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 the mysql client

- Access a MySQL database using phpMyAdmin

Naming Database Elements

- Only letters, numbers, and the underscore
- Cannot be the 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
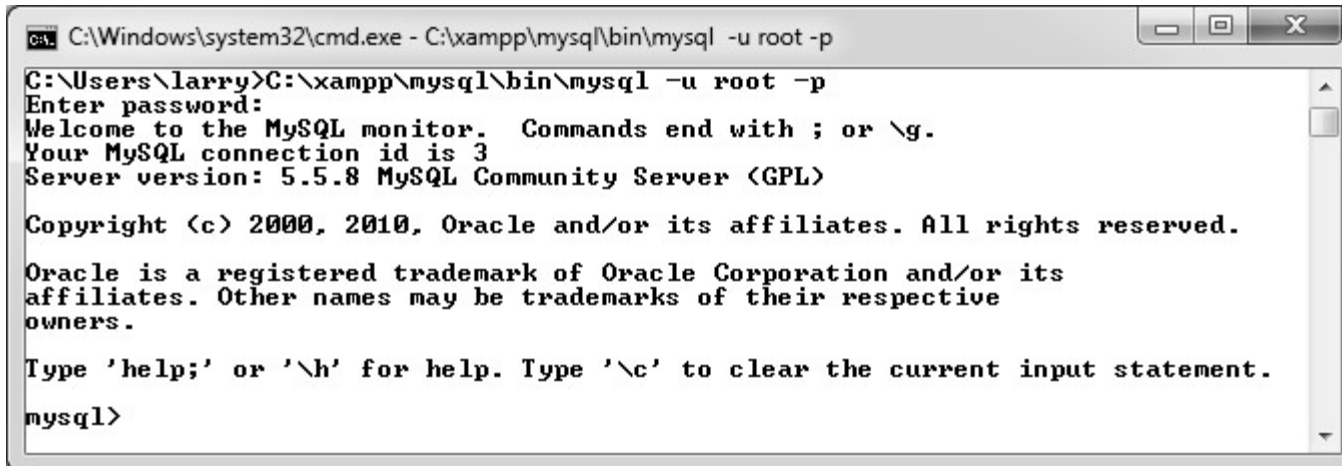- UNSIGNED
- ZEROFILL
- AUTO_INCREMENT

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

The mysql Client

- /Applications/MAMP/Library/bin/mysql (Mac OS X, using MAMP)

- C:\xampp\mysql\bin\mysql (Windows, using XAMPP)

- mysql -u *username* -h *hostname* –p

```
C:\Windows\system32\cmd.exe - C:\xampp\mysql\bin\mysql  -u root -p

C:\Users\larry>C:\xampp\mysql\bin\mysql –u root –p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.5.8 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```
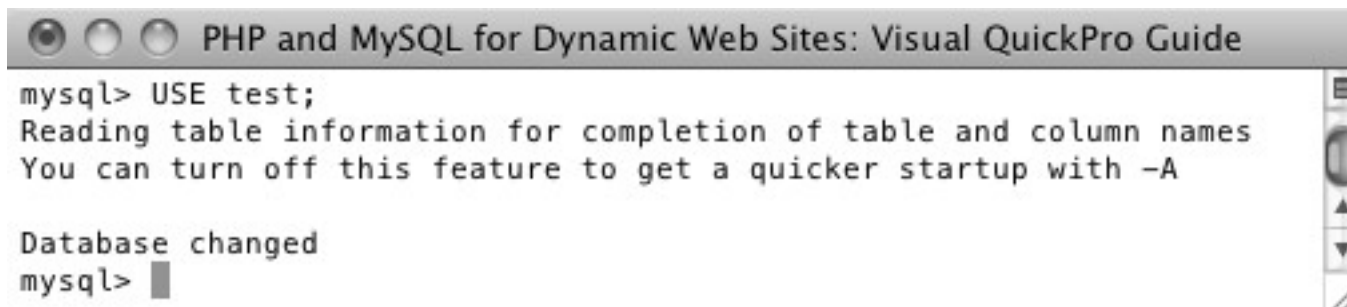
Selecting a Database

- USE *databasename*;

```
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mysql> USE test;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql>
```
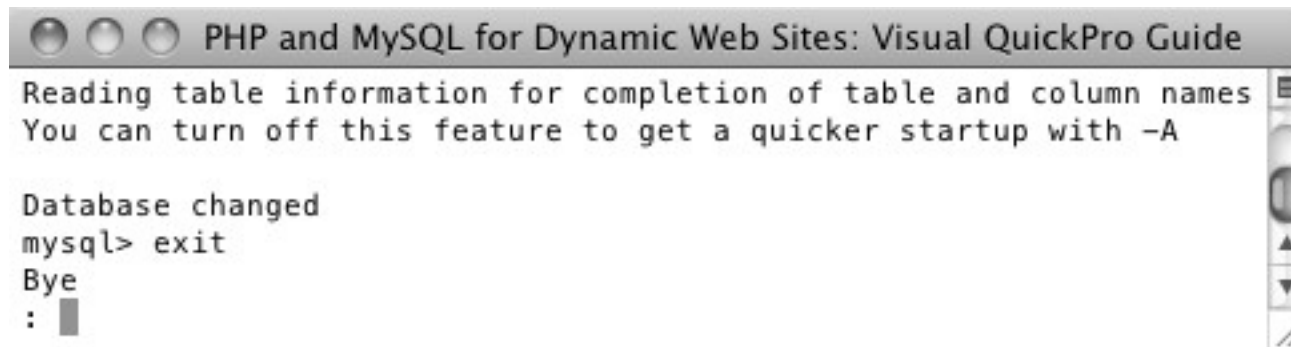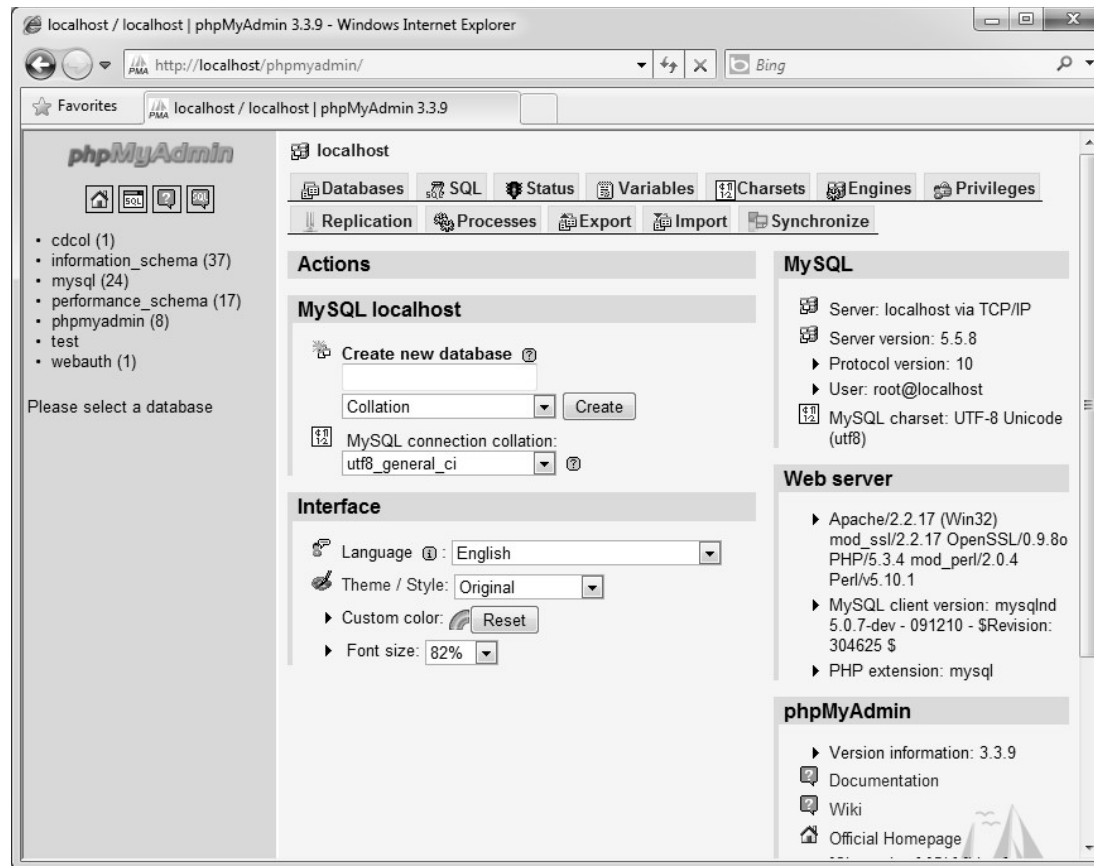
Leaving the mysql Client


```
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Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> exit
Bye
:
```

Using phpMyAdmin

Selecting a Database

Running Queries