

Programming Assignment 1

CS 457

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Implementation

Database Organization

Each database is represented as a file folder. When a database is created the program checks if the file folder exists, if it does not, it creates the folder using the os library. Dropping databases is similar. Using the os library if the folder exists the program deletes it and all of its contents. The class data_manager is created at the beginning of every sql session and stores which database is currently being used along with a list of database and table names extracted using os.

Table Management

Each table is represented as a text file and its contents include its columns data types. When a table is instantiated, using the os library, the program creates the text file and writes the types to it. If a table is dropped the associated text file is deleted. All information is kept in the text file and only the table name is included in the data_manager class. Every time a select is called, the file is read into a table object. The table objects contents are then printed. For table alterations, the table is read into memory and then modified accordingly. Once modified it is rewritten to memory.

Compilation

To compile the source code simply type

```
python3 driver.py <sql file name>
```

Or

```
python3 driver.py
```

For standard input. When using the standard input press enter after each individual command or series of commands delimited by semicolon. It also works for injecting a file by typing

```
python3 driver.py <PA1_test.sql
```