CSIS 3475 - DATA STRUCTURES AND ALGORITHMS

JAVA DATABASE PROJECT SPECIFICATION

Joy Cao

Ronnie Hung

Matthew Lai

Alan Lee

Caleb Park

General Database Rules:

* Table Definition
  + Table names and column names cannot have spaces and must be English-language letters. They also cannot be punctuation characters. The string “noJoin” is a reserved keyword and is also not allowed as a table name.
  + Only the following data types are allowed:
    - String
    - Integer
    - Double
    - Date
* Primary Keys
  + The first field the user defines when using the CREATE TABLE command MUST be the primary key, which will always be an Integer.
  + The name of the column must have “PK” in front i.e. “PKcolumnName”.
* Foreign Keys
  + Foreign key definition MUST be done during table creation. The name of the column must have “FK” in front i.e. “FKcolumnName”.

Specific Commands:

* SELECT Command
  + The user is limited to selecting two tables at a time
* UPDATE Command
  + Can only update a single field in a table at a time.
  + The user must specify the row they wish to edit via the Primary Key
    - UPDATE primarykey IN tablename SET field TO value
* DELETE Command
  + Can delete all rows in a table
    - DELETE ALL ROWS tablename
  + Can delete an entire table
    - DELETE TABLE tablename
  + The user must specify the row they wish to delete via the Primary Key
    - DELETE primarykey FROM tablename
* INSERT Command
  + The user must enter values for all the columns that exist in the table
  + The user must specify the values for the columns in syntax similar to the CREATE TABLE command.
* ORDER BY Command
  + The user is limited to only a single column to order by.
* INNER JOIN
  + The user must define an inner join in the first line, immediately after the first table name i.e. “SELECT colname FROM table1 INNER JOIN table2”.

Search Part:

* Supported Operators
  + >, <, =, >=, <=, !=, like (Case Insensitive)
  + &&, ||, AND, OR (Case Insensitive)
* Description Operators
  + A > B : find records whose A field’s value is bigger than B value
  + A >= B : find records whose A field’s value is bigger than or equal to B value
  + A = B : find records whose A field’s value is equal to B value
  + A < B : find records whose A field’s value is smaller than B value
  + A <= B : find records whose A field’s value is smaller than or equal to B value
  + A != B : find records whose A field’s value is not equal to B value
  + A like B : find records whose A fields string includes string B
* Operators’ Order
  + Process “>, <. =, >=, <=, !=, like” operator first, and combine this result with “&&, ||, AND, OR” from left to right
* Error Handling
  + If search clause’s parameters number is not correct, field name is not existing, or there is not supported operator, it generates SearchException.