CIS 451 Final Project

Fall 2018

name(s): Daniel Beeman

project title: Harry Potter's Hogwarts Design

Connection information

port number: 3629
guest account login/password: cwilson/password
database name: mydatabase

project URL: http://ix.cs.uoregon.edu/~dbeeman/Final.html

highlights: Features 6 applications from the Hogwarts universe! Enjoy a look at some classic attributes of Hogwarts, such as Houses, Potions, Brooms, and more! Features PHP, Mysql, and HTML content.

Table of Contents

Project URL:

http://ix.cs.uoregon.edu/~dbeeman/Final.html

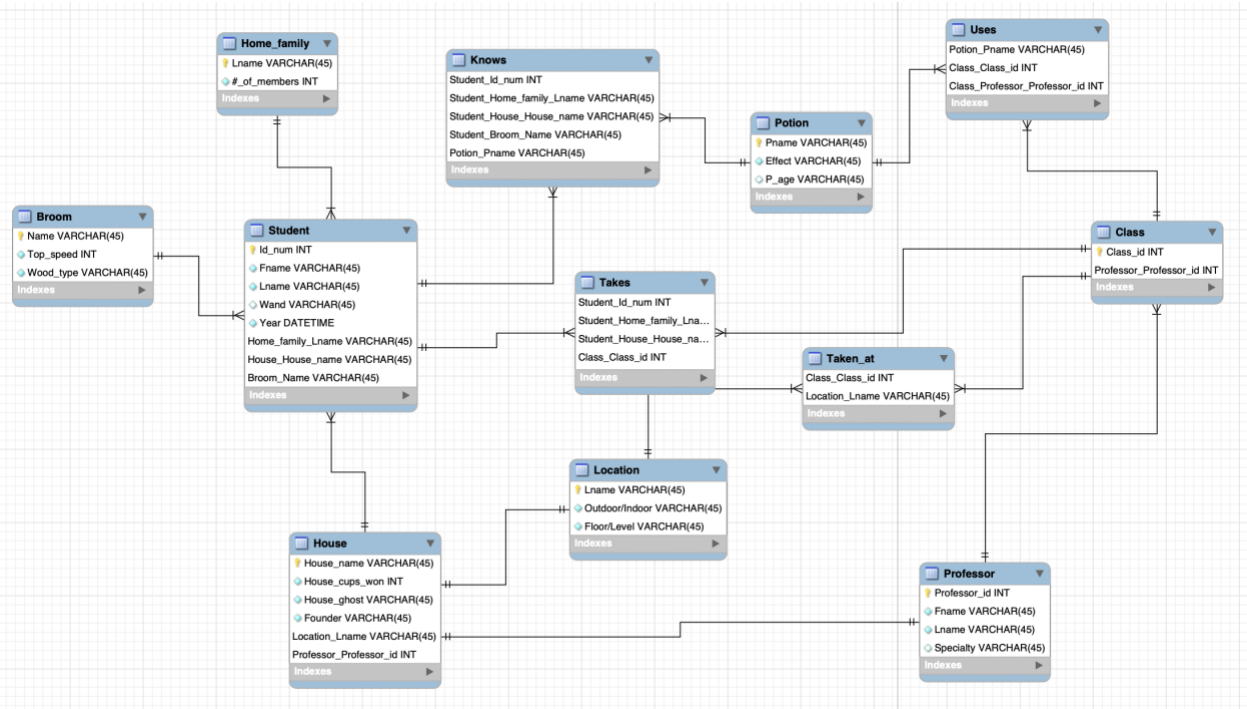
Project code is provided later in this guide (page 9).

Summary

For this project, I have created and implemented a database for Hogwarts, the school from the Harry Potter book series. I have simplified components of the Hogwarts universe, since there are many small details JK Rowling included in her books that would overcomplicate this project. The main 4 entities that exist structure those similar to a real school: Students, Professors, Classes, and one entity integral to Harry Potter, Houses. The houses of Hogwarts are Gryffindor, Ravenclaw, Hufflepuff, and Slytherin, and each student must belong to one house, which is predetermined in this model. There are other differences from a traditional school, such as the existence of potions, brooms for flying and quidditch, and more.

This model helps clarify and organize members of the Harry Potter world and provides a cool look at how different entities interact. There are no other real-world applications for this model, since it exists within a fictitious book series. The six applications I have included at a basic level are the following: Student information by last name, all brooms available, house information by house (or the option to see all house information at once), potions mastered by a student (by last name), potions currently being taught at Hogwarts and by which professor, and professor information. There is much more that could be done with this model, and my applications show at a base level, the kinds of things that my database could be used for.

Logical Design



Physical Design

Student: includes your favorite Harry Potter characters, such as Harry himself, Hermione Granger, Ronald Weasley, Neville Longbottom, and more. For each student, there is basic information such as first name, last name, but also information like the material of the wand for a given student. Student's may know a potion, they have a home family, have a broom, are in a house, and take classes.

House: Like mentioned earlier, there are 4 houses, which are listed in this table. It also includes how many house cups a house has won, the name of their designated house ghost, and the founder of the house, whose last name is the name of the house. A student is in a house, a professors heads a house, and each house has a location.

Professor: A professor, such as Severus Snape, has a first name, last name, and a specialty, such as the Dark Arts. A professor may or may not look over a house, meaning that each house has 1 professor that watches over it, and there are 15 professors, and a professor may teach a class.

Location: A location has a name for a given location, if it is an indoor or outdoor location, as well as what level it is on, if a location is within Hogwarts, such as a classroom on the 3rd floor. A house is at a location, and a class is taken at a location as well.

Class: A class simply has a class id, and has a professor that teaches a class. It also is in a location, uses a spell, and is taken by a student.

Potion: A potion has a name, such as the Polyjuice potion, as well as the effect that potion has, such as good luck. A student may know a potion(s), and a potion is taught in a class.

Home_family: A home family contains the last name for that family, as well as the number of family members for that family. For instance, the Weasley's have 24 family members. A student belongs to a home family.

Broom: A broom has a name, such as 'Firebolt', a top speed in MPH, and the type of wood used for that broom. A student may have a broom.

Application List

My project contains six applications, which can be found at the following URL, if you missed it in the cover page: http://ix.cs.uoregon.edu/~dbeeman/Final.html

The first application display's information from the Student table given a student's last name. It includes information about the ID number, First Name, Last Name, Wand Material, Year and Family Name for a given last name. A search of a name such as 'Weasley' will return multiple students, since multiple Weasley children attend Hogwarts.

The next application displays information about the various brooms of Hogwarts. There are 14 brooms listed, including a 15th 'None' broom, which is used for students that do not have brooms. The best broom is the Firebolt Supreme, at 80mph.

Houses are an important part of Hogwarts, and the next application allows someone to view information on a house. This pulls information from the 'House' table, and also has the added functionality of showing all information about all houses, with the 'View All' button.

The next application shows the potions that a student knows based on their last name, if they know any. A search of 'Granger' gives the most potions, since Hermione knows the most potions. This applications joins the student, and 'knows' table to shoe what a student knows, since potions are not included in the student table.

The next application shows which potions are currently being taught at Hogwarts, by joining Professor and 'Uses' table, showing which professors teach which potions. Only 2 professors are currently teaching potions, as they are the ones that specialize in potions (you can see this in the professor table, the last application).

The last application shows information on the professors of Hogwarts. It includes information from the Professor table.

User Guide

My project is pretty straightforward with how to use each application, with information on how to use an application listed before an application if need be.

Application 1, the student information application, takes the last name of a student. Possible names include: Potter, Granger, Weasley, Malfoy, Longbottom, Thomas, Patil, Chang, Prewet, Slughorn, Diggory, Snake, and Voldemort.

Application 2 shows in formation on the brooms in Hogwarts, simply click the button to display information.

Application 3 shows information on a specific house, or all houses by clicking 'View All'. The possible houses are Gryffindor, Hufflepuff, Ravenclaw, and Slytherin.

Application 4 looks at what potions students know. The list of possible entries include the same set as from application 1: Potter, Granger, Weasley, Malfoy, Longbottom, Thomas, Patil, Chang, Prewet, Slughorn, Diggory, Snake, and Voldemort. NOTE: some of these students do not know any potions, and no potions will be listed.

Application 5 looks at the potions currently being taught at Hogwarts, and by which professors. A simple click of the 'Take a Look' will provide this information.

Application 6 looks at the professors of Hogwarts, and again requires a simple click of the 'Professor Information' button.

Contents of Tables

Broom:
'Bluebottle','20','Beech'
'Cleansweep','30','Oak'
'Comet','63','Maple'
'Firebolt','67','Walnut'
'Firebolt Supreme','80','Teak'
'Moontrimmer','38','Pine'
'Nimbus','62','Ash'
'None','0','None'
'Oakshaft 79','45','Redwood'
'Shooting Star','60','Pine'
'Silver Arrow','35','Cedar'
'Starsweeper','71','Spruce'
'Swiftstick','51','Mahogony'
'Tinderblast','45','Jatoba'
'Twigger','20','Mopane'

Class:
'4','1'
'2','2'
'5','2'
'13','2'
'7','3'
'12','3'
'1','4'
'3','5'
'8','6'
'11','7'
'6','8'
'14','8'
'10','9'
'9','14'
'15','15'

Home_family:
'Black','45'
'Chang','3'
'Death','100'
'Diggory','5'
'Flint','3'

'Granger','11'
'Lestrange','27'
'Longbottom','10'
'Malfoy','11'
'Patil','16'
'Potter','3'
'Prewet','7'
'Shacklebolt','1'
'Slughorn','1'
'Thomas','5'
'Weasley','24'

House:
'Gryffindor','6','Nearly Headless Nick','Godric Gryffindor','Hogwarts','1'
'Hufflepuff','3','The Fat Friar','Helga Hufflepuff','Hogwarts','5'
'Ravenclaw','3','The Grey Lady','Rowena Ravenclaw','Hogwarts','4'
'Slytherin','9','Bloody Baron','Salazar Slytherin','Hogwarts','15'

Knows:
'65834503','Weasley','Gryffindor','Cleansweep','Confusing Concoction'
'65834504','Malfoy','Slytherin','Firebolt','Confusing Concoction'
'65834512','Diggory','Hufflepuff','Starsweeper','Draught of Peace'
'65834502','Granger','Gryffindor','None','Felix Felicis'
'65834502','Granger','Gryffindor','None','Pepperup'
'65834501','Potter','Gryffindor','Firebolt','Polyjuice'
'65834502','Granger','Gryffindor','None','Skele-Gro'
'65834508','Chang','Ravenclaw','Twigger','Veritaserum'
'65834501','Potter','Gryffindor','Firebolt','Wolfsbane'
'65834502','Granger','Gryffindor','None','Wolfsbane'

Location:
'Beauxbatons','Outdoor','1st'
'Classroom 1A','Indoor','1st'
'Classroom 1B','Indoor','3rd'
'Classroom 1C','Indoor','1st'
'Classroom 2A','Indoor','2nd'
'Classroom 2C','Indoor','2nd'
'Classroom 3C','Indoor','2nd'
'Classroom 4D','Indoor','4th'
'Diagon Alley','Outdoor','1st'
'Divination Classroom','Indoor','3rd'
'Durmstrang','Outdoor','1st'
'Godric\'s Hollow','Outdoor','1st'
'Great Hall','Indoor','1st'

'Greenhouses','Outdoor','1st'
'Hogwarts','Outdoor','1st'
'Ilvermorny','Outdoor','1st'
'Malfoy Manner','Outdoor','1st'
'Ollivanders','Indoor','1st'
'Potions Classroom','Indoor','2nd'
'The Leaky Cauldron','Indoor','1st'

Potion:
'Amortentia','Love','500'
'Confusing Concoction','Confusion','267'
'Draught of Peace','Calmness','600'
'Felix Felicis','Good Luck','549'
'Hiccoughing','Stop Hiccoughing','343'
'Pepperup','Health','498'
'Polyjuice','Disguise','754'
'Skele-Gro','Regrow Bones','623'
'Veritaserum','Truth','791'
'Wolfsbane','Obediance','410'

Professor:
'1','Minerva','McGonagall','Transfiguration'
'2','Remus','Lupin','Dark Arts'
'3','Alastor','Moody','Dark Arts'
'4','Filius','Flitwick','Charms'
'5','Pomona','Sprout','Herbology'
'6','Wilhelmina','Grubbly-plank','Magical Creatures'
'7','Horace','Slughord','Potions'
'8','Rubeus','Hagrid','Magical Creatures'
'9','Severus','Snape','Potions'
'10','Firenze',NULL,'Divination'
'11','Sybill','Trelawney','Divination'
'12','Cuthbirt','Binns','History of Magic'
'13','Quirinus','Quirrell','Dark Arts'
'14','Gilderoy','Lockhart','Dark Arts'
'15','Horace','Slughorn','Dark Arts'

Student:

'65834501','Harry','Potter','Holly','4','Potter','Gryffindor','Firebolt'
'65834502','Hermione','Granger','Vine','4','Granger','Gryffindor','None'
'65834503','Ronald','Weasley','Ash','4','Weasley','Gryffindor','Cleansweep'
'65834504','Draco','Malfoy','Hawthorn','4','Malfoy','Slytherin','Firebolt'
'65834505','Neville','Longbottom','Cherry','4','Longbottom','Gryffindor','None'

'65834506','Dean','Thomas','None','3','Thomas','Gryffindor','Oakshaft 79'
'65834507','Padma','Patil','Oak','2','Patil','Ravenclaw','Comet'
'65834508','Cho','Chang','Pine','4','Chang','Ravenclaw','Twigger'
'65834508','Michael','Prewet','Cherry','2','Prewet','Ravenclaw','Swiftstick'
'65834509','Newt','Slughorn','Ash','1','Slughorn','Hufflepuff','Oakshaft 79'
'65834510','Ginny','Weasley','Ash','2','Weasley','Gryffindor','None'
'65834511','Arthur','Weasley','Redwood','5','Weasley','Gryffindor','Cleansweep'
'65834512','Cedric','Diggory','Pine','4','Diggory','Hufflepuff','Starsweeper'
'65834513','Merlin','Prewet','Hawthorn','1','Prewet','Slytherin','Comet'
'65834514','Snakey','Snake','Oak','1','Lestrange','Slytherin','None'
'65834515','Lord','Voldemort','Evil','100','Death','Slytherin','Bluebottle'

Taken_at:
'1','Classroom 1B'
'2','Classroom 1A'
'3','Potions Classroom'
'4','Greenhouses'
'5','Classroom 2C'
'6','Classroom 1B'
'7','Classroom 3C'
'8','Classroom 1B'
'9','Classroom 1A'
'10','Classroom 1C'
'11','Potions Classroom'
'12','Classroom 4D'
'13','Classroom 1C'
'14','Classroom 1B'
'15','Classroom 1A'

Takes:
'65834502','Granger','Gryffindor','1'
'65834507','Patil','Ravenclaw','1'
'65834508','Chang','Ravenclaw','1'
'65834508','Prewet','Ravenclaw','1'
'65834509','Slughorn','Hufflepuff','1'
'65834513','Prewet','Slytherin','1'
'65834501','Potter','Gryffindor','2'
'65834502','Granger','Gryffindor','2'
'65834512','Diggory','Hufflepuff','2'
'65834505','Longbottom','Gryffindor','3'
'65834508','Prewet','Ravenclaw','3'
'65834509','Slughorn','Hufflepuff','3'
'65834504','Malfoy','Slytherin','4'
'65834510','Weasley','Gryffindor','4'

'65834512','Diggory','Hufflepuff','4'
'65834513','Prewet','Slytherin','4'
'65834501','Potter','Gryffindor','5'
'65834502','Granger','Gryffindor','5'
'65834507','Patil','Ravenclaw','5'
'65834513','Prewet','Slytherin','5'
'65834501','Potter','Gryffindor','6'
'65834504','Malfoy','Slytherin','6'
'65834508','Prewet','Ravenclaw','6'
'65834510','Weasley','Gryffindor','6'
'65834502','Granger','Gryffindor','7'
'65834508','Chang','Ravenclaw','7'
'65834502','Granger','Gryffindor','8'
'65834509','Slughorn','Hufflepuff','8'
'65834503','Weasley','Gryffindor','9'
'65834508','Prewet','Ravenclaw','9'
'65834509','Slughorn','Hufflepuff','9'
'65834510','Weasley','Gryffindor','9'
'65834512','Diggory','Hufflepuff','9'
'65834507','Patil','Ravenclaw','10'
'65834508','Chang','Ravenclaw','10'
'65834502','Granger','Gryffindor','11'
'65834503','Weasley','Gryffindor','11'
'65834505','Longbottom','Gryffindor','11'
'65834513','Prewet','Slytherin','12'
'65834503','Weasley','Gryffindor','13'
'65834504','Malfoy','Slytherin','13'
'65834505','Longbottom','Gryffindor','13'
'65834504','Malfoy','Slytherin','14'
'65834507','Patil','Ravenclaw','14'
'65834510','Weasley','Gryffindor','14'
'65834501','Potter','Gryffindor','15'
'65834503','Weasley','Gryffindor','15'
'65834505','Longbottom','Gryffindor','15'
'65834508','Chang','Ravenclaw','15'
'65834512','Diggory','Hufflepuff','15'

Uses:
'Confusing Concoction','10','9'
'Draught of Peace','10','9'
'Skele-Gro','10','9'
'Veritaserum','10','9'
'Wolfsbane','10','9'
'Amortentia','11','7'

'Felix Felicis','11','7'
'Hiccoughing','11','7'
'Pepperup','11','7'
'Polyjuice','11','7'

Implementation Code

HTML:

```
<html>
<head>
    <title>Daniel Beeman Assignment 4</title>
</head>

<body bgcolor="white">

<h2>Welcome to my Final Project!</h2>




<hr>
<h4>
Welcome to Hogwarts... First, take a look at some of the students at the university:
</h4>



<p>
Please enter the last name for a student you would like to see, such as 'Potter' or 'Weasley'
</p>

<form action="final.php" method="POST">

<input type="text" name="lastname"> <br>
<input type="submit" value="submit">
<input type="reset" value="erase">
</form>




<hr>
<form action="2final.php" method="POST">
<h4>
Now, let's take a look at all of the brooms available to those in the wizarding world!
</h4>
<input type="submit" value="See">
</form>
```

```
<hr>

<h4>
In hogwarts, there are 4 houses: Gryffindor, Hufflepuff, Ravenclaw, and Slytherin.
</h4>
<p>
Type in a house name below to see information about that house, or select 'View All' to take a look at all of the houses together!
</p>

<form action="3final.php" method="POST">
<input type="text" name="house"> <br>
<input type="submit" value="submit">
<input type="reset" value="erase">
</form>

<form action="3.5final.php" method="POST">
<input type="submit" value="View All">
</form>

<hr>

<h4>
Let's now see the potions that various students have already learned!
</h4>
<p>
Enter the name of a student to see what potions they know. One smart gryffindor girl knows quite a bit!
</p>

<form action="4final.php" method="POST">

<input type="text" name="potion"> <br>
<input type="submit" value="submit">
<input type="reset" value="erase">
</form>

<hr>

<h4>
Let us now take a look at what potions are currently being taught by professors at Hogwarts.
</h4>
```

```
<form action="5final.php" method="POST">
<input type="submit" value="Take a Look">
</form>

<hr>

<p>
As you can see, the only professors that teach potions are Severus Snape, and Horace Slughorn. This is because they are the only two professors that specialize in potions:
</p>

<form action="6final.php" method="POST">
<input type="submit" value="Professor Information">
</form>

<hr>

</body>
</html>
```

PHP 1:

```
<?php

include('dataFinal.txt');

try
{
	$dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
	print $e->getMessage();
	exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">
```

```
  <hr>


<?php

$state = $_POST['lastname'];

$query = "SELECT * FROM Student WHERE Lname = '';
$query = $query."'".$state."'";

?>


<h3>
-----Student Information-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
        print "execution error: </br>";
        $error = $dbh->errorInfo();
    print($error[2]);
    exit;
}


print "<pre>";
print "\n";

while($row = $result->fetch())
{
    print "\n";
    print "Student ID Number - $row[Id_num]\n";
    print "First Name -------- $row[Fname]\n";
    print "Last Name --------- $row[Lname]\n";
```

```
    print "Wand Material ----- $row[Wand]\n";
    print "Year ---------- $row[Year]\n";
    print "Family Name ------- $row[Home_family_Lname]\n";
}
print "</pre>";

$dbh = null;

?>

<p>
<hr>

<p>

</body>
</html>
```

PHP 2:

```
<?php

include('dataFinal.txt');

try
{
        $dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
        print $e->getMessage();
        exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">
```

```
 <hr>


<?php

//$state = $_POST['wand'];

$query = "SELECT * FROM Broom ORDER BY Top_speed Desc";
//$query = $query."'".$state."'ORDER BY Top_speed Desc";

?>


<h3>
-----The Brooms of Hogwarts-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
      print "execution error: </br>";
      $error = $dbh->errorInfo();
   print($error[2]);
   exit;
}


print "<pre>";
print "\n";

while($row = $result->fetch())
{
   print "\n";
   print "Broom Name ---- $row[Name]\n";
   print "Top Speed ----- $row[Top_speed]\n";
   print "Wood Type ----- $row[Wood_type]\n";
}
```

```
print "</pre>";

$dbh = null;

?>

<p>
<hr>

<p>

</body>
</html>
```

PHP 3:

```
<?php

include('dataFinal.txt');

try
{
	$dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
	print $e->getMessage();
	exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">


  <hr>
```

```
<?php

$state = $_POST['house'];

$query = "SELECT * FROM House WHERE House_name = '";
$query = $query."'".$state."'";

?>


<h3>
-----House Information-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
        print "execution error: </br>";
        $error = $dbh->errorInfo();
    print($error[2]);
    exit;
}


print "<pre>";
print "\n";

while($row = $result->fetch())
{
    print "\n";
    print "House Name --------- $row[House_name]\n";
    print "House Cups Won ----- $row[House_cups_won]\n";
    print "House Ghost -------- $row[House_ghost]\n";
    print "Founder ------------ $row[Founder]\n";
    print "Location ----------- $row[Location_Lname]\n";
}
print "</pre>";
```

```
$dbh = null;

?>

<p>
<hr>

<p>

</body>
</html>
```

PHP 3.5(View all part of application 3):

```
<?php

include('dataFinal.txt');

try
{
	$dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
	print $e->getMessage();
	exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">


  <hr>
```

```
<?php

//$state = $_POST['house'];

$query = "SELECT * FROM House";
//$query = $query."'".$state."'";

?>



<h3>
-----House Information-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
        print "execution error: </br>";
        $error = $dbh->errorInfo();
    print($error[2]);
    exit;
}



print "<pre>";
print "\n";

while($row = $result->fetch())
{
    print "\n";
    print "House Name --------- $row[House_name]\n";
    print "House Cups Won ----- $row[House_cups_won]\n";
    print "House Ghost -------- $row[House_ghost]\n";
    print "Founder ------------ $row[Founder]\n";
    print "Location ----------- $row[Location_Lname]\n";
}
print "</pre>";
```

```
$dbh = null;

?>

<p>
<hr>

<p>

</body>
</html>
```

PHP 4:

```
<?php

include('dataFinal.txt');

try
{
	$dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
	print $e->getMessage();
	exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">


  <hr>


<?php
```

```
$state = $_POST['potion'];

$query = "SELECT Fname, Lname, Potion_Pname from Student s join Knows k on
s.Id_num = k.Student_Id_num WHERE Lname = '";
$query = $query."'".$state."'";

?>


<h3>
-----Student Potion Information-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
        print "execution error: </br>";
    $error = $dbh->errorInfo();
  print($error[2]);
  exit;
}


print "<pre>";
print "\n";

while($row = $result->fetch())
{
  print "\n";
  print "First Name -------- $row[Fname]\n";
  print "Last Name --------- $row[Lname]\n";
  print "Potion ------------ $row[Potion_Pname]\n";
}
print "</pre>";

$dbh = null;
```

```
?>

<p>
<hr>

<p>

</body>
</html>
```

PHP 5:

```
<?php

include('dataFinal.txt');

try
{
	$dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
	print $e->getMessage();
	exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">


  <hr>


<?php

//$state = $_POST['wand'];
```

```
$query = "SELECT Distinct Fname, Lname, Potion_Pname FROM Uses u JOIN Professor p On u.Class_Professor_Professor_id =
p.Professor_id";
//$query = $query."'".$state."'ORDER BY Top_speed Desc";

?>


<h3>
-----Potions Taught at Hogwarts-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
      print "execution error: </br>";
      $error = $dbh->errorInfo();
   print($error[2]);
   exit;
}


print "<pre>";
print "\n";

while($row = $result->fetch())
{
   print "\n";
   print "Professor First Name ---- $row[Fname]\n";
   print "Professor Last Name ----- $row[Lname]\n";
   print "Potion Taught ---------- $row[Potion_Pname]\n";
}
print "</pre>";

$dbh = null;

?>
```

```
<p>
<hr>

<p>

</body>
</html>
```

PHP 6:

```
<?php

include('dataFinal.txt');

try
{
	$dbh = new PDO('mysql:host='.$server.';port='.$port.';dbname='.$dbname, $user, $pass);
} catch (PDOException $e) {
	print $e->getMessage();
	exit;
}

?>

<html>
<head>
  <title>Another Simple PHP-MySQL Program</title>
  </head>

  <body bgcolor="white">


  <hr>


<?php

//$state = $_POST['wand'];

$query = "SELECT * FROM Professor";
```

```
//$query = $query."'".$state."'ORDER BY Top_speed Desc";

?>


<h3>
-----Professors at Hogwarts-----
</h3>

<?php

$result = $dbh->query($query);

if (!$result)
{
        print "execution error: </br>";
        $error = $dbh->errorInfo();
    print($error[2]);
    exit;
}


print "<pre>";
print "\n";

while($row = $result->fetch())
{
    print "\n";
    print "Professor ID ---------- $row[Professor_id]\n";
    print "Professor First Name ---- $row[Fname]\n";
    print "Professor Last Name ----- $row[Lname]\n";
    print "Potion Specialty -------- $row[Specialty]\n";
}
print "</pre>";

$dbh = null;

?>

<p>
<hr>
```

```
<p>

</body>
</html>
```

Conclusion

This was a project I absolutely enjoyed, and I appreciated the opportunity to improve my skills with database design and implementation, PHP coding skills, and HTML abilities. The most enjoyable part for me was designing the applications that built on the database I created. Building the database itself was fun, but a bit tedious putting in the data, especially for tables that had lots of columns. If I had more time, I would add a bit more flavor and life to the HTML page, perhaps with some CSS or other means to style the page to look better. I would also try and create a story within the webpage, adding queries to show how certain characters can do certain things, or perform certain actions based on their attributes (such as using a certain spell by showing that a character knows such spell). I also would try to do more intricate applications, perhaps including a graph, or some other interactive way of showing the data. Overall, this was an enjoyable project, and I hope to learn more about databases and the applications for it, in the future. Have a wonderful winter break!

~Daniel Beeman