Week 8 Research Project

MySQL data types

There are many MySQL data types. 10 common data types include: ***INT, VARCHAR, CHAR, DATETTIME, TEXT, DECIMAL, DOUBLE, BOOLEAN, ENUM,*** and ***FLOAT.***

INT: Integer data types don't have fractions. Examples include TINYINT, SMALLINT, INT, MEDIUMINT, and BIGINT. They can be signed (0, positive or negative numbers), or unsigned (only 0 and positive numbers). Integer data types are helpful to use when needing representation of ID's, date, and time.

CHAR & VARCHAR: CHAR stores non-binary strings with a length no longer than 255 characters. VARCHAR can have a length of up to 65535 characters. For both, the parameter is set in brackets when creating a column. CHAR adds spaces to the right of the length and VARCHAR displays the value without any extra spaces. VARCHAR would be a good data type for a phone number because of the possible symbols or characters included.

DATE & TIME: divided into DATE, TIME, DATETIME, TIMESTAMP, and YEAR. DATE only stores info in the table column (YYYY:MM:DD). TIME only displays time (HH:MM:SS). DATETIME stores both date and time in the same column. TIMESTAMP converts the DATETIME to the value of the server. YEAR only stores the year value (YYYY) in the column.

TEXT: stores long-text strings. Examples: product descriptions and blog comments. Storage size is 1 byte to 4 GB. You don't need to set a length, unlike numeric data types. Four different TEXT types are: TINYTEXT, TEXT, MEDIUMTEXT, and LONGTEXT. TINYTEXT stores short-text strings such as product summary. TEXT stores things like articles. MEDIUMTEXT stores large texts, and LONGTEXT would store huge texts, such as computer programs.

DECIMAL: can store exact, fixed numeric values, such as, price and salary. The syntax is DECIMAL(p,s). The 'p' stands for precision (maximum # of digits) and 's' stands for scale (amount of digits after the decimal).

DOUBLE: the floating-point numeric types. Uses 8 bytes to store values. The syntax is DOUBLE PRECISION (m, d). 'm' is the number of digits and 'd' represents the amount of digits after the decimal point. Example: DOUBLE (8, 4) would store 8 digits and 4 decimals.

BOOLEAN: Since MySQL doesn't recognize Boolean data types, it converts them to either 1 for true, or 0 for false. These data types can only be true or false (1 or 0).

ENUM: strings with enumeration values. The values must be set in a pre-defined list, and any additional values not in the list would return an empty string. Example of an enum list is: size enum ('small', 'medium', 'large') NOT NULL.

FLOAT: single precision approximate numeric values, with 4 bytes of storage required. They can be signed or unsigned. The syntax is FLOAT (m,d), with 'm' equaling the total number of digits and 'd' the amount of digits after the decimal point.

Primary and Foreign Keys in RDBMS

Primary Keys: represent unique data for a certain column in a table. It cannot have NULL values. A table can only have 1 primary key and can be defined on temporary tables.

Foreign Keys: columns in a relational database table that links the 2 tables (usually with the primary key). There can be more than one foreign key in a table, unlike a primary key. It can have NULL values.

Sources:

https://blog.devart.com/mysql-data-types.html

https://blog.devart.com/mysql-int-data-type.html#what_is_mysql_integer

https://www.geeksforgeeks.org/difference-between-primary-key-and-foreign-key/