Hands-on SQL lab

Introduction to Database Systems

CS-322

DATA-INTENSIVE APPLICATIONS AND SYSTEMS

EPFL

Today: Hands-on SQL

- Using SQL developer (any frontend with JDBC connection works)
- Connecting to the database
- Running a selection query
- Running a join query
- Inserting data
- Deleting data

SQL Developer – SQL IDE

- Java client for the Oracle RDBMS
- Available at:
  - Download the appropriate version, ideally via the download link: https://www.oracle.com/tools/downloads/sqldev-downloads.html

- Most SQL IDEs work (that has JDBC connection – this should be standard):
  - DBeaver (open source): https://dbeaver.io/
  - JetBrains DataGrip (free for students): https://www.jetbrains.com/datagrip/
  - You may use other software if you prefer so

SQL Developer + Oracle DBMS

- Create a new connection with parameters:
  - **username:** C##DB2024
  - **password:** DB2024
  - **hostname:** cs322-db.epfl.ch
  - **port:** 1521
  - **SID:** ORCLCDB
  - **Make sure you are connected to the EPFL network, or that you are using a VPN!**

The Toy University DB

Example Instances

STUDENT

SNUM	SNAME	MAJOR	SYEAR	AGE
1476	Felipa Castromil	CHE	FR	21
1597	Bree Maksutov	ME	FR	23

FACULTY

FID	FNAME	DEPTID
1087	Alica Caminho	2
1015	Aleksandrov Nemeth	0

ENROLLED

SNUM	CNAME
1476	Organic Chemistry
1597	Strength of materials and solid mechanics

COURSE

CNAME	MEETS_AT	ROOM	FID
Organic Chemistry	01.02.19 12:00:00	R302	1087
Database Systems	01.02.19 13:00:00	R202	1015

Tasks

- List all students
- List all courses
- List all courses in which some of the students were below 18 years of age
- Insert your info into the Students table, use your sciper as SNUM
- Insert yourself into Enrolled table for any class
- Delete your entry from the Enrolled table

Solutions

- SELECT * FROM STUDENT;
- SELECT * FROM COURSE;
- SELECT DISTINCT cname
  FROM ENROLLED e, STUDENT s
  WHERE e.snum = s.snum and s.age < 18;

Solutions

- INSERT INTO STUDENT VALUES (<your-sciper>,’<your-name>’, ‘<your-major>', ‘your-year’,<your-age>);
- INSERT INTO ENROLLED VALUES (<your-sciper>,’<cname>');
- DELETE FROM ENROLLED WHERE SNUM = <your-sciper>;