**LEK 7 SQL**

**GENERAL QUESTIONS**

What does SQL stand for?

SQL stands for Structured Query Language.

Name two Python Modules that work with SQL.

For example, sqlite3 and psycopg2.

**SQL TABLES**

Which two methods do you know to create tables in SQL? Give an example command for each of them.

Method 1:

CREATE TABLE account (

user\_id SERIAL PRIMARY KEY,

username VARCHAR (50) UNIQUE NOT NULL,

password VARCHAR (50) NOT NULL,

email VARCHAR (250) UNIQUE NOT NULL,

create\_on TIMESTAMP NOT NULL,

last\_login TIMESTAMP);

(comment: SERIAL datatype is used by PostgreSQL for a PRIMARY KEYs)

Method 2:

CREATE TABLE new\_account AS

SELECT username, created\_on

FROM account

WHERE user\_id > 3;

How can you enter data into a table in SQL?

INSERT INTO account (user\_id, username, password, email, create\_on)

VALUES (1, 'Maria', 'password', 'maria\_2@mail.com', CURRENT\_TIMESTAMP );

How can you change data in your table?

UPDATE account

SET email= 'maria\_2@hotmail.com'

WHERE user\_id = 1;

Name and describe 4 constraints you can add to columns in SQL.

1. PRIMARY KEY – this constraint is the combination of NOT NULL and UNIQUE constraints. It uniquely identifies each record in a table.

2. NOT NULL – the value of the column cannot be NULL .

3. CHECK – enables to check a condition when one inserts or updates data.

4. DEFAULT - used to set a default value for a column.

Give an example for all of them.

Examples of the PRIMARY KEY, NOT NULL, CHECK, and DEFAULT constraints are shown below, using employees table:

CREATE TABLE employees (

emp\_id SERIAL PRIMART KEY,

first\_name VARCHAR (50) NOT NULL,

last\_name VARCHAR (50) NOT NULL,

birthdate date CHECK (birthdate > '1900-01-01'),

hire\_date date CHECK (hire\_date > birthdate),

salary INTEGER CHECK (salary > 0),

city VARCHAR (50) DEFAULT 'Berlin');

**SELECTIONS**

How can you select all entries in a table in SQL?

SELECT \* FROM account;

What are the meanings of NOT NULL, ORDER BY and WHERE in SQL?

NOT NULL - used with IS to filter records without values.

ORDER BY - allows a suer to sort the rows returned from the SELECT statement in ascending or descending order based on criteria specified by different criteria.

WHERE - allows a user to add conditions so that to filter the rows returned from the SELECT statement.

Give an example for all three of them.

(NOT NULL)

SELECT last\_login FROM account

WHERE last\_login IS NOT NULL;

(ORDER BY)

SELECT customer\_id, first\_name, last\_name, address\_id FROM customer

WHERE first\_name LIKE 'E%' AND address\_id < 500

ORDER BY customer\_id DESC

LIMIT 1;

(WHERE)

SELECT first\_name, last\_name FROM customer

WHERE first\_name LIKE 'J%';