Web Programming

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Introduction

- Computer Engineering Department
  - 2 majors
    - Computer Science and Engineering
    - Web Design and Engineering

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Introduction

- Frugal Innovation Hub
  - ★ Mobile Computing for Social Benefit
    - ✧ Projects based on existing cellular phones to help under-served communities
      - ◎ Analyzing water
      - ◎ Connecting farmers in Kenya
      - ◎ Educating young people in Nepal
      - ◎ Getting info to homeless people in San Jose

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Web Programming

- Programming 101
  - ★ Create a dynamic webpage to help increase environmental consciousness

Programming

- Why Programming?
  - ★ Every engineering major has a required programming course

Programming

- What is a Program?
  - A set of instructions for telling the computer what to do
  - There are a variety of programming languages to choose from
    - C and C++ are fast, low-level languages for building systems
    - PHP and JavaScript are high-level languages used in Web development

Web Development

- A web page is written in HTML
  - HyperText Markup Language
  - HTML is not a programming language
  - Tags tell the browser how to format the page
- PHP is a server-side scripting language
  - Originally Personal Home Page
  - Runs on the web server
  - Enable dynamic web pages
  - Can also be used as a stand-alone programming language

Using HTML

- Tags are used for formatting

Example:

```
<html>
<body>

<b> Hello </b>

</body>
</html>
```

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Using HTML

One more example:

```
<html>
<body>
<p>List:</p>
<ol>
<li>item 1 </li>
<li>item 2 </li>
<li>item 3 </li>
</ol>
</body>
</html>
```

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Using HTML

One more example:

```
<html>
<body>

<a href ="http://www. … "> link </a>
<img src = "http://www. … ">

</body>
</html>
```

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PHP

- PHP programs
  - ★ Receive and process data
    - ✧ Input comes from a webpage
    - ✧ Output is a webpage created dynamically according to the input
  - ★ To process data
    - ✧ Variables
    - ✧ Literals
    - ✧ Statements

PHP

- A variable is a name whose value can change
  - A variable in PHP is prefixed with a $
  - Examples: $x or $fil
- A literal simply means what it is
  - Examples of integer literals: 5, 13
  - Examples of real literals: 2.7818, 3.14159
  - Examples of string literals: "hello there", 'howdy'

PHP

- Expressions
  - Computations that yield a result
  - Example: 1 + 2 * 3 (result is 7)
- Assignment statements
  - Give values to variables
  - Statements end with a semicolon
  - Example:
    - $x = 1 + 2 * 3;
    - $y = "yes";

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PHP

- Conditional statements
  - ★ Execute certain statements only if a condition is true
  - ★ May have more than one option

PHP

```
$x = 7;
…
if ($x >= 5)
    $x = 10;
…
if ($x == 10)
    $x *= 2;
…
if ($x < 20)
    $x = 0;
```

PHP

```
$x = 7;
$y = "yes";
…
if ($y != “yes”)
    $x = 10;
else
    $x += 2;
```

PHP

```
$x = 7;
…
if ($x <= 5)
    $x = 10;
else if ($x == 10)
    $x += 10;
else
    $x++;
```

PHP

- Looping statements
  - Execute some statements while a condition is true
  - Loops
    - while
    - for
    - do while

PHP

```
$x = 7;
$y = 0;
…
while ($x >= 5)
{
    $x--;
    $y++;
}
```

Our Task

- Use the Web for awareness
  - ★ Use HTML and PHP
- Create a webpage for testing how conscious about the environment a user is
  - ★ The test should have 10 questions
  - ★ Each question is worth 10 points
  - ★ The page reads the answers and calculates how conscious the user is
- Bonus: add a link and a picture

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How it works

- 2 files
  - p1.php
    - HTML forms
    - Questions and Submit button
    - Browser sends answers from p1.php to p2.php
  - p2.php
    - PHP program
    - Receives answers
    - Calculate score according to the answers

Starting…

- To login
  - Username: sesNN
  - Password: S3SwrkSHP
- To edit the files
  - Files: p1.php and p2.ph
  - Folder: OS X ➔ webpages ➔ sesNN
  - Open with Xcode or Dashcode
- To check the result
  - Open a browser
  - Go to URL students.engr.scu.edu/~sesNN/p1.php
  - Answer the questions and click on submit
  - The browser will take you to students.engr.scu.edu/~sesNN/p2.php

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