String Data Types

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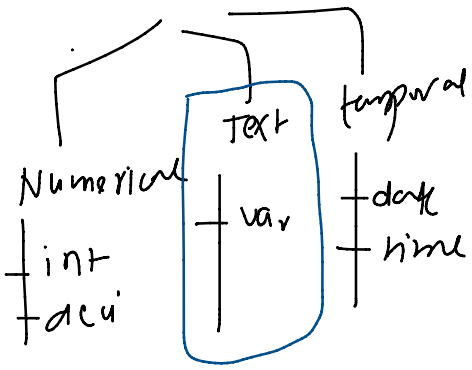
1. **CHAR**: This data type is used to store fixed-length strings. The length of the string is specified when the table is created, and the field will always use that amount of space, regardless of whether the string stored in it is shorter or longer. For example, if you define a CHAR(10) field and store the string "hello" in it, MySQL will pad the string with spaces so that it takes up 10 characters. CHAR fields are useful when you have a field that always contains the same length of data, such as a state abbreviation or a phone number.
2. **VARCHAR**: This data type is used to store variable-length strings. The length of the string can be up to a specified maximum, but the field will only use as much space as it needs to store the actual data. For example, if you define a VARCHAR(10) field and store the string "hello" in it, MySQL will only use 5 characters to store the data. VARCHAR fields are useful when you have a field that can contain varying amounts of data, such as a user's name or address.
3. **TEXT**: This data type is used to store larger amounts of variable-length string data than VARCHAR. It can store up to 65,535 characters. TEXT fields are useful when you need to store large amounts of text data, such as blog posts or comments.
4. **MEDIUMTEXT**: This data type is used to store even larger amounts of text data than TEXT. It can store up to 16,777,215 characters. MEDIUMTEXT fields are useful when you need to store very large amounts of text data, such as long-form articles or legal documents.
5. **LONGTEXT**: This data type is used to store the largest amounts of text data. It can store up to 4,294,967,295 characters. LONGTEXT fields are useful when you need to store extremely large amounts of text data, such as entire books or large collections of data.



char(10)

hello

Text

Wildcards

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The LIKE operator in MySQL is used to match a string value against a pattern using wildcard characters. It is commonly used in SELECT, WHERE, and JOIN clauses to filter or join rows based on a pattern match.

The LIKE operator uses two wildcard characters: the **percent sign (%)** and the **underscore (_)**. The percent sign represents zero, one, or more characters, while the underscore represents a single character.

String Functions

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- **upper/lower**
- **concat & concat_ws**
- **substr -> last 5 chars**
- **replace**
- **reverse -> palindrome**
- **char_length vs length** -> where both are not same -
The main difference between CHAR_LENGTH and LENGTH is that CHAR_LENGTH returns the length of a string in characters, while LENGTH returns the length of a string in bytes. This difference is important when dealing with multi-byte character sets, such as UTF-8, where a single character may be represented by multiple bytes. Example - café

- **insert**(str, pos, len newstr)
  - str: The original string to insert into.
  - pos: The position at which to insert the new substring. The first position is 1.
  - len: The number of characters to replace.
  - newstr: The new substring to insert.

- **left and right**
- **repeat**
- **trim[ltrim and rtrim]**
- **substring_index(Split) -** www.campusx.in
- **strcmp -**
    The STRCMP() function returns an integer that indicates the relationship between the two strings:
    - If str1 is less than str2, the function returns a negative integer.
    - If str1 is greater than str2, the function returns a positive integer.
    - If str1 is equal to str2, the function returns 0.

- **locate("world", "hello world")**
- **lpad and rpad** ('hello', 10, '*')

Data Cleaning

03 March 2023 17:03

1. Create backup
2. Check number of rows
3. Check memory consumption for reference
4. Drop non important cols
5. Drop null values
6. Drop duplicates
7. Clean RAM -> change col data type
8. Clean weight -> change col type
9. ROUND price col and change to integer
10. Change the OpSys col
11. Gpu
12. Cpu

Extra

03 March 2023 17:14

```
SELECT * FROM laptops
WHERE Company IS NULL AND TypeName IS NULL AND Inches IS NULL
AND ScreenResolution IS NULL AND Cpu IS NULL AND Ram IS NULL
AND Memory IS NULL AND Gpu IS NULL AND OpSys IS NULL AND
WEIGHT IS NULL AND Price IS NULL
```