StreetAddress	City
1	Theresa	Bauer	Amalienstr. 17	Munich
2	Max	Mustermann	Theresienstr. 49	Munich
3	Felix	Stein	Hauptstr. 2	Karlsruhe
...	...	...	...	...

Add more as you like.

4. Retrieve **all** entries of this table.
5. Retrieve all **last names** from people who live in **Munich**.
6. Retrieve **Mrs Bauer's address and city**.
7. **Alter** the table. Add a new column "Age".
8. **Update** the age of all people in the address book. You can make something up for each person.

**Submit the file as task02.txt.**

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<sup>1</sup> Please note: if you work with your CIP database account that you created during the tutorial, this query fails. Databases can only be created via <https://tools.rz.ifi.lmu.de/>. However, please put your query into the text file anyway to show how this is done.



## Submission

Please turn in your solution via UniWorX as a ZIP archive. You can form groups of up to four people.

We encourage you to sign up for our Slack Team! All you need is a CIP account and an email address that ends in “@cip.ifi.lmu.de”. Ask us if you don’t know how to get them.

If you have questions or comments before the submission, please contact one of the tutors. They are on Slack: [@tobi.seitz](#), [@peterjuras](#) and [@thomas-weber](#). Remember, that they also want to enjoy their weekends 😊

It also makes a lot of sense to ask questions directly in our [#mmn-ws1617](#) channel. Maybe fellow students can offer help or benefit from the answers, too!