CSE 111 – DATABASE SYSTEMS
Lab 1

In this lab session you are required to create the schema for the TPC-H database you will build throughout the semester. This is the first step in working with any relational database.

In order to complete the lab you have to perform the following tasks:

1. Log in to your GitLab account and set up the SSH public key.
2. Explore the folders and files in the Lab 1 repo.
3. Create a merge request for the `Instructions` issue. This is done from the `Issues` tab. The result of the merge request is a new branch that copies the files from `master`.
4. Clone the repo to your local machine or the remote lab machine. You can choose to directly clone the branch for the merge request, or the `master` and then checkout the merge request branch.
5. Create the following tables with their corresponding schemas:
   - **region** (
     - r_regionkey decimal(2,0) not null,
     - r_name char(25) not null,
     - r_comment varchar(152)

)
   - **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)

)
   - **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

)
   - **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

)
- **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

)
- **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

)
- **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

)
- **lineitem** (
  - l_orderkey decimal(12,0) not null,
  - l_partkey decimal(10,0) not null,
  - l_suppkey decimal(8,0) not null,
  - l_linenumber 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

)

All the `SQL` statements have to be written in the file `create-schema-tpch.sql`. This is the only file you have to edit in this lab.

6. You can check the correctness of your code by executing the command `make run` in the terminal. You have to be in the main lab folder. The expected output is available in `results/1.res`.
7. Commit the changes to `create-schema-tpch.sql` and then push to the GitLab server.
8. Check the output of the pipeline under the `CI / CD` tab to see if your push has passed all the tests.
9. In case there are any errors, repeat the process from step 5.

The score for the lab is assigned based on passing the test case and the commit/push history. The instructor and the TAs have access to the GitLab repos.