

FINAL EXAMINATION KEY – MAY 2007
CSC 105 – INTERACTIVE WEB DOCUMENTS
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This is an open-book, open-notes exam.

All answers should be written in your exam booklet(s). Start with the questions that you know how to do, and try not to spend too long on any one question. Partial credit will be granted where appropriate if you show your work. You will have two hours and twenty minutes. Good luck!

1. Cascading Style Sheets (24 points)

Devise an appropriate rule or rules for the following situations. In each case, write a sentence explaining why you chose the particular selector used, and whether the HTML tags will need any identifying characteristics (class, id, etc.) added to it to make the rule apply.

- a.) All main headings should be italicized.

h1 {font-style: italic;}

Use an ordinary selector. HTML will need no alteration.

- b.) All link text should change color to gray when the mouse is moved over them.

a:hover {color: gray;}

Use a pseudoclass selector. HTML will need no alteration.

- c.) The document should display a background image, from the file `pattern.jpg`.

body {background-image: url("pattern.jpg");}

Use an ordinary selector. HTML will need no alteration.

- d.) Text identified as a URL should be printed in a typewriter font (e.g., Courier).

.url {font-family: Courier, Helvetica, sans-serif;}

Use a class selector. HTML tags will need to add `class="url"`.

- e.) The company logo, which is an image appearing on every page of a site, should have a dotted yellow border around it, five pixels wide.

#logo {border: dotted yellow 5px;}

Use an id selector. HTML tags will need to add `id="logo"`.

- f.) In an ordered list with sublists (i.e., nested lists), the sublist items should be labeled using lowercase letters. (For example, in this exam the questions are labeled with numbers, and question parts are labeled with lowercase letters.)

ol ol li {list-style-type: lower-alpha;}

Use a nested selector. HTML tags will need no alteration.

2. Document Object Model (20 points)

Consider the following fragment of HTML. For each question, you should write one line of Javascript that will achieve the desired effect when executed (inside a function, for example).

```

<div id="D1" style="position: relative">
  <ol id="list">
    <li id="item1">Cogito</li>
    <li id="item2">Ergo Sun</li>
  </ol>
</div>
```

Example: Double the width of the image.

```
document.getElementById("me").style.width = "160px"
```

a.) Make the text in the list 18 millimeters tall.

```
document.getElementById("list").style.fontSize = "18mm"
```

b.) Change the image source to “you.jpg.”

```
document.getElementById("me").src = "you.jpg"
```

c.) Make the image move 3 inches to the right.

```
document.getElementById("me").style.left = "3in"
```

d.) Change the text of the second list item to read “Ergo Sum.”

```
document.getElementById("item2").innerHTML = "Ergo Sum."
```

e.) Make the image disappear (not display itself).

```
document.getElementById("me").style.display = "none"
```

3. Dynamic HTML (12 points)

Identify by name the event(s) that could be triggered by the following action. If the action cannot trigger any event at all, write the word “None.”

a.) The user presses the mouse while the cursor is over a button that is not part of a form.

```
onClick (& onMouseDown, onMouseUp)
```

b.) The user presses the mouse while the cursor is over a text input box.

```
onFocus
```

c.) The user types in a text input box and presses Enter.

```
onChange (& maybe onSubmit)
```

d.) The user moves the mouse over an image.

onMouseOver

e.) The user presses the mouse in the background of the page.

onClick (& onMouseDown, onMouseUp)

f.) The user presses the browser's Stop button as the page is being loaded.

onAbort

4. Conditionals (12 points)

Suppose that you are making a web site that will play a dreidel game. (A dreidel is a four-sided top with a Hebrew letter on each side: SHIN, HEY, GIMEL, NUN) You want to simulate a spin of the top, and have the name of one of these four letters appear in your page. Part of the script has been written for you, but you will need to fill in a conditional script.

```
<script>
var side = Math.floor(Math.random()*4)+1
document.writeln('The dreidel shows:  ')
if (side == 1) {
    document.writeln('SHIN')
} else if (side == 2) {
    document.writeln('HEY')
} else if (side == 3) {
    document.writeln('GIMEL')
} else {
    document.writeln('NUN')
}
</script>
```

5. Functions (12 points)

You want to create a rollover effect for two images. In the sample fragment below, the boxed letter **A** through **P** represent places where something must be filled in to complete the working effect. Some of these items must be the same in order for the effect to work properly – file names, element ids, and variable names all may appear more than once. You have two tasks. First, group together the items that **must** be the same. Second, indicate any items that must be placed in quotes (not counting the quotes already shown).

Example: *A and C must be the same; neither should be in quotes.*

```
<script>
function swap(A,B) {
    document.getElementById(C).src = D
}
</script>
```

```


```

F and J must be the same; J must be in quotes.
L and P must be the same; P must be in quotes.
E and G and I must be the same; G and I must be in quotes.
K and M and O must be the same; M and O must be in quotes.
B and D must be the same; neither should be in quotes.
H and N need not be the same, but should both be in quotes.

6. Forms and Cookies (12 points)

Consider the form below. It will be submitted via one of the two submit buttons.

```
<form action="invoice.html" method="get">
<select id="price" name="price">
<option value="19.95">Regular ($19.95)</option>
<option value="22.95">Deluxe ($22.95)</option>
</select>
<button type="submit" id="one" name="one" value="yes">Buy One</button>
<button type="submit" id="two" name="two" value="yes">Buy Two</button>
</form>
```

a.) List the four result strings this form could generate.

```
?price=19.95&one=yes
?price=19.95&two=yes
?price=22.95&one=yes
?price=22.95&two=yes
```

b.) Assume that the customer is ordering one item. Write a script that would read the cost, and store it in a variable called `total`. You may use the form processing functions provided in class. (Hint: Don't forget to use `Number()` to convert string values.)

```
var total = formValue('price')
```

c.) Suppose that the total value of this customer's previous purchases is stored in a cookie called `PurchaseHistory`. Write a script that would add the amount in `total` to the value stored in this cookie.

```
setCookie('PurchaseHistory',total+getCookie('PurchaseHistory'))
```

7. Design (12 points)

The internal state of a page should be indicated in its external appearance. If the internal state changes, the external appearance should change accordingly. Discuss, giving reasons and at least two examples.

The internal state of a page refers to any information the page has collected, as well as the potential actions the page offers to the user. Changing the display to reflect the

internal state provides important feedback to the user. For example, moving the mouse over a hot spot changes the internal state of the page, because clicking the mouse will now cause something to happen that wouldn't have happened beforehand. With more complicated interactions, changing the display prevents the user from becoming confused. For example, in a shopping site, if the price total does not update when the user selects a new item, the user may become confused about how much they have spent.