

# CSE 111 – DATABASE SYSTEMS

## Lab 1

In this lab session you are required to get familiar with the software we will use throughout the semester: SQLite database and its corresponding front-end SQLiteStudio.

1. Download and install SQLite on your machine (<http://www.sqlite.org/>). Test that it works fine by using the instructions in the manual.
2. Download and install SQLiteStudio on your computer (<http://sqlitestudio.one.pl/index.rvt>). Test the main functionality of the GUI.
3. These packages are already installed on the machines in the lab. SQLiteStudio is available through the Applications tab, while SQLite is available through the command line shell (**sqlite3**). Execute the first two steps on your machines only.
4. Read the online documentation for both these packages in order to figure out how to use them.

In order to get a PASS for this assignment, you need to execute the following tasks:

1. Create a database named TPCH.
2. Create the following tables with their corresponding schemas:

(a) **nation** (  
    • n\_nationkey decimal(3,0) not null,  
    • n\_name char(25) not null,  
    • n\_regionkey decimal(2,0) not null,  
    • n\_comment varchar(152)  
)

(b) **region** (  
    • r\_regionkey decimal(2,0) not null,  
    • r\_name char(25) not null,  
    • r\_comment varchar(152)  
)

(c) **part** (  
    • p\_partkey decimal(10,0) not null,  
    • p\_name varchar(55) not null,  
    • p\_mfgr char(25) not null,  
    • p\_brand char(10) not null,  
    • p\_type varchar(25) not null,  
    • p\_size decimal(2,0) not null,  
    • p\_container char(10) not null,  
    • p\_retailprice decimal(6,2) not null,  
    • p\_comment varchar(23) not null  
)

(d) **supplier** (  
    • s\_suppkey decimal(8,0) not null,  
    • s\_name char(25) not null,

- s\_address varchar(40) not null,
- s\_nationkey decimal(3,0) not null,
- s\_phone char(15) not null,
- s\_acctbal decimal(7,2) not null,
- s\_comment varchar(101) not null

)

(e) **partsupp** (

- ps\_partkey decimal(10,0) not null,
- ps\_suppkey decimal(8,0) not null,
- ps\_availqty decimal(5,0) not null,
- ps\_supplycost decimal(6,2) not null,
- ps\_comment varchar(199) not null

)

(f) **customer** (

- c\_custkey decimal(9,0) not null,
- c\_name varchar(25) not null,
- c\_address varchar(40) not null,
- c\_nationkey decimal(3,0) not null,
- c\_phone char(15) not null,
- c\_acctbal decimal(7,2) not null,
- c\_mktsegment char(10) not null,
- c\_comment varchar(117) not null

)

(g) **orders** (

- o\_orderkey decimal(12,0) not null,
- o\_custkey decimal(9,0) not null,
- o\_orderstatus char(1) not null,
- o\_totalprice decimal(8,2) not null,
- o\_orderdate date not null,
- o\_orderpriority char(15) not null,
- o\_clerk char(15) not null,
- o\_shippriority decimal(1,0) not null,
- o\_comment varchar(79) not null

)

(h) **lineitem** (

- l\_orderkey decimal(12,0) not null,
- l\_partkey decimal(10,0) not null,
- l\_suppkey decimal(8,0) not null,
- l\_linenumbers decimal(1,0) not null,
- l\_quantity decimal(2,0) not null,
- l\_extendedprice decimal(8,2) not null,
- l\_discount decimal(3,2) not null,
- l\_tax decimal(3,2) not null,

- l\_returnflag char(1) not null,
  - l\_linestatus char(1) not null,
  - l\_shipdate date not null,
  - l\_commitdate date not null,
  - l\_receiptdate date not null,
  - l\_shipinstruct char(25) not null,
  - l\_shipmode char(10) not null,
  - l\_comment varchar(44) not null
- )

3. Insert data into each of the tables using the features provided by SQLiteStudio.

At the end, you are required to show the TA that the tables contain some data and to provide a script with the SQL commands that create the TPCB database and its tables.