An end-to-end example:
A PHP website with a MySQL database
PHP My Admin

Create a Database

Databases

- create database
- cars
- collation
- create

<table>
<thead>
<tr>
<th>Database</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>cars</td>
<td>check privileges</td>
</tr>
<tr>
<td>information_schema</td>
<td>check privileges</td>
</tr>
</tbody>
</table>
Create a table

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Length/Values</th>
<th>Default</th>
<th>Collation</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table comments:

Storage Engine: InnoDB

Collation:

PARTITION definition:
Create tables

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Length/Values</th>
<th>Default</th>
<th>Collation</th>
<th>Attributes</th>
<th>Null</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>make_id</td>
<td>INT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>PRIMARY</td>
</tr>
<tr>
<td>make_name</td>
<td>VARCHAR</td>
<td>65</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hq</td>
<td>TEXT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make_notes</td>
<td>TEXT</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Create more tables
Insert makes

<table>
<thead>
<tr>
<th>Column</th>
<th>Type</th>
<th>Function</th>
<th>Null</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>make_id</td>
<td>int(11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make_name</td>
<td>varchar(65)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make_notes</td>
<td>text</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Insert data

```sql
INSERT INTO `cars`.`makes` (`make_id`, `make_name`, `hq`, `make_notes`) VALUES (1, 'Ford', 'Dearborn, Michigan, USA', 'Best make'), (2, 'Chevrolet', 'Detroit, Michigan, USA', 'A good second best');
```

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Type</th>
<th>Collation</th>
<th>Attributes</th>
<th>Null</th>
<th>Default</th>
<th>Extra</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>make_id</td>
<td>int(11)</td>
<td></td>
<td>No</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>make_name</td>
<td>varchar(65)</td>
<td>latin1_swedish_ci</td>
<td>No</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>hq</td>
<td>text</td>
<td>latin1_swedish_ci</td>
<td>No</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>make_notes</td>
<td>text</td>
<td>latin1_swedish_ci</td>
<td>No</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Browse the data

```sql
SELECT * FROM `models`
LIMIT 0, 30
```
Find info...

SELECT make_name
FROM `models`
WHERE horsepower > 300
LIMIT 0 , 30

Show : Start row: 0 Number of rows: 30 Headers every 100 rows
Sort by key: None

+ Options
make_name
mustang gt
camaro ss

SELECT *
FROM `models`
WHERE make_id = 1
LIMIT 0 , 30

Show : Start row: 0 Number of rows: 30 Headers every 100 rows
Sort by key: None

+ Options
model_id make_id make_name horsepower num_doors make_notes
--- ------- -------- -------- -------- --------
1 1 mustang gt 435 2 crazy awesome car
2 1 ford focus 123 4 cheaper car
Exporting tables from "cars" database

Export Method:
- Quick - display only the minimal options
- Custom - display all possible options

Format:
SQL

```sql
SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET time_zone = "+08:00";

-- Database: `cars`

-- Table structure for table `makes`

CREATE TABLE IF NOT EXISTS `makes` (
    `make_id` int(11) NOT NULL,
    `make_name` varchar(85) NOT NULL,
    `hq` text NOT NULL,
    `make_notes` text NOT NULL,
    PRIMARY KEY (`make_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

-- Dumping data for table `makes`

INSERT INTO `makes` (`make_id`, `make_name`, `hq`, `make_notes`) VALUES
(1, 'Ford', 'Dearborn, Michigan, USA', 'Best make'),
```
function getTheQuery($qnum, $param) {
    if ($qnum == 1) {
        $query = "select make_name from models where make_id = (select make_id from makes where make_name='" . $param . "');";
    } elseif ($qnum == 2) {
        $query = "select * from models where horsepower >= " . $param . ";";
    } elseif ($qnum == 3) {
        $query = "select * from makes where makes.make_id IN (select models.make_id from models where horsepower >= " . $param . ");";
    } elseif ($qnum == 4) {
        $query = "select * from makes JOIN models ON makes.make_id=models.make_id;";
    }
    return $query;
}
SQL connection...

```
26 $servername = "localhost";
27 $username = "root";
28 $password = "";
29 $dbname = "cars";
30
31 // Create connection
32 $conn = new mysqli($servername, $username, $password, $dbname);
33
34 // Check connection
35 if ($conn->connect_error) {
36    die("Connection failed: " . $conn->connect_error);
37 }
38
```
HTML Setup

```html
72 <html>
73 <head><title>Just a quick example...</title></head>
74 <body>
75 <form method="GET">
76  <input type="radio" name="queryNumber" value="1"> Get all models by make...<br>
77  <input type="radio" name="queryNumber" value="2"> Get all makes above a specified horsepower<br>
78  <input type="radio" name="queryNumber" value="3"> Get all makes that have a car over a specified horsepower<br>
79  <input type="radio" name="queryNumber" value="4"> Get all car info from DB<br>
80  <input type="hidden" name="queried" value="true">
81  <input type="text" name="queryParameter">
82  <input type="submit">
83 </form>
84
85 </body>
86 </html>
87```
if(defined($_GET['queried'])) {
    $toQuery = getTheQuery($_GET['queryNumber'], $_GET['queryParameter']);
    $result = $conn->query($toQuery);
    if ($result->num_rows > 0) {
        echo "Query <i>" . $toQuery . "</i> received <b>" . $result->num_rows . " rows...<b><br><br>";
        echo "<table padding=2 border=1><n>";
        $resultNum = 0;
        while($row = $result->fetch_assoc()) {
            if($resultNum == 0) {
                echo "<tr">;
                foreach ($row as $key => $value) {
                    echo "<th"> $key;
                }
                echo "</tr">;
                foreach ($row as $value) {
                    echo "<td"> $value;
                }
                $resultNum++;
            }
            echo "</table>";
        }
    mysql_close($conn);
    ?>
Runs...

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB
Runs...

Query: `select make_name from models where make_id = (select make_id from makes where make_name = "Chevrolet")`; received 2 rows...

- camaro ss
- impala

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB
Runs...

```
Query select make_name from models where make_id = (select make_id from makes where make_name="Ford"): received 2 rows...
```

- **make_name**
  - mustang gt
  - ford focus

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB

Submit
Runs...

Query `select * from models where horsepower >= 300;` received **2 rows**...

<table>
<thead>
<tr>
<th>model_id</th>
<th>make_id</th>
<th>make_name</th>
<th>horsepower</th>
<th>num_doors</th>
<th>make_notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>mustang gt</td>
<td>435</td>
<td>2</td>
<td>crazy awesome car</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>camaro ss</td>
<td>650</td>
<td>2</td>
<td>looks good on paper</td>
</tr>
</tbody>
</table>

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB
Runs...

Query `select * from models where horsepower >= 500;` received **1 rows**...

<table>
<thead>
<tr>
<th>model_id</th>
<th>make_id</th>
<th>make_name</th>
<th>horsepower</th>
<th>num_doors</th>
<th>make_notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>camaro ss</td>
<td>650</td>
<td>2</td>
<td>looks good on paper...</td>
</tr>
</tbody>
</table>

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB

500
Query select * from makes where makes.make_id IN (select models.make_id from models where horsepower >= 300); received 2 rows...

<table>
<thead>
<tr>
<th>make_id</th>
<th>make_name</th>
<th>hq</th>
<th>make_notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ford</td>
<td>Dearborn, Michigan, USA</td>
<td>Best make</td>
</tr>
<tr>
<td>2</td>
<td>Chevrolet</td>
<td>Detroit, Michigan, USA</td>
<td>A good second best</td>
</tr>
</tbody>
</table>

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB

300

300
Runs...

```
Query select * from makes where makes.make_id IN (select models.make_id from models where horsepower >= 300); received 2 rows...

<table>
<thead>
<tr>
<th>make_id</th>
<th>make_name</th>
<th>hq</th>
<th>make_notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ford</td>
<td>Dearborn, Michigan, USA</td>
<td>Best make</td>
</tr>
<tr>
<td>2</td>
<td>Chevrolet</td>
<td>Detroit, Michigan, USA</td>
<td>A good second best</td>
</tr>
</tbody>
</table>
```

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB
Query `select * from makes where makes.make_id IN (select models.make_id from models where horsepower >= 500);` received 1 rows...

<table>
<thead>
<tr>
<th>make_id</th>
<th>make_name</th>
<th>hq</th>
<th>make_notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Chevrolet</td>
<td>Detroit, Michigan, USA</td>
<td>A good second best</td>
</tr>
</tbody>
</table>

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB

500 | Submit
Runs...

Query: `select * from makes JOIN models ON makes.make_id = models.make_id;` received 4 rows...

<table>
<thead>
<tr>
<th>make_id</th>
<th>make_name</th>
<th>hq</th>
<th>make_notes</th>
<th>model_id</th>
<th>horsepower</th>
<th>num_doors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>mustang gt</td>
<td>Dearborn, Michigan, USA</td>
<td>crazy awesome car</td>
<td>1</td>
<td>435</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>ford focus</td>
<td>Dearborn, Michigan, USA</td>
<td>cheaper car</td>
<td>2</td>
<td>123</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>camaro ss</td>
<td>Detroit, Michigan, USA</td>
<td>looks good on paper...</td>
<td>3</td>
<td>650</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>impala</td>
<td>Detroit, Michigan, USA</td>
<td>really not worth buying...</td>
<td>4</td>
<td>197</td>
<td>4</td>
</tr>
</tbody>
</table>

- Get all models by make...
- Get all makes above a specified horsepower
- Get all makes that have a car over a specified horsepower
- Get all car info from DB
Try it at home...

- https://github.com/jbrunelle/ODUCS418F16/blob/master/examples/cars.sql
- mysql -uroot --force --verbose < cars.sql
- https://github.com/jbrunelle/ODUCS418F16/blob/master/examples/explore_cars.php
Check in your code...

- git init
- git add *
- git commit -m “committing my sql dump and php files to my repo”
- git push origin master