CS 4604: Introduction to Database Management Systems

HTML and PHP

Virginia Tech CS 4604 Sprint 2021
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1. Introduction to HTML
1. Basic HTML

• Create a simple web page
  <html>
  <title> …… </title>
  <body>
      ……
  <a> …… </a>
      ……
  </body>
  </html>
1.1 How to create a hyperlink

• Create a hyperlink:

```html
<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:

```html
<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>
```

• “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/](http://www.w3schools.com/html/)
1.3 How to output the result of query in a table

- How to create a table in html?

  ```html
  <table>
  <tr><td>Tom</td><td>Jerry</td></tr>
  <tr><td>Book</td><td>Paper</td></tr>
  ...... 
  </table>
  
- `<table>` creates a table.
- `<tr>` creates a row in a table.
- `<td>` creates a column in a row.

- Run the above code and get:
2. Introduction to PHP
2.1 Basic PHP

• A simple php example

```php
<?php
    Echo “hello world!”;
?>
```

• How to embed php into html:

```html
<html>
<body><?php
    echo “hello world!”;
?>
</body>
</html>
```
echo is a print function.

• How to embed html into php:

```html
<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:

  ```html
  <FORM METHOD=POST ACTION="queryresult.php">
  <input type=text size=150 maxlength=100 name="query">
  <input type="text" name="Search">
  <input type=reset value="Clear">
  <input type=submit value="Submit">
  </FORM>
  ``

  “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/](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:

```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

```php
$temp = $_POST[‘Search’];
```

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

```php
$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:

```php
$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: 
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

• https://github.com/VTCourses/PHP_tutorial

• http://www.w3schools.com/html/DEFAULT.asp

• http://www.php.net/


• eBooks: Search https://lib.vt.edu/
• Monjura Afrin Rumi (mrumi@vt.edu):
  — FilmFanatic
  — PHP on Windows

• Hongjie Chen (Jeffchan@vt.edu):
  — TooManyGames and TravelLover
  — PHP on Mac / Linux

• All of us will hold the usual office hours.