

CSE 190 M, Spring 2008, Final Exam
ANSWER KEY

1. HTML / CSS Tracing

Baby Geneva's Web Page



What is your name?

My	I
favorite	am
toy	15
is	months
your	old
cell phone	

(written by Geneva, May 2008)

2. HTML / CSS Coding

```
<div id="main">
  <h1> <span class="highlight">Wikipedia - Geneva</span> </h1>
  <p>Geneva is the second-most populous city in ...</p>
  
  <p>Geneva is widely regarded as a global city, ...</p>
  <p>Geneva is also the name of Geneva Francine Stepp, ...</p>
  <ul>
    <li>a desktop wallpaper</li>
    <li>the subject of a recent midterm exam</li>
  </ul>
</div>
<div id="info">
  <h1>Geneva, the name</h1>
  <p>(f) English
    Possibly a shortened form of Genevive, or possibly from
    the name of the city in Switzerland.</p>
  <p>Similar names:</p>
  <ul>
    <li>Jenna</li>
    <li>Jennifer (Jenny)</li>
    <li>Genevieve</li>
    <li>Genevive</li>
  </ul>
</div>

/* CSS code */
body {
  background-image: url(bg.jpg);
  background-repeat: no-repeat;
  font-family: "Verdana", sans-serif;
  font-size: 14pt;
}

.highlight {
  background-color: yellow;
  border: 5px solid orange;
}

#main {
  width: 50%;
  margin-left: auto;
  margin-right: auto;
}

#main img {
  float: left;
  margin-right: 1em;
}

#info {
  border: 5px solid red;
  font-size: 9pt;
  padding: 1em;
  position: absolute;
  right: 1em;
  top: 1em;
  width: 20%;
}

#info li {
  font-style: italic;
}
```

3. PHP (4 solutions shown)

```
<?php
header("Content-type: text/plain");
if (isset($_GET["name"])) {
    $text = file_get_contents("names.txt");
    $lines = explode("\n", $text);
    foreach ($lines as $line) {
        $tokens = preg_split("/[ ]+/", $line);
        if (strtolower($tokens[0]) == strtolower($_GET["name"])) {
            $min = $tokens[1];
            for ($i = 2; $i < count($tokens); $i++) {
                if ($tokens[$i] < $min) {
                    $min = $tokens[$i];
                }
            }
            print $min;
        }
    }
}

if (!isset($min)) {
    print -1;
}
?>
```

```
<?php
header("Content-type: text/plain");
if (isset($_GET["name"])) {
    $lines = explode("\n", file_get_contents("names.txt"));
    foreach ($lines as $line) {
        $tokens = preg_split("/[ ]+/", $line);
        $name = array_shift($tokens);
        if (strtolower($name) == strtolower($_GET["name"])) {
            sort($tokens);
            die($tokens[0]);
        }
    }
} else {
    print -1;
}
?>
```

```
<?php
header("Content-type: text/plain");
if (isset($_GET["name"])) {
    foreach (file("names.txt") as $line) {
        $tokens = preg_split("/\s+/", trim($line));
        if (!strcasecmp(array_shift($tokens), $_GET["name"])) {
            die(min($tokens));
        }
    }
}
print -1;
?>
```

```
<?php header("Content-type: text/plain");
if (isset($_GET["name"]) &&
    preg_match("/\n{\$_GET['name']}([\d ]+\s+)+/i",
        file_get_contents("names.txt"), $matches))
    die(min(preg_split("/\s+/", trim($matches[1]))));
print -1; ?>
```

4. JavaScript / DOM

```
window.onload = function() {
    var imgs = document.querySelectorAll("#pics > img.geneva");
    for (var i = 0; i < imgs.length; i++) {
        imgs[i].onclick = imgClick;
    }
};

function imgClick() {
    this.parentNode.removeChild(this);
    document.getElementById("favorites").appendChild(this);

    var li = document.createElement("li");
    li.innerHTML = "Moved " + this.src + " to favorites.";
    document.getElementById("actions").appendChild(li);
}
```

5. JavaScript / DOM

```
window.onload = function() {
    document.getElementById("eat").onclick = eatClick;
};

function eatClick() {
    var name = document.getElementById("foodname").value.toLowerCase();
    var group = document.getElementById("foodgroup").value;
    var elements = document.querySelectorAll("img.food");
    for (var i = 0; i < elements.length; i++) {
        if (elements[i].classList.contains(group)
            && elements[i].alt.toLowerCase() == name) {
            elements[i].parentNode.removeChild(elements[i]);
        }
    }
}
```

6. Ajax / XML

```
window.onload = function() {
    var ajax = new XMLHttpRequest();
    ajax.onload = ajaxSuccess;
    ajax.open("GET", "personality.xml", true);
    ajax.send();
};

function ajaxSuccess() {
    var persons = this.responseXML.getElementsByTagName("person");
    for (var i = 0; i < persons.length; i++) {
        var name = persons[i].getAttribute("name");
        var type = persons[i].getAttribute("type");
        var answers = persons[i].getElementsByTagName("answers")
[0].firstChild.nodeValue.toLowerCase();
        var b = 0;
        for (var j = 0; j < answers.length; j++) {
            if (answers[j] == "b") {
                b++;
            }
        }

        var li = document.createElement("li");
        li.innerHTML = name + ": " + type + " (" + b + " Bs)";
        document.getElementById("output").appendChild(li);
    }
}
```

7. SQL (2 solutions shown)

```
SELECT DISTINCT t.name, c.name
FROM   teachers t
JOIN   courses c ON c.teacher_id = t.id
JOIN   grades g1 ON g1.course_id = c.id
JOIN   grades g2 ON g2.course_id = c.id
WHERE  g1.student_id <> g2.student_id
AND    g1.grade <= 'C-' AND g2.grade <= 'C-';
```

```
SELECT DISTINCT t.name, c.name
FROM   teachers t
JOIN   courses c ON c.teacher_id = t.id
JOIN   grades g1 ON g1.course_id = c.id
JOIN   students s1 ON s1.id = g1.student_id
JOIN   grades g2 ON g2.course_id = c.id
JOIN   students s2 ON s2.id = g2.student_id
WHERE  s1.name < s2.name
AND    g1.grade <= 'C-' AND g2.grade <= 'C-';
```