

SQL Syntax

Data Manipulation Language
Cody Henrichsen
2/2/15

Data Manipulation Language

- This subset of the SQL Language is where the CRUD operations come into play.
- It is all about the data stored in the tables itself whether inserting, changing or deleting.

Insert

- The C of CRUD - Create and insert are the same
- Two other keywords are needed for a full statement, INTO and VALUES
- All columns that cannot be NULL should be specified and have a value inserted unless a default value is defined

Insert Structure

- Synthetic primary keys not inserted – auto_incremented instead
- Order of parameters in the field list does NOT matter, but needs to match the value list
- If values are dependent on another table, AKA foreign keys; those MUST be inserted first

Insert Sample

- `INSERT INTO `table_name`
(`field_list`, `separated`, `by`, `commas`)
VALUES (match, earlier, parameters,
duh :D);`

Select

- The Read part of CRUD as selecting the data presents it up for reading.
- This is a non-destructive command as it only provides information for a view, and does not impact the data stored within the table
 - AKA Schrödinger's cat is not involved

Select

- Requires the FROM keyword, and can also be paired with other keywords as well.
 - GROUP BY, LIKE, LIMIT, ORDER BY, WHERE
- Results of the query are always a two dimensional table
- Multiple tables are allowed

Select

- If using multiple tables without a limiting clause the result will be $X*Y$ rows big, where X are the results from the first table and Y (et al) are the results from the additional table(s) so designing a query is important

Select Syntax

- `SELECT `fields`, `separated`, `by`,
`commas` FROM table_name,
other_table_separated_by_commas
(EXTRA CLAUSES GO HERE)`

Update

- The U in CRUD is the same so no worries about remembering the right word.
- This changes the existing contents of a field in a table
- A WHERE clause is not required but SHOULD always be used or ALL data will be overwritten

Update

- UPDATE will always be used with the SET keyword which changes the value in the specified field(s)
- This is like the .set() method in an ArrayList or regular replacement in an array

Update Syntax

- UPDATE `table_name` SET `field_name` = value WHERE `some_field` = some_value
 - Changes only the matching value(s) of the WHERE clause
- UPDATE `table_name` SET `field_name` = value
 - Changes EVERY value
 - Not valid for columns with a UNIQUE requirement

Delete

- The last part of the database CRUD
- It does exactly what it says, removes data from the database.
- A limiter is NOT required but like UPDATE should always be used, otherwise acts like TRUNCATE and removes ALL data

Delete Syntax

- `DELETE FROM `table` WHERE `field` < some_value`
 - Removes all values that match the WHERE clause
- `DELETE FROM `table``
 - Removes all contents from the table, equivalent to the TRUNCATE command