

CGS 3175: Internet Applications Fall 2009

Advanced XHTML & CSS – Tables

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Designing Interface Components

- In HCI and interface component is what the user utilizes to interact with your webpage. In a sense, an interface component encompasses all the supporting elements for your page's content: links, menus, forms, tables, and so on.
- We'll be examining how these components should be written in XHTML to be valid and accessible, and how to style them with valid CSS in a variety of ways to meet the design needs of your projects.
- We'll start with tables.



Tables In XHTML and CSS

- As we've mentioned before, in the past, tables were a widely abused technique for creating page layouts full of presentation markup. CSS has provided a much cleaner and more adaptable method for accomplishing page layouts, so do not use tables as a technique for designing page layouts.
- However, tables should still be used for their designated purpose – laying out grids of data in rows and columns in the same manner in which it appears in spreadsheets or other applications where tabular data is required.



Tables In XHTML and CSS

- Tables in XHTML work much the same way they do in a spreadsheet or word processor application and resemble a matrix (grid).
- The entire table in XHTML is surrounded by the start table `<table>` tag and the end table tag `</table>`. You choose how many rows and columns you need for your table.
- The main body of a table is made up of rows and columns, like a matrix.
- In XHTML, you construct your tables one row at a time. Each row begins with an opening **table row** `<tr>` tag. Each column within that row contains the open and end tags for the **table data** `<td>` element.



Tables In XHTML and CSS

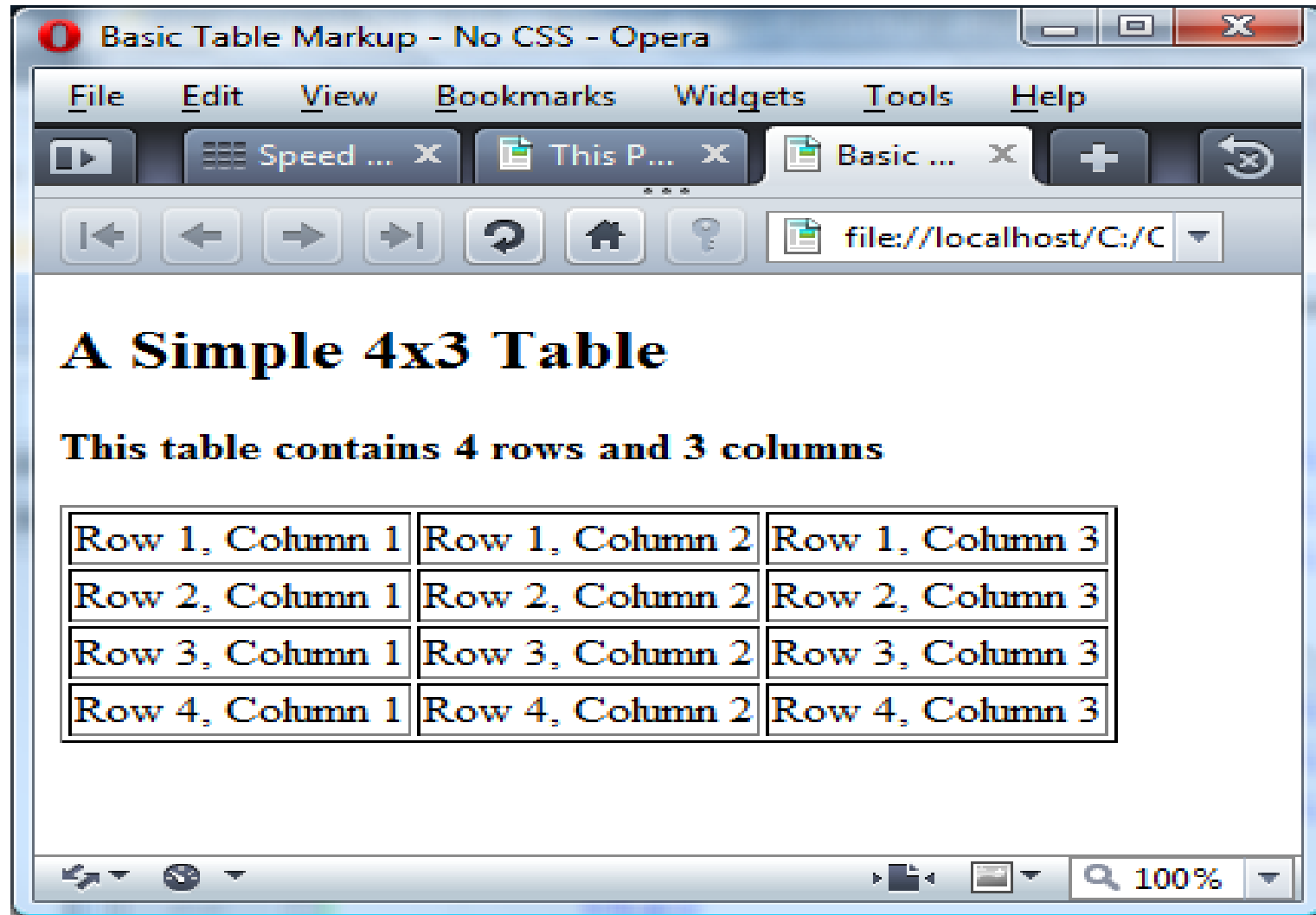
- After the last `<td>` element is closed for the last column, the row ends with the ending `</tr>` tag.
- This is the definition for a row that contains three columns.

```
<tr>  
  <td> column 1 </td>  
  <td> column 2 </td>  
  <td> column 3 </td>  
</tr>
```

- Shown on the next page is the markup for a simple XHTML table.



Tables In XHTML and CSS



*C:\Courses\CGS 3175 - Internet Applications\Fall 2009\example code - new\Advanced XHTML & CSS - Tables\first table example.html - Notepad++

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fig6.1_table_no_css.html first table example.html

```
9      <h2>A Simple 4x3 Table</h2>
10     <h4>This table contains 4 rows and 3 columns</h4>
11     <table border="1">
12         <tr>
13             <td>Row 1, Column 1</td>
14             <td>Row 1, Column 2</td>
15             <td>Row 1, Column 3</td>
16         </tr>
17         <tr>
18             <td>Row 2, Column 1</td>
19             <td>Row 2, Column 2</td>
20             <td>Row 2, Column 3</td>
21         </tr>
22         <tr>
23             <td>Row 3, Column 1</td>
24             <td>Row 3, Column 2</td>
25             <td>Row 3, Column 3</td>
26         </tr>
27         <tr>
28             <td>Row 4, Column 1</td>
29             <td>Row 4, Column 2</td>
30             <td>Row 4, Column 3</td>
31         </tr>
32     </table>
```

The border attribute is used to define the border of all elements inside the table. The "1" means a 1 pixel wide default style border is applied. Without this, there will be no gridlines at all in or around the table. We'll see additional styling with CSS later, but this is a minimal style for a table.

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Formatting Tables

- Labeling table sections with `<thead>`, `<tfoot>`, and `<tbody>`.
- The `<thead>`, `<tfoot>`, and `<tbody>` can be used to define logical sections of a table. These elements are used to group the various rows in a table into a header (`<thead>`), body (`<tbody>`), and footer (`<tfoot>`) section. While not heavily used in practice today these elements will become more important as new user agents become more dependent on document structure, so you want to be sure to use them when necessary. For example, talking screen readers.
- These elements are optional, but when used must appear in the following order: `<thead>`, `<tfoot>`, `<tbody>`. The `<tfoot>` element must appear after the ending tag for the `</thead>` and before the open tag for the `<tbody>` element, even though its content will be displayed at the bottom of the table in a browser.



Formatting Tables

- The various table elements have a number of attributes that can be used to customize the look and layout of tables, rows, and cells.
- As with other elements, XHTML Strict does not allow all of the formatting attributes that Transitional and Frameset allow.
- The next few pages illustrate the most common attributes that can be used with the `<table>`, `<th>`, `<tr>` and `<td>` elements.



<table> Element Attributes

<u>Name</u>	<u>Description and Values</u>
summary	Text description of the table. Useful for non-visual browsers.
width	Sets the width of the table. Values: Percentage or pixels
border	Sets the width of the border around the table. Values: A value of 0 makes the border invisible. An integer value greater than 0 will result in a border of that number of pixels.
cellpadding	Sets the amount of space between the border of the table cell and the data contained in the cell. Values: Percentage or pixels
cellspacing	Sets the amount of space between cells. Values: Percentage or pixels
frame	Defines which sides of the table will be displayed. Values: above, below, border, box, lhs, bsides, rhs, vsides, void
rules	Defines which rule lines will be displayed. Values: all, cols, groups, none, rows



<td> And <th> Element Attributes

<u>Name</u>	<u>Description and Values</u>
align	Horizontal alignment of data in a cell Values: left, center, right, justified
valign	Vertical alignment of data in a cell Values: top, middle, bottom
rowspan	Number of rows a cell spans Values: integer greater than 1 and less than or equal to the total number of rows in the table
colspan	Number of columns a cell spans Values: integer greater than 1 and less than or equal to the total number of columns in the table
abbr	Used for an abbreviated version of the content of the cell
axis	Used to assign a cell to a category group
headers	List of cells that provide header information for the current cell based on the values of the id attributes of the header cells. This list is space delimited.
scope	Provides information about which cells the current header cell provides header information for Values: col, colspan, row, rowspan



<tr> Element Attributes

<u>Name</u>	<u>Description and Values</u>
align	Horizontal alignment of data in all cells in a row Values: left, center, right, justified
valign	Vertical alignment of data in all cells in a row Values: top, middle, bottom



XHTML Table – Examples

- For our second table example, we'll have content that spans multiple rows and columns.
- As with any skill, the best way to master the skill is to practice, practice, practice, so I encourage you to try and develop some additional tables on your own. I've put a couple of practice problems at the end of this set of notes for you to try.



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fig6.1_table_no_css.html number theory.html second table example.html

```
1 <?xml version="1.0" encoding="UTF-8" standalone="no" ?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4 <html xmlns="http://www.w3.org/1999/xhtml">
5 <head>
6   <title>Content Spanning Multiple Table Rows and Columns with XHTML Tables</title>
7   <style type="text/css">
8     <!--
9       #teal_bg { background-color: #99FFFF;
10     }
11     .yellow_bg { background-color: #FFFF00;
12     }
13     .blue_bg {background-color: blue;
14               color:white;
15     }
16     #red_bg {background-color:#F73;
17     }
18     caption { font-weight: bold;
19               font-size: 14pt;
20               text-align: center;
21               color: #000099;
22     }
23     -->
24 </style>
```

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fig6.1_table_no_css.html number theory.html second table example.html

```
26 <body>
27   <!-- Begin Table -->
28   <table border="1" cellpadding="5px" id="teal_bg">
29     <caption>Saltwater Aquarium Invoice</caption>
30     <thead>
31       <!-- Begin Header Row -->
32       <tr class="blue_bg">
33         <th rowspan="2">Item</th>
34         <th colspan="2">Purchase Details</th>
35         <th rowspan="2">Total Price</th>
36       </tr>
37       <tr class="blue_bg">
38         <th>Price</th>
39         <th>Quantity</th>
40       </tr>
41     </thead>
42     <tfoot>
43       <tr align="center" id="red_bg">
44         <td colspan="4"><small>Thank you for shopping with us.</small></td>
45       </tr>
46     <!-- End First Row -->
47   </tfoot>
48   <tbody>
```

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fig6.1_table_no_css.html number theory.html second table example.html

```
48 <tbody>
49 <!-- Begin First Item -->
50 <tr>
51 <th>Blue Angel Fish</th>
52 <td align="center">$19.95</td>
53 <td align="center">2</td>
54 <td align="center">$39.90</td>
55 </tr>
56 <!-- End First Item -->
57 <!-- Begin Second Item -->
58 <tr>
59 <th>Sailfin Tang Fish</th>
60 <td align="center">$34.95</td>
61 <td align="center">1</td>
62 <td align="center">$34.95</td>
63 </tr>
64 <!-- End Second Item -->
65 <!-- Begin Third Item -->
66 <tr>
67 <th>Clown Fish</th>
68 <td align="center">$3.95</td>
69 <td align="center">4</td>
70 <td align="center">$15.80</td>
```

Hyper Text Markup Language file nb char : 2228 nb line : 82 Ln : 13 Col : 39 Sel : 0 Dos\Windows ANSI INS




```
71     </tr>
72     <!-- End Third Item -->
73     <!-- Begin Invoice Total -->
74     <tr class="yellow_bg">
75         <td colspan="3" align="right"><b>TOTAL</b></td>
76         <td align="center"><b>$89.75</b></td>
77     </tr>
78     <!-- End Invoice Total -->
79 </tbody>
80 </table>
81 </body>
82 </html>
```



Content Spanning Multiple Table Rows and Columns with XHTML Tables - ...

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Saltwater Aquarium Invoice

Item	Purchase Details		Total Price
	Price	Quantity	
Blue Angel Fish	\$19.95	2	\$39.90
Sailfin Tang Fish	\$34.95	1	\$34.95
Clown Fish	\$3.95	4	\$15.80
TOTAL			\$89.75
Thank you for shopping with us.			

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XHTML Table – Examples

- The third table example illustrates a nested table (a table within a table).



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number theory.html second table example.html third table example.html

```
22 <table border="1" cellpadding="5" id="outer">
23   <caption><strong>Phone Book</strong></caption>
24   <!-- Begin Header Row -->
25   <tr id="headings">
26     <th>Name</th>
27     <th>Address</th>
28     <th>Phone Number</th>
29   </tr>
30   <!-- End Header Row -->
31   <!-- Begin First Row -->
32   <tr>
33     <td>Eva Mendes</td>
34     <td>
35       <!-- Begin Inner Table -->
36       <table border="1" class="inner">
37         <tr>
38           <td colspan="3">123 West Liberty Dr.</td>
39         </tr>
40         <tr>
41           <td>Miami</td>
42           <td>FL</td>
43           <td>32769</td>
44         </tr>
45       </table>
46     <!-- End Inner Table -->
47   </td>
```

Inner table starts here

Inner table ends here

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Nexting Tables Within Tables - Opera

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Phone Book

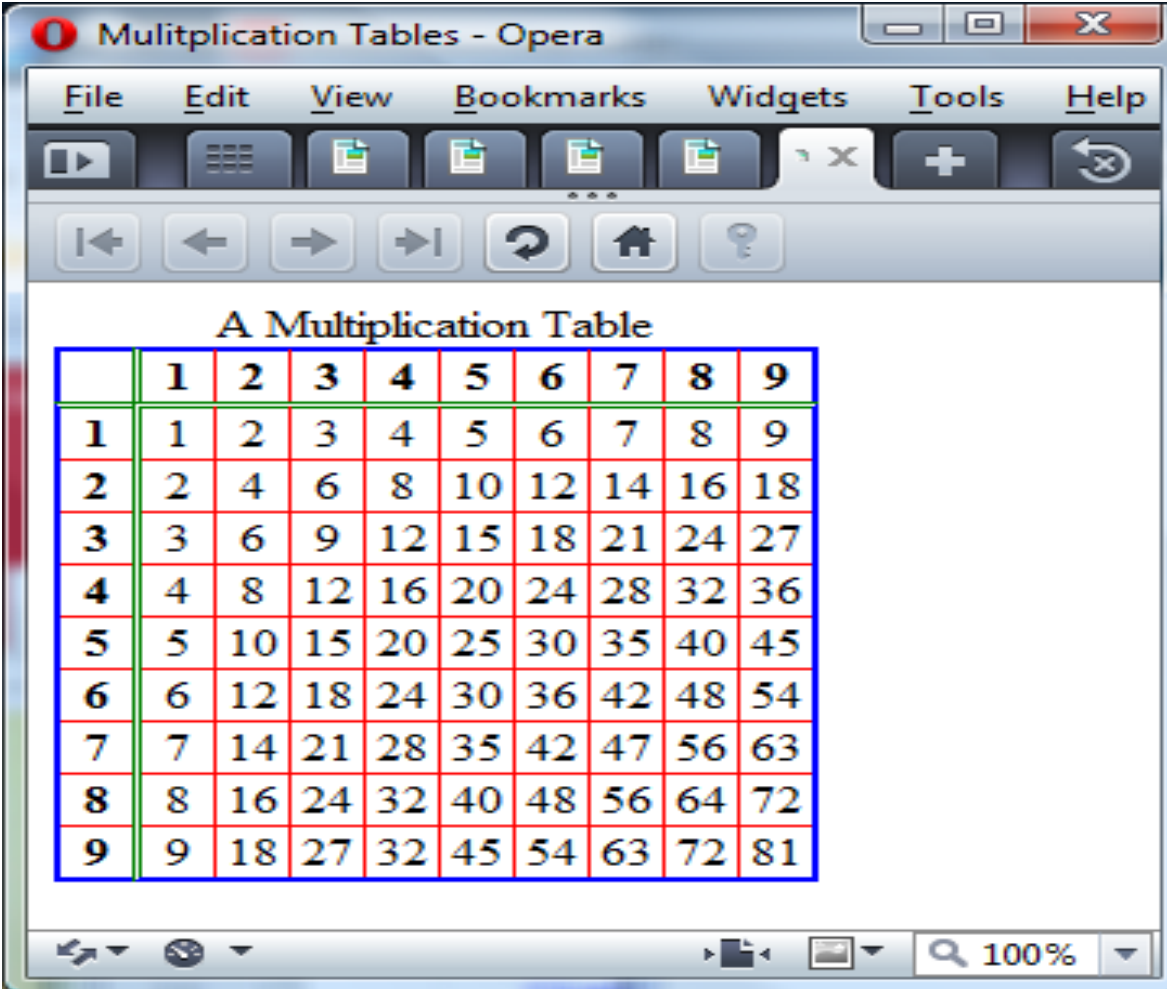
Name	Address	Phone Number		
Eva Mendes	<table> <tr> <td>123 West Liberty Dr.</td></tr> <tr> <td>Miami FL 32769</td></tr> </table>	123 West Liberty Dr.	Miami FL 32769	(321) 555-1212
123 West Liberty Dr.				
Miami FL 32769				
Carrie Underwood	<table> <tr> <td>456 Lighthouse Way</td></tr> <tr> <td>Nashville TN 02901</td></tr> </table>	456 Lighthouse Way	Nashville TN 02901	(415) 555-1212
456 Lighthouse Way				
Nashville TN 02901				
Adriana Lima	<table> <tr> <td>789 Ruta di Pastrano</td></tr> <tr> <td>Sao Paulo Brazil 346 BR</td></tr> </table>	789 Ruta di Pastrano	Sao Paulo Brazil 346 BR	(389) 411-4111
789 Ruta di Pastrano				
Sao Paulo Brazil 346 BR				

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Practice Problems

1. Create a table that looks like the following:



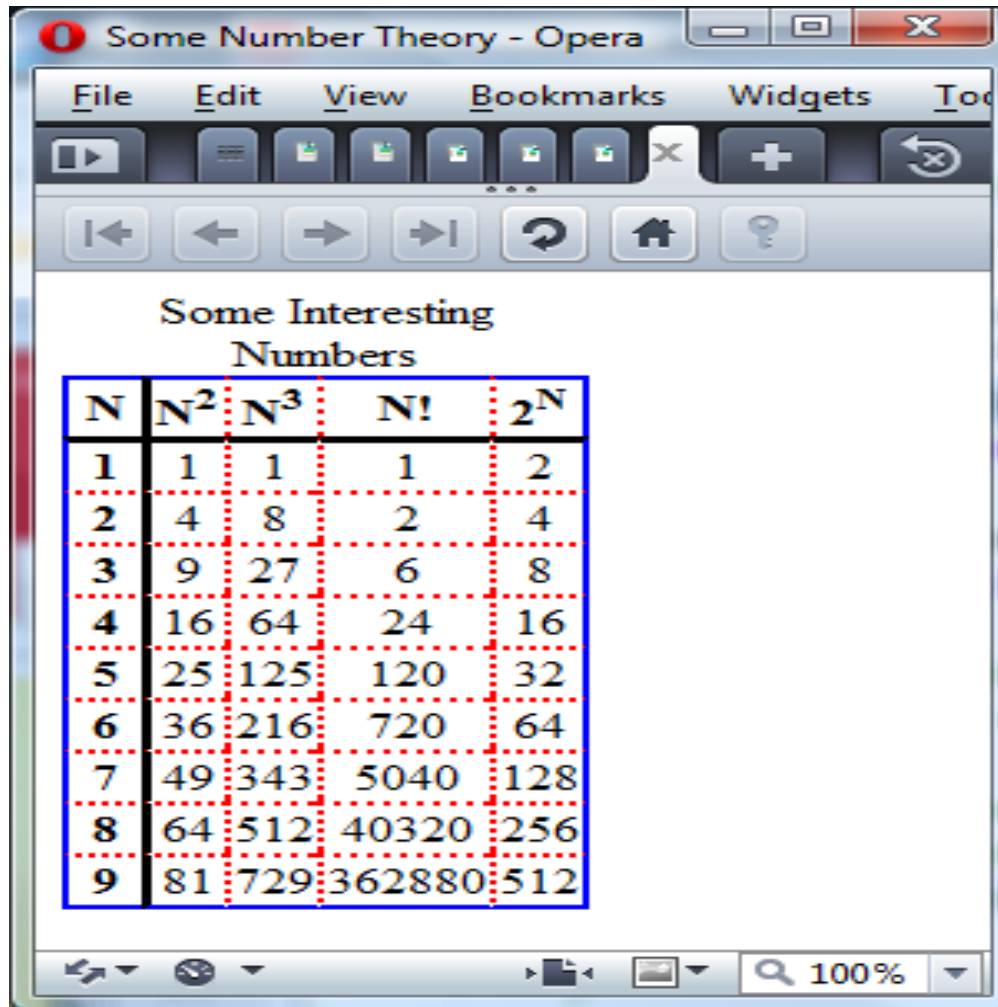
The screenshot shows a web browser window with the title "Multiplication Tables - Opera". The browser's menu bar includes File, Edit, View, Bookmarks, Widgets, Tools, and Help. Below the menu bar is a toolbar with various icons for navigation and editing. The main content area displays a table titled "A Multiplication Table". The table is a 9x9 grid with a blue border. The first row and first column are highlighted in green, and the rest of the cells are highlighted in red. The table contains the following data:

	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	47	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81



Practice Problems

2. Create a table that looks like the following:



The screenshot shows a web browser window with the title "Some Number Theory - Opera". The browser's address bar and menu bar are visible. The main content area displays the title "Some Interesting Numbers" above a table. The table has five columns: N, N², N³, N!, and 2^N. The rows contain values for N from 1 to 9. The table is styled with a blue border and red dashed grid lines.

N	N ²	N ³	N!	2 ^N
1	1	1	1	2
2	4	8	2	4
3	9	27	6	8
4	16	64	24	16
5	25	125	120	32
6	36	216	720	64
7	49	343	5040	128
8	64	512	40320	256
9	81	729	362880	512

