

# CS4604 Prakash Fall 2018 Project 3, HTML and PHP

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# Project 3 Outline

- 1. A nice web interface to your database. (HTML)
- 2. Connect to database, issue, and get output of the result of query. (PHP)

# Preparatory Steps

- Select one person in your project in whose directory you will create the files for the web interface.
- In This person's database, create schemas according to the PA2 solution.
- Create a directory called cs4604 in this person's home directory on cs4604.cs.vt.edu. You can log into this machine using your SLO id. You will be able to create / access this directory from any machine on the rlogin cluster as well.
- Make your home directory world-executable (`chmod a+x ~`) and the cs4604 directory world-readable (`chmod a+r cs4604`).
- Place all your scripts and files inside this directory.
- You can access your website at the following URL: `http://cs4604.cs.vt.edu/~"selected person"/"start file name"`

# 1. Introduction to HTML

# 1. Basic HTML (Update links)

- Basic requirements (Minimum requirements):

<http://courses.cs.vt.edu/~cs4604/Fall18/project/template.html>

- Create a simple web page

```
<html>
<title> ..... </title>
<body>
.....
<a> ..... </a>
.....
</body>
</html>
```

- Simple example

<http://cs4604.cs.vt.edu/~dramasubramanian/helloworld.html>

# 1.1 How to create a hyperlink

- Create a hyperlink:

```
<a href="index.php"> index </ a>
```

[index](#)

- When you click this hyperlink, you will go to "index.php"

## 1.2 How to deliver the query

- Create a form :

```
<FORM METHOD=POST ACTION="queryresult.php">  
<input type=text size=150 maxlength=1000 name="query">  
<input type=reset value="Clear">  
<input type=submit value="Submit">  
</FORM>
```

**Please enter your query here**

- “action” means that it will send this form’s data to “queryresult.php”, when you submit this form.
- “method” means how to send this form’s data.
- There are some types you can choose.
- For more information, please go to <http://www.w3schools.com/html/>

## 1.3 How to output the result of query in a table

- How to create a table in html?

```
<table>
<tr><td>Tom</td><td>Jerry</td></tr>
<tr><td>Book</td><td>Paper</td></tr>
.....
</table>
```

- `<table></table>` creates a table.
- `<tr></tr>` creates a row in a table.
- `<td></td>` creates a column in a row.

Tom	Jerry
Book	Paper

- Run the above code and get:
- Simple example:

<http://cs4604.cs.vt.edu/~dramasubramanian/table.html>



## 2. Introduction to PHP

## 2.1 Basic PHP

- A simple php example

```
<?php  
Echo "hello world!";  
?>
```

- How to embed php into html:

```
<html>  
<body><?php          echo "hello world!";          ?></body>  
</html>
```

echo is a print function. [cs4604.cs.vt.edu/~dramasubramanian/hello\\_world.php](http://cs4604.cs.vt.edu/~dramasubramanian/hello_world.php)

- How to embed html into php:

```
<html>  
<body><?php  
echo ' <b>hello world!</b> ';  
?></body>  
</html>
```

## 2.2 Variables in PHP

- Use “\$” to define a variable.

```
$s = “hello world”;
```

- Variable types:

String                    \$s=“database”;

Integer                    \$i=1;

Double                    \$d=6.66;

Boolean                    \$b=false

Array                    \$arr[0] = 1; \$arr[1] = 2; .....

## 2.3 Loop and control statements

- if ... else ...

```
if(expression) {statement1;} else { statement2; ... }
```

- While

```
while(expression) {statement; ...}
```

- do ... while ...

```
do {statement; ...} while(expression)
```

- for

```
for(expression1; expression2; expression) {statement; ...}
```

## 1.2 How to deliver the query (REMINDER)

- Create a form :

```
<FORM METHOD=POST ACTION="queryresult.php">  
<input type=text size=150 maxlength=1000 name="query">  
<input type="text" name="Search">  
<input type=reset value="Clear">  
<input type=submit value="Submit">  
</FORM>
```

**Please enter your query here**

- “action” means that it will send this form’s data to “queryresult.php”, when you submit this form.
- “method” means how to send this form’s data.
- There are some types you can choose.
- For more information, please go to <http://www.w3schools.com/html/>

## 2.4 How to get the value delivered by “form”

- “POST” and “GET” methods:

First please recall the “form” in html:

```
<FORM METHOD=POST ACTION="queryresult.php">
```

```
<input type="text" name="Search">
```

.....

In “queryresult.php”, you can use POST method to get the value of  
“Search” === the input SQL query string

```
$temp = $_POST['Search'];
```

Also you can use the GET method in the same way:

```
$temp = $_GET['Search'];
```

## 2.5 How to connect to database server

- Connect to postgresql:  
`pg_connect("dbname=? user=? Password=?");`
- Make sure you do error / exception handling
- E.g. what happens if the connection or query fails?

For example, we can use this to connect our postgresql server:

```
$dbconnect = pg_connect("dbname=your_database  
user=your_username password=your_password") or  
die('fail to connect:'.pg_last_error());
```

## 2.6 How to run and get the result of query

- Run query:

```
$query="select ... from ... where ...";  
$queryresult = pg_query($query) or die('query  
failed:'.pg_last_error());
```

- More postgresql functions in PHP:
  - `pg_fetch_array`                      Fetch a row as an array.
  - `pg_free_result($queryresult);`      Free result memory.
  - `pg_close($dbconn);`                      Close a postgresql connection.



## 2.6 How to run and get the result of query (Contd.)

- You can check the following link to get more functions:  
<http://us2.php.net/manual/en/ref.pgsql.php>

## 2.7 Sample Queries

- Following sample queries have been made available as part of the demo:
  - Top 10 users in terms of follower count
  - Count of the number of tweets by these top 10 users
  - Top 10 tweets with the largest number of retweets

## 2.7 Demo

- <http://cs4604.cs.vt.edu/~dramasubramanian/template.html>

# Conclusion

- 1. How to create a simple web page in html?
- 2. How to create a hyperlink and a form in html?
- 3. Basic php information.
- 4. How to get the value delivered by the form?
- 5. How to connect database server?
- 6. How to get the result of query?
- 7. How to output the query in a table (html)?

# Something is not covered

- You may create a nicer web page.
- For each output of query, you need to display each column name (attribute name).
- Please read the project 3 carefully, and get more details.
  - Queries, grades, demo schedule, submission policy, and etc.

## More information about HTML & PHP

- <http://www.w3schools.com/html/DEFAULT.asp>
- <http://www.php.net/>
- <http://us2.php.net/manual/en/index.php>
- <http://devzone.zend.com/4/php-101-part-1-down-the-rabbit-hole/>

- Ask TA for help
- All of us will hold the usual office hours.
- Extra TA office hours
  - Nov 6, Nov 29 - During class hours (9:30 to 10:45am)
    - In class