PHP and MySQL
Session 2: What is MySQL?

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A brief review

- PHP
  - Variables
  - Operations
  - Functions
- HTML Forms
- Homework
  —Conversion and concatenation
  --Functions

Relational Databases

- Lots of information
- Content that is always related
- Content that is sometimes related

Why not have one giant table?

Date	Book Title	Author First Name	Author Last Name	Patron First Name	Patron Last Name
January 29, 2011	Green Eggs and Ham	Dr.	Seuss	Sally	McBride
January 31, 2011	Stuart Little	E.B.	White	Mario	Batali
February 6, 2011	Winnie the Pooh	A.A.	Milne	Igor	Salbinski
February 8, 2011	The Tale of Peter Rabbit	Beatrix	Potter	Maria	Hernandez
February 9, 2011	Many Moons	James	Thurber	Izzy	Johnston

- Thoroughness
- Consistency
- Human Error
- Dynamic Content

Why not have one giant table?

Key	Author First Name	Author Last Name
001	Beatrix	Potter
002	James	Thurber
003	E.B.	White
004	A.A.	Milne
005	Dr.	Seuss

Key	Book Title	Author Key
00001	Green Eggs and Ham	005
00002	Many Moons	002
00003	Stuart Little	003
00004	Tale of Peter Rabbit, The	001
00005	Winnie the Pooh	004

Key	Patron First Name	Patron Last Name
01	Sally	McBride
02	Izzy	Johnston
03	Igor	Salbinski
04	Mario	Batali
05	Maria	Hernandez

Key	Date	Book Key	Patron Key
1	January 29, 2011	00001	01
2	January 31, 2011	00003	04
3	February 6, 2011	00005	03
4	February 8, 2011	00004	05
5	February 9, 2011	00002	02

Who uses these things?

- Drupal
- Wordpress
- Online Retailers
- Libraries
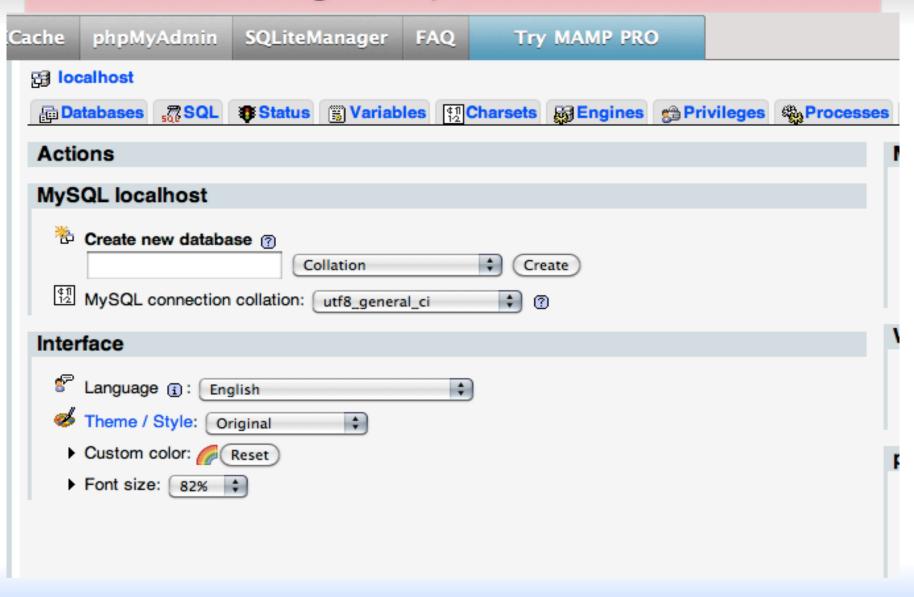- Anyone with lots of content!

What does MySQL have to do with it?

- MySQL *is* a relational database
- Provides structure for data
- Create multiple tables
- "Query" driven
  - Question or request to a database
  - Select a piece of data
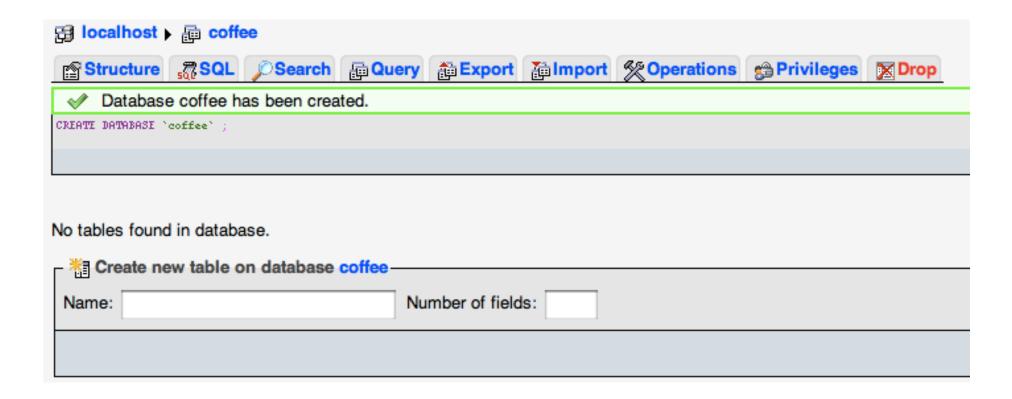 - Delete an entry
  - Etc.

Content Types

- VARCHAR—up to 256 characters
- INT—Integer of up to 11 characters
- FLOAT—Decimal of any size
- TEXT—large amounts of text, no limit in size
- DATE, etc.—date entries of specific formats

Creating a MySQL database

Creating a MySQL database

localhost ▸ **coffee**

Structure | **SQL** | **Search** | **Query** | **Export** | **Import** | **Operations** | **Privileges** | **Drop**

✔ Database coffee has been created.

```
CREATE DATABASE `coffee` ;
```

No tables found in database.

Create new table on database **coffee**

Name: [   ]   Number of fields: [   ]

Creating a MySQL database

localhost ▸ coffee ▸ product

Field	Type ⑦	Length/Values[1]	Default[2]	Collation	Attributes	Null	Index	A_I	C
product_id	INT		None			☐	PRIMARY	☑	
company	VARCHAR	256	None			☐	---	☐	
type	VARCHAR	256	None			☐	---	☐	
roast	VARCHAR	256	None			☐	---	☐	
description	TEXT		None			☐	---	☐	

Table comments: Storage Engine: ⑦   Collation:

PHP and MySQL— partners through thick and thin

- MySQL is a database
- PHP is a language

- MySQL stores the data
- PHP interacts with it

Connecting to a database

db.inc.php

```php
<?php
    $link=mysqli_connect ('localhost', 'root', 'root');
    if  (!$link){
      $output='Unable to connect to the database';
      echo $output;
      exit();
    }
    if (!mysqli_set_charset($link,'utf8')) {
      $output = 'Unable to set database connection encoding.';
      echo $output;
      exit();
    }
    if (!mysqli_select_db($link, 'coffee')){
      $output = 'Unable to locate the database.';
      echo $output;
    exit();
    }
?>
```

Inserting Data

product_insert.html

```
<form action="product_insert_result.php" method="get">
        Company: <input type="text" name="company"/><br/>
        Type: <input type="text" name="type"/><br/>
        Roast:
        <input type="radio" name="roast" value="light">Light</input>
        <input type="radio" name="roast" value="medium">Medium </input>
        <input type="radio" name="roast" value="dark">Dark</input>
        <br/>
        <textarea name="description" rows="10" cols="40"></textarea><br/>
        <input type="submit" value="Submit"/>
    </form>
```

Inserting Data, cont.

product_insert_result.php

```php
<?php
    include 'include/db.inc.php';

    $company = mysqli_real_escape_string($link, $_GET
    ['company']);

    $type = mysqli_real_escape_string($link, $_GET
    ['type']);

    $roast = mysqli_real_escape_string($link, $_GET
    ['roast']);

    $description = mysqli_real_escape_string($link,
    $_GET['description']);
```

Inserting Data, cont.

product_insert_result.php

```php
<?php
    include 'db.inc.php';
    $company = mysqli_real_escape_string($link, $_GET['company']);
    $type = mysqli_real_escape_string($link, $_GET['type']);
    $roast = mysqli_real_escape_string($link, $_GET['roast']);
    $description = mysqli_real_escape_string($link, $_GET['description']);

    $sql = "INSERT INTO product SET

    company='$company',

    type='$type',

    roast='$roast',

    description='$description'";
```

Inserting Data, cont.

product_insert_result.php

```php
<?php
    include 'db.inc.php';
    $company = mysqli_real_escape_string($link, $_GET['company']);
    $type = mysqli_real_escape_string($link, $_GET['type']);
    $roast = mysqli_real_escape_string($link, $_GET['roast']);
    $description = mysqli_real_escape_string($link, $_GET['description']);
    $sql = "INSERT INTO product SET
    company='$company',
    type='$type',
    roast='$roast',
    description='$description'";
    if (!mysqli_query($link, $sql)){
      $error = 'Error adding submitted data: ' . mysqli_error($link);
      echo $error;
      exit();
    }
    header('Location:product_show.php');
?>
```

Showing Data

```php
product_show.php
<?php
    include 'include/db.inc.php';
    $sql='SELECT product_id, company, type, roast,
    description  FROM product ORDER BY product_id DESC';
    $result = mysqli_query($link, $sql);

    if (!$result) {
     $error = 'Error fetching data: ' . mysqli_error($link);
     echo $error;
     exit();
    }
```

Showing Data, cont.

product_show.php
```php
<?php
    include 'db.inc.php';
    $sql='SELECT id, company, type, roast, description  FROM product ORDER BY id DESC';
    $result = mysqli_query($link, $sql);
    if (!$result) {
        $error = 'Error fetching data: ' . mysqli_error($link);
        echo $error;
        exit();
    }
```
```php
while($recording=mysqli_fetch_array($result)){
    $id=htmlspecialchars($recording['id'], ENT_QUOTES, 'UTF-8');

    $company= htmlspecialchars($recording['company'], ENT_QUOTES,
    'UTF-8');

    $type=htmlspecialchars($recording['type'], ENT_QUOTES, 'UTF-8');

    $roast=htmlspecialchars($recording['roast'], ENT_QUOTES, 'UTF-8');

    $description=htmlspecialchars($recording['description'],
    ENT_QUOTES, 'UTF-8');
```

Showing Data, cont.

```php
product_show.php
<?php
      include 'db.inc.php';
      $sql='SELECT id, company, type, roast, description  FROM product ORDER BY id DESC';
      $result = mysqli_query($link, $sql);
      if (!$result) {
        $error = 'Error fetching data: ' . mysqli_error($link);
        echo $error;
        exit();
      }
while($recording=mysqli_fetch_array($result)){
      $id=htmlspecialchars($recording[id'], ENT_QUOTES, 'UTF-8');
      $company= htmlspecialchars($recording['company'], ENT_QUOTES, 'UTF-8');
      $type=htmlspecialchars($recording['type'], ENT_QUOTES, 'UTF-8');
      $roast=htmlspecialchars($recording['roast'], ENT_QUOTES, 'UTF-8');
      $description=htmlspecialchars($recording['description'], ENT_QUOTES, 'UTF-8');
      echo $company;
      echo $type;
      echo $roast;
      echo $description;
   }
?>
```

Showing Data with Style

```php
while($recording=mysqli_fetch_array($result)){
    echo "<p>Company: " . $company . "<br/>";
    echo "Type: " . $type. "<br/>";
    echo "Roast: " . $roast . "<br/>";
    echo "Description: " . $description . "<br/>
    </p>";
    }
```

Showing Data with Style

```php
while($recording=mysqli_fetch_array($result)){
    echo "<div class='product'>
            <div class='company'>" . $company . "--";
    echo "<span class='type'> " . $type . "</span></
    div>";
    echo "<div class='roast'>Roast: " . $roast . "</div>"
    echo "<div class='description'> " . $description .
    "</div>
    </div>";
}
```

Homework

- Build a table in the coffee database with 4 fields
  - company_id, name, country, website
- Based on the product_insert.html, create an insert form for the table named company_insert.html
- Based on the product_insert_result.php create a php file named company_insert_result.php to insert data from the form
- Add at least three coffee companies
- BONUS
  - Based on the product_show.php create a php, create a php file named company_show.php that will show the companies you entered.

Next week—
Build a better database

- Edit and delete data
- Relate tables
- Create search functions
- PHP in the real world

Questions?