WEB APPLICATIONS

Lecture 1 – Tables

INTRODUCTION

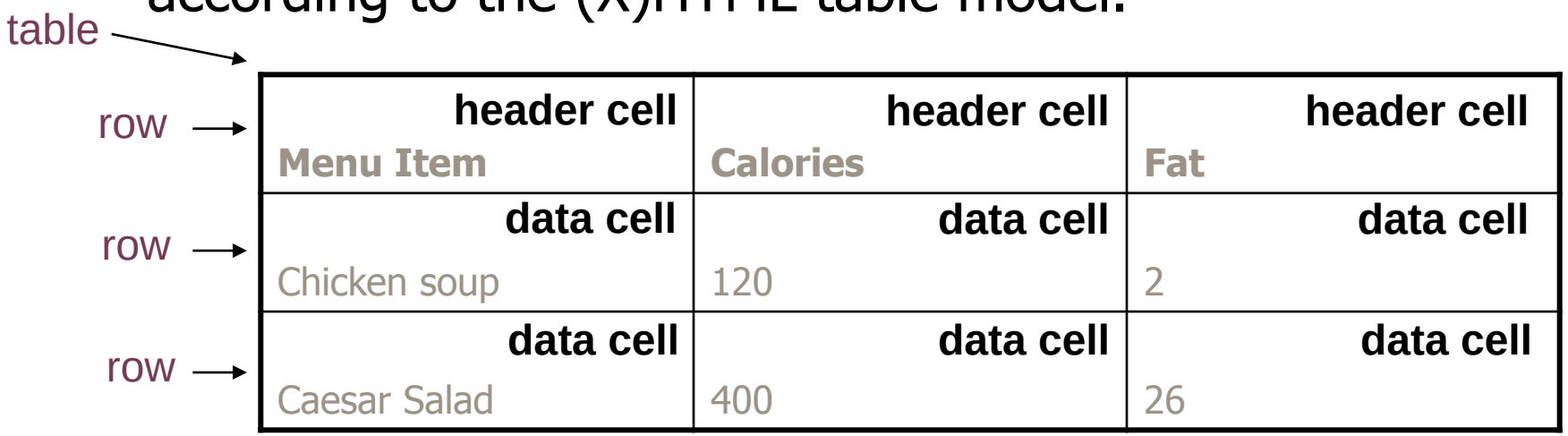
- **HTML tables were created for situations when you need to add *tabular material* to a web page.**
- **Tabular material means data arranged into rows and columns.**
- **For example:**
  - Calendars
  - Schedules
  - Statistics
  - Menus
- **“Data” does not necessarily have to be numbers.**

MINIMAL TABLE STRUCTURE

- **Let's take a look at a simple table**

Menu Item	Calories	Fat
Chicken soup	120	2
Caesar Salad	400	26

- The diagram below shows the structure of this table according to the (X)HTML table model.



MINIMAL TABLE STRUCTURE

- **So a *table* consists of a number of *rows*, each of which consist of a number of *cells*. These cells can be either *header cells* or *data cells*.**
- **The elements we need to construct the HTML for a table are:**

  - `<table>` - table
  - `<tr>` - table row
  - `<th>` - header cell
  - `<td>` - data cell

MINIMAL TABLE STRUCTURE

- **Here is how the tags would be applied in the previous case:**

```
<table>
<tr> <th>Menu Item</th> <th>Calories</th> <th>Fat</th> </tr>
<tr> <td>Chicken soup</td> <td>120</td> <td>2</td> </tr>
<tr> <td>Caesar Salad</td> <td>400</td> <td>26</td> </tr>
```

- On the next slide you can see the actual HTML laid out as it would appear in the source document.

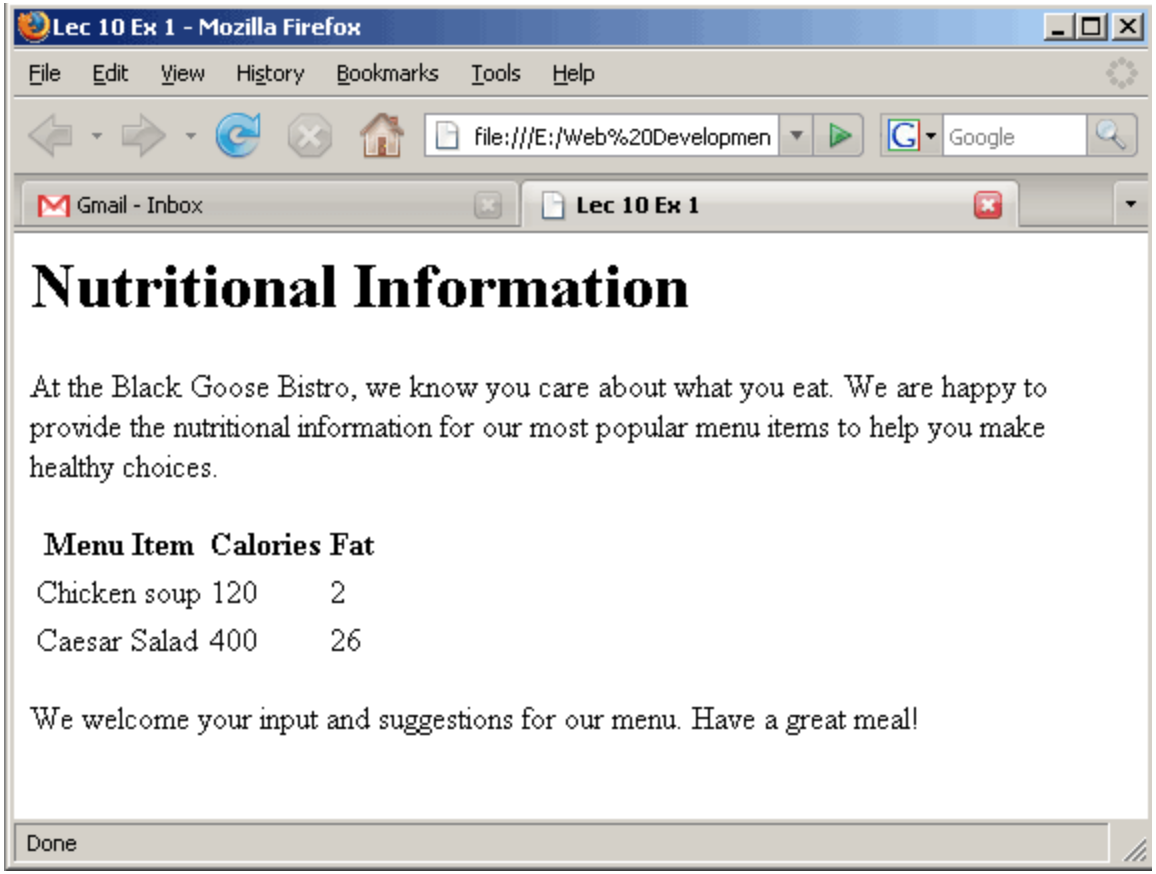
MINIMAL TABLE STRUCTURE

```
<table>
   <tr>
        <th>Menu Item</th>
        <th>Calories</th>
        <th>Fat</th>
   </tr>
   <tr>
        <td>Chicken soup</td>
        <td>120</td>
        <td>2</td>
   </tr>
   <tr>
        <td>Caesar Salad</td>
        <td>400</td>
        <td>26</td>
   </tr>
<table>
```

- Note that the **number of rows is explicitly** specified.
- The number of columns is not.
- This is worked out from how may cells there are in each row.
- This means that there have to be the same number of cells in every row.

MINIMAL TABLE STRUCTURE

- This is how it would look in a browser embedded in a simple web page.



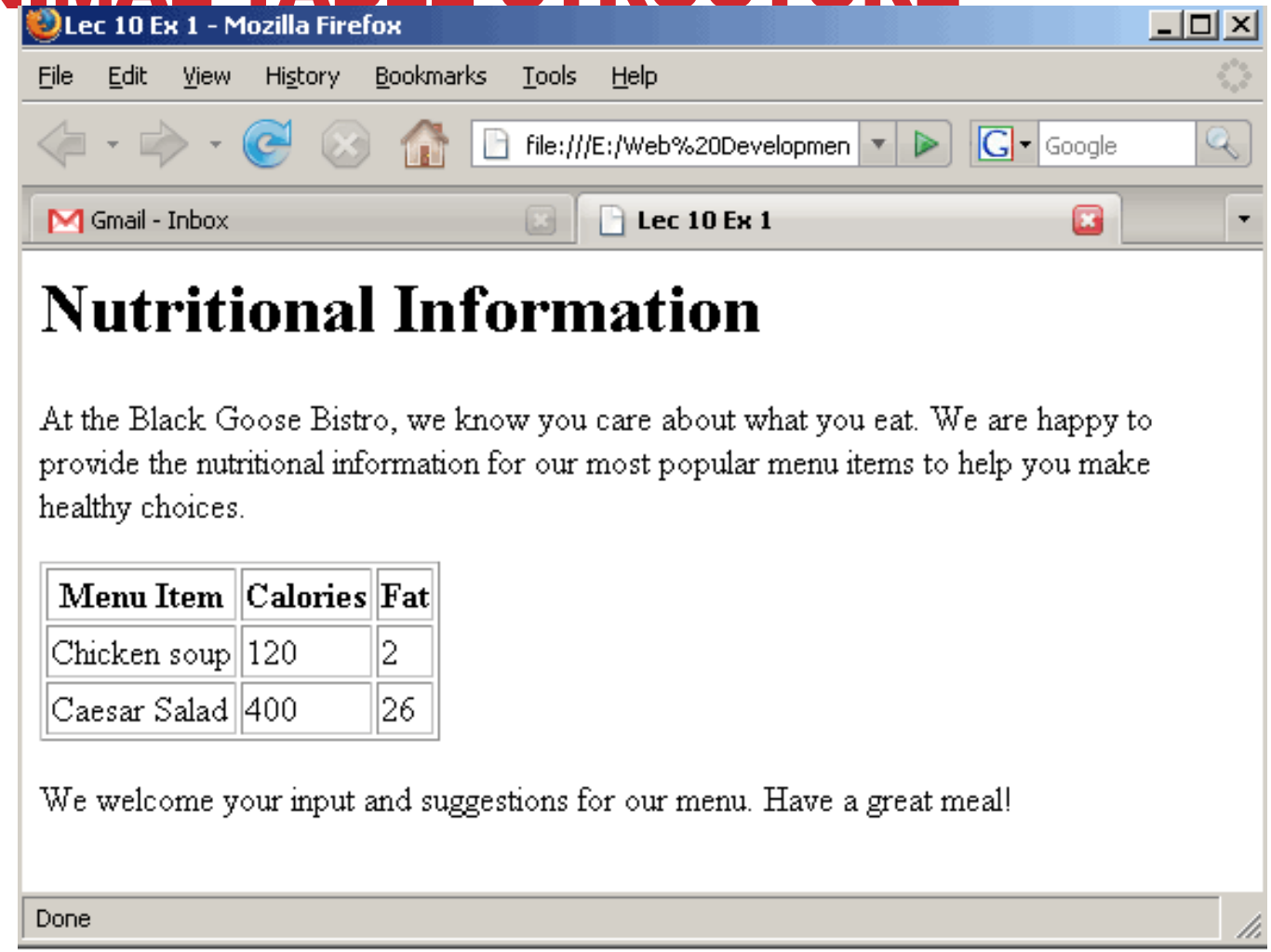
MINIMAL TABLE STRUCTURE

- **If you want to see the structure of the table more clearly you can use the border attribute in order to add a visible border around the cells.**

```
e.g. <table border="1">
```

- **This however, is a deprecated attribute so you should only use it for testing your tables.**
- **Don't leave it there in the final markup …**

MINIMAL TABLE STRUCTURE



MINIMAL TABLE STRUCTURE

- So start and end table tags are used to identify the beginning and end of the table.
- The table element can only directly contain some number of tr (row) elements.
- The only thing that can go in the tr element is some number of td or th elements.
- In other words, there can be no text content within the table or tr elements that isn't contained within a td or a th.

TABLE HEADERS

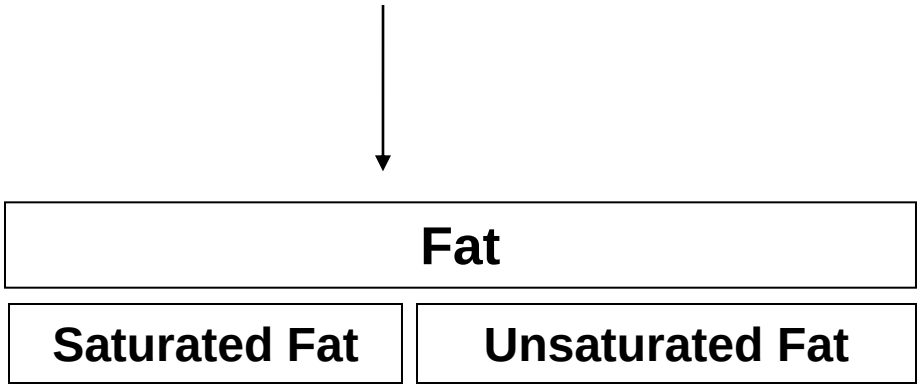
- As you can see from the previous example the text marked up as headers (th elements) are displayed differently from the text in the td elements.
- Table headers usually provide important information or context about the contents of the table.
- Also, alternate browsing devices such as speech browsers, may treat table headers differently to data cells.
- (e.g. by reading the header aloud before each data cell)
- So it is important to use the th element for accessibility reasons.

SPANNING CELLS

- Spanning cells means stretching a cell to cover several rows or columns.
- It allows you to create complex table structures but makes the markup a little more difficult to keep track of.
- Columns spans are created using the colspan attribute in the td or th element..
- A colspan will stretch a cell to the right to cover several columns.
- Example on the next slide.

SPANNING CELLS

```
<table>
    <tr>
        <th colspan="2">Fat</th>
    </tr>
    <tr>
        <td>Saturated Fat</td>
        <td>Unsaturated Fat</td>
    </tr>
<table>
```



- Note there is now one cell in the first row and two cells in the second.
- This is because, since a **colspan** of 2, has been applied to the cell in the first row, it counts for 2.

SPANNING CELLS

- **Row spans are created using the rowspan attribute.**
- **They cause the cell to span downward over several rows.**

```
<table>
   <tr>
        <th rowspan=“3”>Serving Size</th>
        <td>Small (8oz.)</td>
   </tr>
   <tr>
        <td>Medium (16oz.)</td>
   </tr>
   <tr>
        <td>Large (24oz.)</td>
   </tr>
</table>
```

SPANNING CELLS

- **This will look something like this:**

<table>
<tr><td rowspan="3">Serving Size</td><td>Small (8oz.)</td></tr>
<tr><td>Medium (16oz.)</td></tr>
<tr><td>Large (24oz.)</td></tr>
</table>

- Note again that the numbers of cells in each row match.
- Since the first cell in the first row spans over the next two rows as well, we only need one cell in rows 2 and 3.

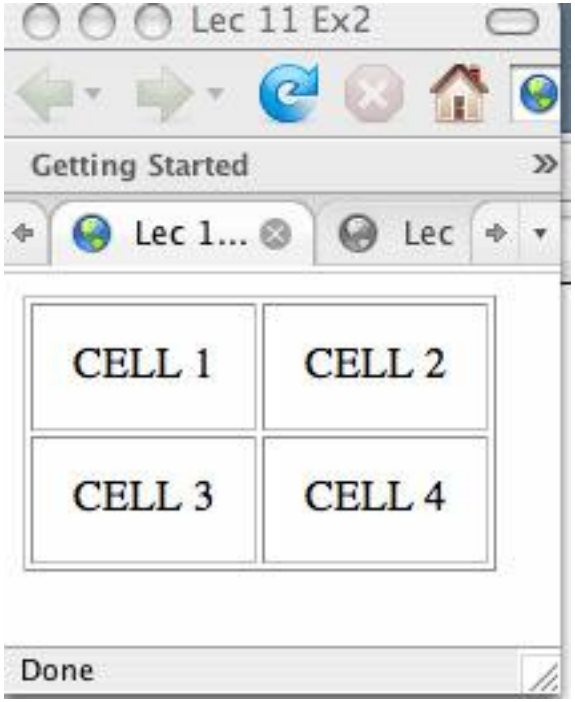
CELL PADDING AND SPACING

- **By default, cells are sized just large enough to fit their contents.**
- **Often, you will want to add a little breathing room around the cell data.**
- **There are two kinds of space that can be added**
  - **cellpadding** - space within cells
  - **cellspacing** - space between cells
- **In both cases the spacing is applied to the table element, not to the tr or the td elements.**

CELL PADDING AND SPACING

- So for example:

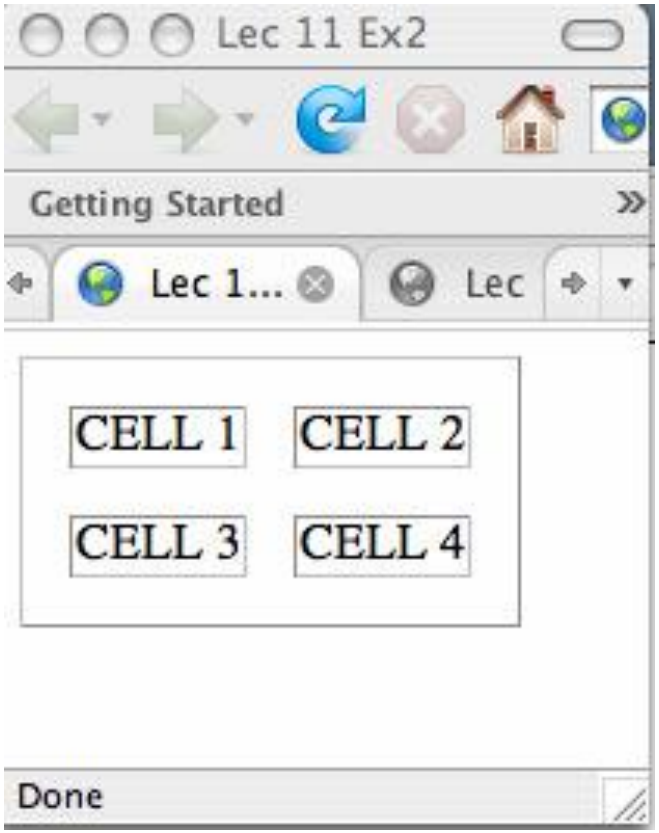
```
<table cellpadding="15">
    <tr>
        <td>CELL 1</td>
        <td>CELL 2</td>
    </tr>
    <tr>
        <td>CELL 3</td>
        <td>CELL 4</td>
    </tr>
</table>
```



CELL PADDING AND SPACING

- Another example:

```
<table cellspacing="15">
    <tr>
        <td>CELL 1</td>
        <td>CELL 2</td>
    </tr>
    <tr>
        <td>CELL 3</td>
        <td>CELL 4</td>
    </tr>
</table>
```



CAPTIONS AND SUMMARIES

- There are two methods for providing additional information about a table: *captions* and *summaries*.
- A *caption* is displayed with the table in visual browsers.
- The *summary* is not displayed but may be used by assistive devices.
- The caption element is used to give a table a title or a brief description.
- It must be the first thing in the table element.
- See example on the next slide.

CAPTIONS AND SUMMARIES

```
<table>
   <caption>Nutritional Information</caption>
   <tr>
        <th>Menu Item</th>
        <th>Calories</th>
        <th>Fat</th>
   </tr>
   <tr>
        <td>Chicken soup</td>
        <td>120</td>
        <td>2</td>
   </tr>
   <tr>
        <td>Caesar Salad</td>
        <td>400</td>
        <td>26</td>
   </tr>
<table>
```

CAPTIONS AND SUMMARIES

- **The summary can be used to provide a more lengthy description of the table and its contents.**
- **It is applied by adding the summary attribute to the table element.**

```
<table summary="A listing of the calorie and fat
   content for each of the most popular menu items">
  <caption>Nutritional Information</caption>
   … rest of table
</table>
```

STYLE PROPERTIES FOR TABLES

- **In order to get a table to look good you can apply all sorts of CSS styles to it.**
- **We have covered most of these already.**
- **For example, all of the style rules available within CSS for *styling text* (e.g. changing font colours, font styles, font appearance, underlines etc) can all be applied to the text within tables also.**
- **You can apply these to the table tag e.g.**

```
table {font-family: sans-serif; font-size etc}
```

- **You can apply id or class attributes to tables also.**

STYLE PROPERTIES FOR TABLES

- Foreground and background colours, including background images, can also be applied to tables.
- Properties such as color, background-color and background-image all work fine.
- In addition to this you can apply padding, borders and margins to both the table itself and, to some extent, individual cells.