THE TABLE-CONCEPT IN HTML

Table:
• It is a 2-dimensional structure: a list of rows (row-major), with each row being a list of entries, one for each column (or a group of consecutive columns).

<table>
<thead>
<tr>
<th>Horizontal list of columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical list of rows</td>
</tr>
</tbody>
</table>

• Tables can be nested, with each table-entry itself being a table.
• A table is defined by a pair of table-tags: `<table>` and `</table>`

Rows:
• Each row is defined by a pair of row-markers: `<tr>` and `</tr>`:
• There is no explicit declaration of the number of rows; it is determined by the number of `<tr>`-`</tr>` pairs.
• Different rows in a table may have different number of entries provided they together span the same number of columns.

Columns:
• Each column-entry for a row is defined by a pair of `<td>` and `</td>`.
• There is no explicit declaration of the number of columns; it is determined by the number of `<td>`-`</td>` pairs.

‡ See http://www.w3.org for most updated information
A TABLE EXAMPLE

<table> <!-- Comment: a table with 3 rows and 5 columns -->
<tr>
  <td> ... <!-- table entry -->
  </td>
  <td> ... </td>
  <td> ... </td>
</tr>
<tr>
  <td colspan="3"> ... </td>
  <td colspan="2"> ... </td>
</tr>
<tr>
  <td> ... </td>
  <td> ... </td>
  <td colspan="2"> ... </td>
  <td> ... </td>
</tr>
</table>

Question:
• Can we interchange the positions of second row and first row?
• Could we logically remove some of </td> (or </tr>) tags?

Attributes for tables, rows, and individual entries:
• align (left, right, center, justify), valign (top, bottom, center), ...
• color, width, ...
NESTED TABLE

Can we use nested tables to creates tables with following structures, with overlap in columns or in rows (see below)? If so, show the tag-structure.

Question:

```
<table>
  <tr>
    <td> ... </td>
    <td colspan="2">
      <table>
        <tr> <td> ... </td> <td> ... </td> </tr>
        <tr> <td> ... </td> <td> ... </td> </tr>
      </table>
    </td>
  </tr>
  <tr> <td> ... </td> <td> ... </td> <td> ... </td> </tr>
</table>
```
NESTED TABLE-STRUCTURE FOR TOP PART OF MY WEB-PAGE

Observations if display-window width is reduced:

1. The horizontal separation between name-address column and phone-fax-email column stays above a minimum value, which is larger than, say, that for the columns of Table-of-Contents.

2. The word "Fax" and the fax-number (225) 578-1465 becomes vertically misaligned.

3. The address-line "Berkeley …" remains always separate from its preceding line.

4. The space to the left and to the right of this top-part of the webpage is always the same.

5. When you shrink the width below a certain point, the height of this part begins to grow to accommodate some of the address-text, which now occupies more lines.

6. If you think further, then at some point the display begins to loose information from the right side.

Nested Table Structure: Darkest areas are space-holders.

Top-level: 1 row and 2 columns.
MAKING A LIST OF ITEMS

Lists: Always ordered (first item, second item, etc).

- If the ordering is significant, we can indicate the ordering by 1, 2, 3, ... (or A, B, C, ..., or I, II, III, ..., etc).
- Otherwise, we can use a bullet or some other graphic symbol.
- Lists can be nested.

```html
<ol type="1">
  <li>The first list
    <ul type="square">
      <li>Item 1.1</li>
      <li>Item 1.2</li>
    </ul>
  </li>
  <li>The second list (students, their addresses, telephones, etc.)
    <dl>
      <dt>Mr. Randy Johnston</dt>
      <dd>Randy’s address, etc. His telephone numbers:
        <br><b>225-579-1122</b>, 225-367-8888, ...
        <p>Favorite hobby: Scuba diving.</p>
      </dd>
      <dt>Ms. Kimberly Soloway</dt>
      <dd>Kimberley’s address, etc.</dd>
    </dl>
  </li>
</ol>
```

1. First list
   - Item 1.1
   - Item 1.2
2. The second list (students, their addresses, telephones, etc.)
   Mr. Randy Johnston
   Randy’s address, etc. his telephone numbers:
   **225-579-1122**, 225-367-8888, ...

   Favorite hobby: Scuba diving.

   Ms. Kimberly Soloway
   Kimberley’s address, etc.

**Question:** How can we make "Item 1.2" to have a different bullet-type?
FRAME: A MORE GENERAL WEB-PAGE ORGANIZATION CONCEPT

- The organization of boxes/cells follow the same row-column format of web-tables.
- One can independently modify the display in a cell to any web-page, keeping the other cell-contents unchanged. (Each cell behaves like a web-page display-window in itself.)
  - The display may depend on menu-selections in other cells.
  - One can move backward/forward within the displays in a cell.
  - A click on a hyperlink in the display in a cell will bring the new web-page in that cell only instead of a new display-window.
- Can be nested like tables.

Example.

<table>
<thead>
<tr>
<th>Personal Data and Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table of Contents</strong></td>
</tr>
<tr>
<td>• Item 1</td>
</tr>
<tr>
<td>• Item 2</td>
</tr>
<tr>
<td>• Item 3</td>
</tr>
<tr>
<td>• Item 4</td>
</tr>
<tr>
<td>An web-page display with its own scroll-bars and whose content depends on the selected item in Table of Contents</td>
</tr>
</tbody>
</table>

Today’s personal message: ...
THE FRAME SYNTAX

Defining the frame:
<frameset rows="200, *, 5%">
  <frame src="old-index.html"> <!-- initial content -->
  <frameset cols="150, *">
    <frame src="short-table-of-contents-in-frame.html">
    <frame src="col2-in-frame.html" name="col2">
    </frameset>
  <frame src="bottom-in-frame.html">
</frameset>

short-table-of-contents-in-frame.html:
<body>
  <H3> Table of Contents </H3>
  <ul>
    <li> <a href="short-table-of-contents-item-1.html" target="col2"> Item 1 </a>
    <li> <a href="short-table-of-contents-item-2.html" target="col2"> Item 2 </a>
  </ul>
</body>

short-table-of-contents-item-1.html:
<body> Contents
  <p> of display <p> for Item 1 <p> in <p> Table of Contents.
</body>
WEB-MODELING

Page to Page Navigation Model:

+ Shows the reachability relationship among the pages as provided by the explicit links via `<a href=URL-address>... </a>`

− Does not include the standard backward/forward buttons provided by the web-browser.

− Does not include within-page (local) navigation via the combination of `<a href=#id-name>... </a>` and `<id=id-name>`

![Diagram of Page to Page Navigation Model]

- Additional links other than the basic hierarchical structure.

- Few Loop-back links to the root, in case of large depth.

Extension To Frames: Shows initial and other loading of frame-cells.

![Diagram of Extension To Frames]

- A frame-page $P_1$ is shown with its component cells and the initial page-loading ($P_2$ in $F_{2.1}$, etc).

- The dashed-line shows the frame-cell ($F_{2.1}$) other than the current frame-cell ($F_{2.2}$) where the new page $P_6$ ($\neq$ initial-page, $P_2$) is loaded.

- A duplicate of $P_3$ can appear in $F_{2.1}$ and $F_{2.2}$ – not good.

DOMINATOR

For Program Flowchart and Rooted Directed Graphs:

- Node \( x \) dominates node \( y \): every path from start-node to \( y \) goes through \( x \).
- Transitivity: If \( x \) dominates \( y \) and \( y \) dominates \( z \), then \( x \) dominates \( z \).

Domination relationship can be represented as a tree, when we show only the essential part of the relationship.

- If \( x \) and \( y \) both dominate \( z \), then either \( x \) dominates \( y \) or vice-versa.


```
      0
     / \  
    1   2
   / \ / \
  3   4 5
   \ /   \  
    5    6
```

dominators(5) = \{0, 1, 2\} = nodes on the path from root 0 to node 5 in the domination-tree.

Question:

- If \( F \) is flowchart, then how can we tell from its domination-tree \( D(F) \) which nodes are branch-nodes in \( F \)? Is there a way to determine from \( D(F) \) if a branch-node is a loop-test node in \( F \) – explain your answer.
- How different is the web-graph from its domination-tree?
- Which pages must we navigate through in reaching a particular page?
- Which pages can appear in which frame-cell?
- Can we have the same page appear in two different cells in the same frame?
LINKS, LABELS, AND INDICES

- These are navigation-tools, and they directly relate to the information organization in the web.
- Web-navigation does not have the luxury of body-languages of interpersonal communication; web is still a printed medium.
- Getting a user to an web-page and keeping him there is the challenge: anticipate his interests and guide him/her properly.

They cannot undo a poor information organization and save a bad design.

Pull-down menus:
- Local context.
- Same item in two pull-down menus need not have the same meaning.

Table of Contents:
- Gives top level view.
- Can be multi-level (depth $\leq 2$); fits hierarchical tree structure.

Choice of terms:
- Short (simple) and familiar (’Home’ vs. ’Root’, ’Help’ vs. ’Question?’, ’Contact Us’ vs. ’Reach Us’).
- Follow convention; can be occasionally catchy (but not confusing or challenging).
- Avoid unconventional terms; user’s are not visiting your web-page to think too much.

Consistency breeds familiarity; familiarity breeds contentment.