Homework 0. Tutorial

Due date: Mar. 23 (Sun) 23:59:59

Overview

In this project, your task is to understand the submission of assignments using GitHub Classroom. Please complete your answers for the two problem sets: 1) SQL Practice and 2) C++ Programming.

Problem 1. SQL Practice

In this problem, you need to construct a set of SQL queries for analyzing a database that will be provided to you. For this, we use the MySQL sample database (i.e., *classicmodels*).
Please write your own SQL query in to each SQL files located in the **prob1/submission** directory.

DO NOT MODIFY SOLUTIONS DIRECTORY

1. Prepare Database using Docker

```
docker run --name ku-mysql \
       -e MYSQL_ROOT_PASSWORD=admin \
       -d -p 3306:3306 mysql:8.0.33

docker exec -i ku-mysql mysql -uroot -padmin -h127.0.0.1 < prob1/load.sql
```

2. How to run your SQL

```
docker exec -i ku-mysql mysql -uroot -padmin -s classicmodels < submission/q1.sql
```

Q1. Find the total number of customers [0 pt]

Requirements. The goal of this question is to ensure that your output format aligns the same with the formatting used by our auto-grading scripts.

Solution. This is the correct SQL query and the output

```
SELECT count(*) FROM customers;
```

Q2. Find the total number of employees [20 pt]

Hints.

- Read question 1 again :)

Q3. Show the first row in the employees table [20 pt]

Requirements. List all attributes (columns) of employee table

Hints.

- To limit the number of rows retrieved, the keyword `LIMIT` is used.

Problem 2. C++ Programming

Here, we use very simple calculator project to understand how auto-grading system works. For this, you need to write your own code.

You need to fill only **include/calc.h** file.

For example, you need to modify `return 0` to `return a+b`.

```
...

/* add function */
// [Description] This function takes two parameters a and b, and returns
their sum.
// [Hint] return a+b haha
template <typename T>
T Calculator<T>::add(T a, T b) {

        /* write your own code here */
        return 0;
}
```

1. Prerequisite

You need **cmake** build tool. Please install **cmake**.

- Linux Ubuntu

```
sudo apt-get install cmake
```

- Mac

```
brew install cmake
```

- Windows

```
Download at https://cmake.org/download/
```

2. Build

```
cd prob2
mkdir bld && cd bld
cmake ..
make -j
```

3. Run

```
./kudb <test number>
```

Submission

- Due date: 2025.03.23 (Sun) 23:59
- Do not commit or make any changes after the assignment deadline.

How to submit

```
# You can commit and push as you can before the deadline
# For final commit message for final submission, please set the commit
message as submission-student-id (e.g., submission-123123)

git add.
git commit -m “submission-student-id”
git push
```

Late submission policy

- 75%: 1 day late
- 50%: 2 days late
- 25%: 3 days late
- 0%: 4 days and more

Warning

- Do not use ChatGPT
- Do not copy other student’s answer
- Do not collaborate other students. This is an individual project (No groups)
- Do not modify the database file (i.e., Do not insert/delete/update in the database arbitrarily)
- For your query, the order of output columns (attribute) is very important. Please follow the instruction of the problem carefully.
- We will evaluate the answer by comparing the output files. Please make sure to always verify your SQL query works properly. (No partial points)