



PHP and MySQL for Dynamic Web Sites

4th Edition

Ch 4 Introduction to MySQL



Learning Outcomes

- Generate valid and description names for database elements
- Choose an appropriate column type
- Explain the difference between CHAR and VARCHAR
- Select proper column properties
- Implement primary key indexes
- Access a MySQL database using phpMyAdmin



Naming Database Elements

- Use only letters, numbers, and the underscore
- Name can't be same as an existing SQL keyword
- Treat as case-sensitive
- Shorter than 64 characters
- Unique within its realm (e.g., database or table)



Primary Column Types

- Text
- Numbers
- Dates and times
- Special types (ENUM and SET)



Specific Text Types

- CHAR
- VARCHAR
- TINYTEXT
- TEXT
- MEDIUMTEXT
- LONGTEXT



CHAR vs VARCHAR

CHAR

- Fixed length
- Generally requires more disk space
- Generally faster
- Best used for values that will always be a fixed length

VARCHAR

- Variable length
- Generally requires less disk space
- Generally slower
- Best used for values that will be of any length



Specific Numeric Types

- TINYINT
- SMALLINT
- MEDIUMINT
- INT
- BIGINT
- FLOAT
- DOUBLE
- DECIMAL



Specific Date and Time Types

- DATE
- DATETIME
- TIMESTAMP
- TIME



Important Column Properties

- Length
- NULL/NOT NULL
- DEFAULT
- UNSIGNED
- ZEROFILL
- AUTO_INCREMENT

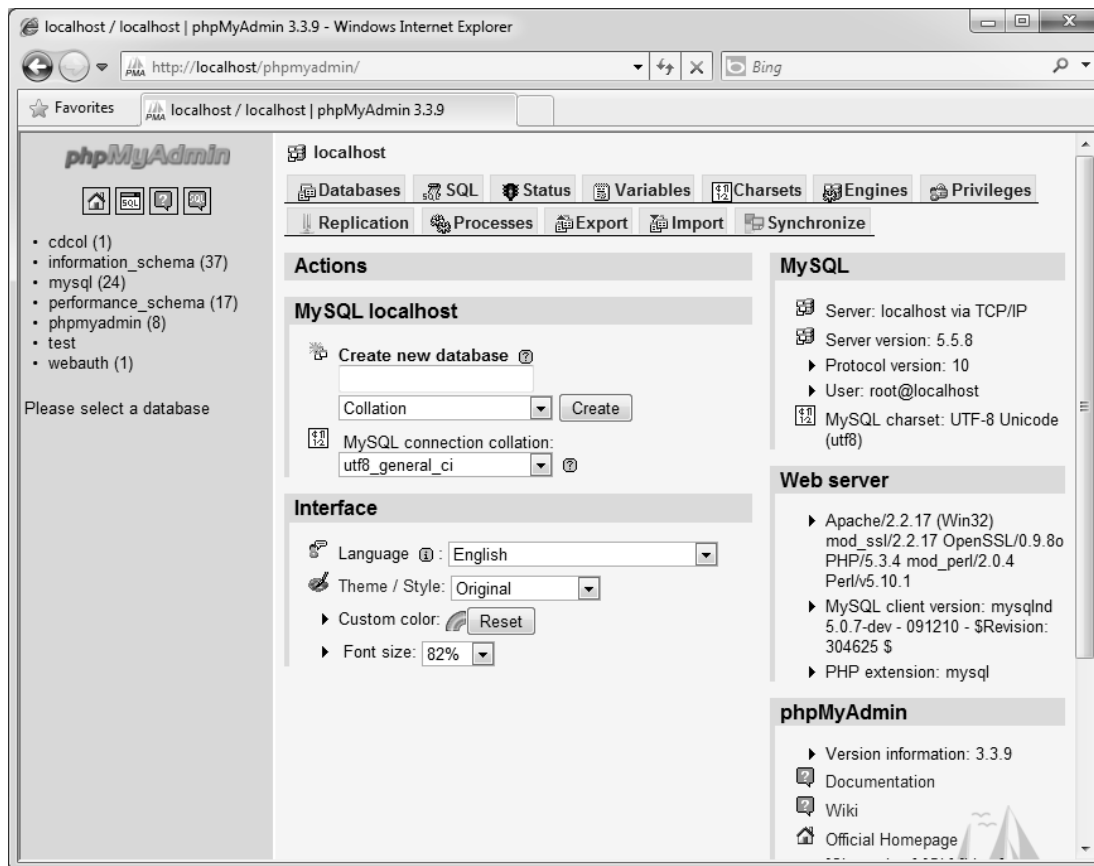


Primary Key

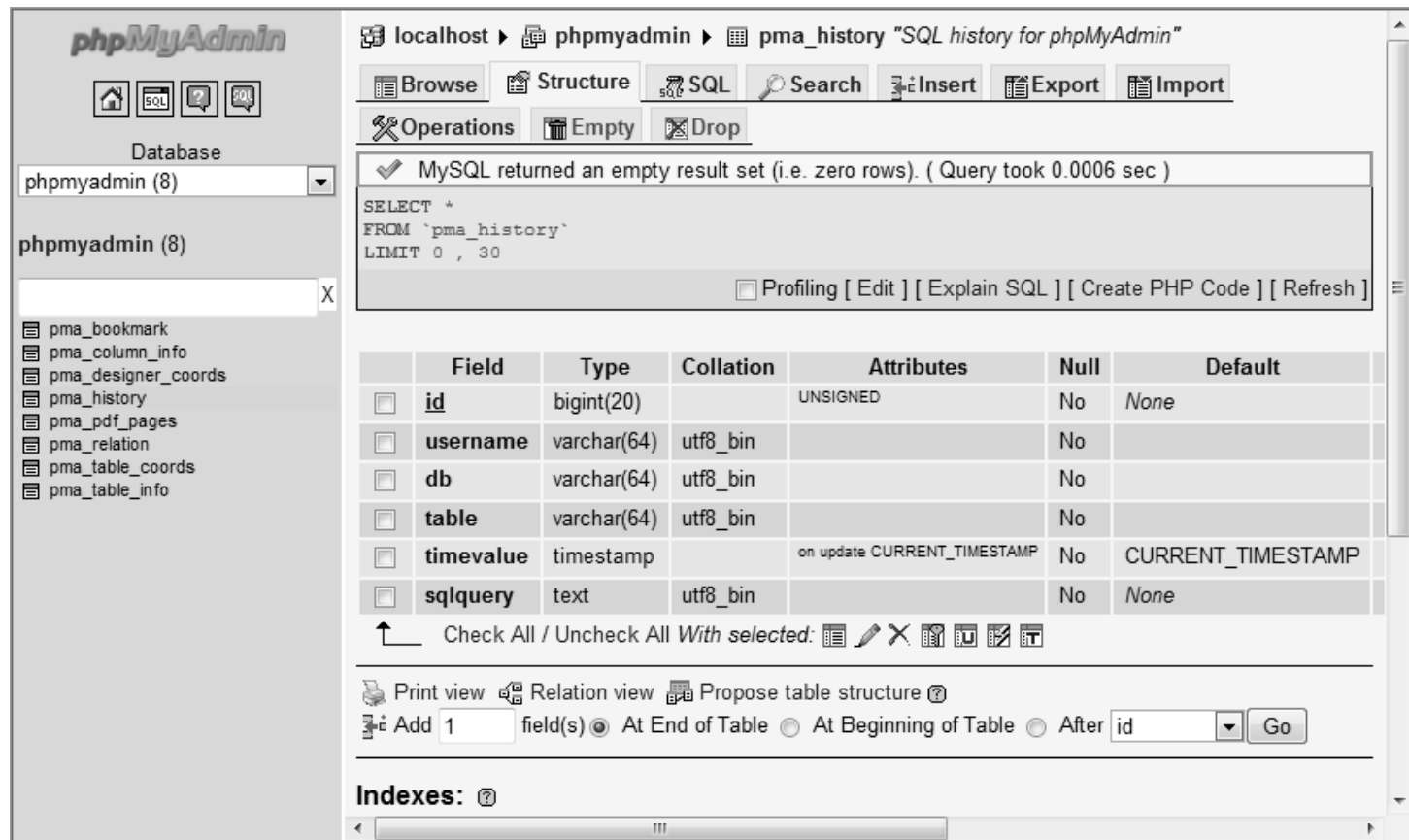
- Must always have a value
- The value must never change
- The value must be unique for each record in the table
- Almost always unsigned, not null integers
- Use `AUTO_INCREMENT` to set the value



Using phpMyAdmin



Selecting a Database



The screenshot shows the phpMyAdmin interface. On the left, the 'Database' dropdown is set to 'phpmyadmin (8)'. Below it, a list of tables is visible, including 'pma_bookmark', 'pma_column_info', 'pma_designer_coords', 'pma_history', 'pma_pdf_pages', 'pma_relation', 'pma_table_coords', and 'pma_table_info'. The main area shows the 'Structure' view for the 'pma_history' table. The SQL query is: `SELECT * FROM `pma_history` LIMIT 0, 30`. The result is an empty set. Below the query, the table structure is displayed in a table format.

	Field	Type	Collation	Attributes	Null	Default
<input type="checkbox"/>	id	bigint(20)		UNSIGNED	No	None
<input type="checkbox"/>	username	varchar(64)	utf8_bin		No	
<input type="checkbox"/>	db	varchar(64)	utf8_bin		No	
<input type="checkbox"/>	table	varchar(64)	utf8_bin		No	
<input type="checkbox"/>	timevalue	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP
<input type="checkbox"/>	sqlquery	text	utf8_bin		No	None

Running Queries

