CSE 111 – DATABASE SYSTEMS

Quiz 4 (30 points)

Consider the following relational schema:

- Product(maker, model, type)
- PC(model, speed, ram, hd, price)
- Laptop(model, speed, ram, hd, screen, price)
- Printer(model, color, type, price)

which is provided as a `SQLite` database `data.sqlite` populated with sample data for all the tables.

You have to implement the following 5 methods in `Java` or functions in `Python`. The two files `Quiz_4.java` and `Quiz_4.py` contain all the supporting code that allows you to focus only on the required 5 methods:

- `createPriceRange` creates a view `PriceRange(maker, type, minPrice, maxPrice)` that computes the minimum and maximum price for every product **type** (`pc`, `laptop`, or `printer`), for every **maker** in the database. If a maker does not have a product type, there is no corresponding entry in `PriceRange`. (**10 points**)
- `printPriceRange` retrieves all the tuples from `PriceRange` and prints them sorted in ascending order by `maker` and `type`, respectively. (**5 points**)
- `insertPC` inserts data for a new PC passed as function arguments in `Product` and `PC`. (**5 points**)
- `updatePrinter` updates the price of a printer specified by its model number with the new price passed as a function argument. (**5 points**)
- `deleteLaptop` deletes the laptop with the given model number from the database. (**5 points**)

For testing purposes, we provide a series of 6 modification operations in file `input.in`. While you should check your code on these operations, you have to make your implementation general and capable to handle other sequences of modification operations. This is how your submission will be tested. The skeleton code already reads the file and invokes the corresponding method for every operation. You have to implement only the above 5 methods. You can run your code with the command `./test.sh`.

You have to submit a single file, `Quiz_4.java` or `Quiz_4.py`, whichever you decide to implement. Your code should run on the provided database `data.sqlite` and the input file `input.in`. You will be graded based on the output produced by your code on the given and additional operations.