ENSF 381
Full Stack Web Development

Lecture 07:
Tables

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What is HTML table?

- HTML table is a structured set of data organized in rows and columns.

- It is created using the <table> element in HTML.

- Tables allow us to:
  - Organize and display data in a structured format.
  - Structure the layout of the webpage.

What is HTML table?

Table structure

- Table (<table>): the container element for the entire table.

- Table row (<tr>): defines a row in the table.

- Table header (<th>): defines header cells in a table. Header cells are typically placed in the first row or first column of the table and contain labels or headings.

- Table data (<td>): defines data cells in a table. These cells **contain the actual data of the table**.

Table - example

```
<!DOCTYPE html>
<html>
<head>
<title>Tables</title>
</head>
<body>
<table>
  <tr>
    <th>Assignments</th>
    <th>Grade</th>
  </tr>
  <tr>
    <td>Assignment 1</td>
    <td>8</td>
  </tr>
  <tr>
    <td>Assignment 2</td>
    <td>10</td>
  </tr>
</table>
</body></html>
```

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Table - example

Assignments Grade

Assignment 1 8

Assignment 2 10

Adding borders to the table - example

```html
<body>

<table border="1px">
  <tr>
    <th>Assignments</th>
    <th>Grade</th>
  </tr>
  <tr>
    <td>Assignment 1</td>
    <td>8</td>
  </tr>
  <tr>
    <td>Assignment 2</td>
    <td>10</td>
  </tr>
</table>

</body>
```
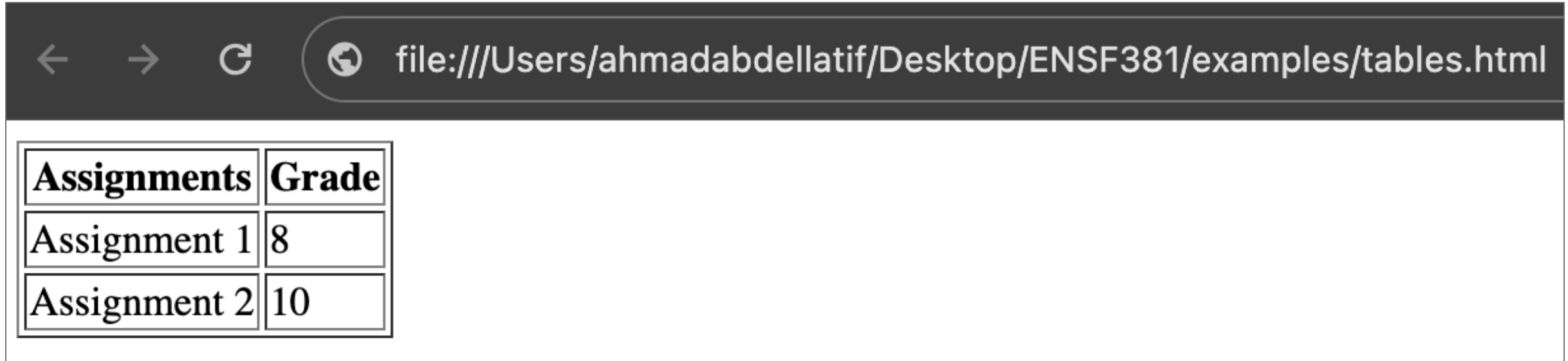
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Adding borders to the table - example

Assignments	Grade
Assignment 1	8
Assignment 2	10

```
<table border="1px">
    <tr>
        <th>Assignments</th>
        <th>Grade</th>
    </tr>
    <tr>
        <td>Assignment 1</td>
        <td>8</td>
    </tr>
    <tr>
        <td>Assignment 2</td>
        <td>10</td>
    </tr>
    <tr>
        <td>Assignment 3</td>
        <td>9</td>
    </tr>
</table>
```

Adding a new row

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Adding another row - example

```
<table border="1px">
  <tr>
    <th>Assignments</th>
    <th>Grade</th>
    <th>Weight</th>  ←
    </tr>
  <tr>
    <td>Assignment 1</td>
    <td>8</td>
    <td> 20% </td>  ←
  </tr>
  <tr>
    <td>Assignment 2</td>
    <td>10</td>
    <td> 40% </td>  ←
  </tr>
  <tr>
    <td>Assignment 3</td>
    <td>9</td>
    <td> 40% </td>  ←
  </tr> </table>
```

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Adding another column - example

What is the output?

```
<table border="1px">
  <tr>
    <th>Assignments</th>
    <th>Grade</th>
    <th>Weight</th>
    </tr>
  <tr>
    <td>Assignment 1</td>
    <td>8</td>
    <td> 20% </td>
  </tr>
  <tr>
    <td>Assignment 2</td>
    <td>10</td>
    <td> 40% </td>    ⬅
  </tr>
  <tr>
    <td>Assignment 3</td>
    <td>9</td>
    <td> 40% </td>
  </tr> </table>
```

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What is the output?

Assignments	Grade	Weight
Assignment 1	8	20%
Assignment 2	10	
Assignment 3	9	40%

Table styling attributes

- Table Border (`border`): add double borders to the table.

- Single border (`border-collapse`): add a single border to the table.

- Background color (`bgcolor`): change the background color of the table or cell.

- Size (`width or height`): specify the size of a table, row or column.

Table styling - example

```
<body>
<table style="width:50%; height:30%;" border="1px">
  <tr>
    <th>Assignments</th>
    <th>Grade</th>
    <th>Weight</th>
  </tr>
  <tr>
    <td>Assignment 1</td>
    <td style="width:300px; height:200px;">8</td>
    <td> 20% </td>
  </tr>
  <tr>
    <td>Assignment 2</td>
    <td>10</td>
    <td bgcolor="green"> 40% </td>
  </tr>
</table></body>
```

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Table styling - example

Assignments	Grade	Weight
Assignment 1	8	20%
Assignment 2	10	40%

Merging cells

- Combining two or more adjacent table cells into a single, larger cell.

- This can be done either horizontally (using the `colspan` attribute) or vertically (using the `rowspan` attribute).

- Useful technique when you want to **create a more complex layout** or represent data in a way that requires **spanning across multiple rows or columns**.

Merging cells - example

```
<table border="1">
  <tr>
    <td>Cell 1</td>
    <td colspan="2" bgcolor="red">Merged Cells</td>
  </tr>
  <tr>
    <td rowspan="2" bgcolor="orange">Merged Cells</td>
    <td>Data 1,2</td>
    <td>Data 1,3</td>
  </tr>
  <tr>
    <td>Data 2,2</td>
    <td>Data 2,3</td>
  </tr>
</table>
```

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Merging cells - example

Adding a picture to a table - example

```
<table border="1">
  <tr>
    <td>Cell 1</td>
    <td colspan="2">
<img src="https://ucalgary.ca/themes/ucalgary/ucws_theme/images/UCalgary.svg"
width="80%" height="50%">
    </td>
  </tr>
  <tr>
    <td rowspan="2">Merged Cells</td>
    <td>Data 1,2</td>
    <td>Data 1,3</td>
  </tr>
  <tr>
    <td>Data 2,2</td>
    <td>Data 2,3</td>
  </tr>
</table>
```

Adding a picture to a table - example

Cell 1	University of Calgary logo	
Merged Cells	Data 1,2	Data 1,3
	Data 2,2	Data 2,3

Questions

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Assignment 1

- The assignment is available on D2L.

- Teams are limited to a maximum of two students.

- Deadline: Feb 7th, 2025 at 11:59 PM