

CSE 190 M, Spring 2007

Final Exam

Name: _____

Student ID #: _____

- You have 120 minutes to complete this exam.
You may receive a deduction if you keep working after the instructor calls for papers.
- This test is open-book/notes.
- You may not use any computing devices of any kind including calculators.
- Please do not abbreviate any code on your exam.
- If you enter the room, you must turn in an exam before you leave.
- You must show your Student ID to a TA or instructor for your exam to be accepted.

Good luck!

Problem	Description	Earned	Max
1	HTML/CSS		20
2	Javascript/DOM		20
3	Ajax/XML		20
5	PHP		20
4	SQL		20
X	Extra Credit		+1
TOTAL			100

1. HTML/CSS Interpreting (20 points)

Draw a picture of how the following HTML and CSS code will look when the browser renders it onscreen. Indicate a background coloring by shading lightly or by drawing repeated diagonal lines like *this*. Assume that `stickman.png` is a generic picture of a stick man.

HTML

```
<h1>Scene</h1> <h1>#7</h1>

<div id="a">Elizabeth: Captain Barbosa, I am here to negotiate
the cessation of hostilities against Port Royal.</div>

<div>Barbossa: 
There are a lot of long words in there,
Miss.<br />What is it that you want?</div>

<div class="b">
  <div class="c">Elizabeth: I want you to leave</div>
  <div class="c">and never come back.</div>
</div>

<div class="c" id="d">Barbossa: I'm disinclined to acquiesce
to your request. Means &quot;no.&quot;</div>
```

CSS

```
img      { vertical-align: top; width: 10em; height: 10em; }
#a       { border: 2px solid black; float: left;
padding-right: 3em; width: 33%; }
.a #a    { background-color: yellow; }
.b div   { display: inline; }
.c, .b   { text-decoration: underline; }
.c > .b  { background-color: yellow; }
.d       { float: right; }
```

2. Javascript/DOM (20 points)

Write the Javascript code to accompany the following HTML code, so that when the Delete button is clicked, any button whose text value is divisible by the number written in the text field is removed from the page. You may assume that a valid number has been typed in the text field. The HTML code is the following:

```
<div id="q2controls">
  Divisible by:
  <input type="text" id="divisor" />
  <button id="del">Delete</button>
</div>

<div id="q2buttons">
  Click a button:
  <button>11</button> <button>22</button>
  <button>34</button> <button>42</button>
  <button>50</button> <button>63</button>
  <button>71</button> <button>85</button>
  <button>94</button> <button>103</button>
</div>
```

Divisible by:

Click a button:

For example, after typing the number 2 into the text field and pressing Delete, the following should be the page appearance:

Divisible by:

Click a button:

3. Ajax/XML (20 points)

Write the Ajax Javascript code to fetch and display XML data from the file named `movie.xml` (in the same directory as your code). This file contains lines spoken by a character in a movie. Your code should process the XML and display the character's lines, each in its own paragraph, in the format shown below. Assume that the code will execute on an HTML page containing a `div` with the CSS ID of `q3html`, and insert the paragraphs into this `div`.

The XML data will be in a format that matches the following abbreviated example:

```
<character name="Captain Jack Sparrow" actor="Johnny Depp" />
  <line time="02:55">Captain Jack Sparrow, if you please, sir.</line>
  <line time="3:21">I'm in the market as it were.</line>
  ...
  <line time="2:41:38">On deck, you scabrous dogs! Man the braces!
  Let down and haul to run free. Now... bring me that horizon. And
  really bad eggs? Drink up, me 'earties, yo ho.</line>
</character>
```

For the XML data above, your code would produce the following content on the HTML page:

You may assume that your page already contains the following code from lecture and the slides:

```
function ajaxHelper(url, fn)
```

4. PHP (20 points)

Write PHP code that processes the following form:

```
<form action="solution/q4.php" method="post">
  <fieldset>
    <input type="text" name="name" /> Name<br />
    <input type="text" name="pw" /> Password<br />
    <input type="text" name="cc" /> Credit Card Number<br />
    <input type="submit" />
  </fieldset>
</form>
```

(Onscreen, the form looks like this:)

<input type="text"/>	Name
<input type="text"/>	Password
<input type="text"/>	Credit Card Number
<input type="submit" value="Submit Query"/>	

Your code should examine the name, password, and credit card number submitted, and verify that they are valid. A valid name is any non-empty string. A valid password is any string that is at least 6 characters long. A valid credit card number contains exactly 16 digits. Optionally, the credit card number can contain dashes between some or all groups of four digits. No other characters may be part of a credit card number. For example, the following are some examples of valid and invalid credit card numbers:

Valid	Invalid
1234567812345678	2457.1543.4367.4093
2457-1543-4367-4093	foo1234567812345678
39485098-81902375	12345678123456789
9834-34256678-9827	1234-5678-1234-5678-
	12-34-56-78-12-34-56-78

Your PHP code's output should be a level 1 heading stating whether the data was valid or invalid, followed by a paragraph containing the data itself separated by commas. Replace the password by a string of * characters of equivalent length. Strip any dashes out of the credit card number while displaying it. For example, here are some outputs of your script for various form input:

Form Input	Output
Marty booyah! 1234-5678-1234-5678	Successful. Marty, *****, 1234567812345678
Kenneth hulk 11112222-33334444	Denied! Invalid data. Kenneth, ****, 1111222233334444
Jeff quailman 4321-4321x-4321-43210	Denied! Invalid data. Jeff, *****, 43214321x432143210

Use regular expressions for pattern matching and replacement. Assume that the page begins with some introductory HTML content stored in the file `q4top.html` and some ending content stored in the file `q4bottom.html`, both of which you must place into your page.

5. SQL (20 points)

Write an SQL query that will return the names of all characters that appeared in **two or more** of the *Pirates of the Caribbean* movies; that is, movies whose name contains the substring "Pirates of the Caribbean". Ensure that the results are returned in alphabetical order. If it helps you, you may assume that the character is played by the same actor in both movies. The following is a subset of the results returned:

```
+-----+
| Anamaria
| Bad Pirate
| Barbossa
| Bo'sun
| Butler
| Captain Jack Sparrow
|
| ..
| Young Elizabeth
| Young Will
+-----+
73 rows in set (53.41 sec)
```

Recall that the imdb database contains the following tables:

Actor				Movie			Cast		
id	fname	lname	gender	id	name	year	aid	mid	Role
433259	William	Shatner	M	112290	Fight Club	1999	433259	313398	James T. Kirk
797926	Britney	Spears	F	209658	Pi	2000	433259	407323	T.J. Hooker
831289	Jenny	Weaver	F	210511	Memento	2000	797926	342189	Herself
...					

X. Extra Credit (+1 point)

Write a haiku related to CSE 190M. A haiku is a Japanese poem made of three lines with 5, 7, and 5 syllables respectively. For example, the following is a haiku about Java:

```
public class Marty  
public static void Booyah  
System out println
```

(Any reasonable attempt at a haiku will get the +1 point.)