📘 HTML Tables — Complete Beginner-Friendly Guide

This document explains **everything about HTML tables**: definition, structure, tags, attributes, examples, and real-time use cases. It is written in a clean learning format for students.

📝 What Are HTML Tables?

HTML **tables** allow you to display information in **rows and columns**. Tables are useful when presenting structured data that must be easily readable.

🔧 Real-time uses

- Student marksheet
- Employee records
- Product catalog
- Timetables
- Comparison charts

💣 Basic Table Structure

A table consists of rows and columns.

Tag	Meaning
`<table>`	Defines the table
`<tr>`	Table row
`<th>`	Header cell (bold and centered by default)
`<td>`	Data cell

🔧 Basic Example

```
<table border="1">
  <tr>
    <th>ID</th>
    <th>Name</th>
    <th>Course</th>
  </tr>

  <tr>
    <td>1</td>
```

```
    <td>Rahul</td>
    <td>HTML</td>
  </tr>

  <tr>
    <td>2</td>
    <td>Anita</td>
    <td>CSS</td>
  </tr>
</table>
```

🧰Table Sections

HTML tables can be divided into logical sections.

Tag	Meaning
`<thead>`	Defines header section
`<tbody>`	Defines body/content section
`<tfoot>`	Footer section (totals, summary)

🔧Example With Table Sections

```
<table border="1">
  <thead>
    <tr>
      <th>Product</th>
      <th>Price</th>
      <th>Quantity</th>
    </tr>
  </thead>

  <tbody>
    <tr>
      <td>Laptop</td>
      <td>55000</td>
      <td>2</td>
    </tr>
    <tr>
      <td>Mouse</td>
      <td>500</td>
      <td>3</td>
    </tr>
  </tbody>

  <tfoot>
```

```
    <tr>
      <td colspan="3">End of List</td>
    </tr>
  </tfoot>
</table>
```

🔧 Table Attributes

Attribute	Description	Example
`border`	Adds borders around cells	`<table border="1">`
`width`	Sets width of table	`<table width="500">`
`height`	Sets height of rows/cells	`<td height="50">`
`cellpadding`	Space inside cell	`<table cellpadding="10">`
`cellspacing`	Space between cells	`<table cellspacing="5">`
`align`	Align table (HTML4 legacy)	`<table align="center">`

Note: Modern HTML uses CSS instead of these layout attributes.

🧱 Cell Merging: `colspan` and `rowspan`

Cells can be merged horizontally or vertically.

🔧 `colspan` — Merge Columns

```
<td colspan="2">Merged Cell</td>
```

🔧 `rowspan` — Merge Rows

```
<td rowspan="2">Merged Rows</td>
```

📌 Example Combining Both

```
<table border="1">
  <tr>
    <th rowspan="2">ID</th>
    <th colspan="2">Student Info</th>
  </tr>

  <tr>
```

```
    <th>Name</th>
    <th>Course</th>
  </tr>

  <tr>
    <td>1</td>
    <td>Meera</td>
    <td>JavaScript</td>
  </tr>

  <tr>
    <td>2</td>
    <td>David</td>
    <td>HTML</td>
  </tr>
</table>
```

📚Table Example With Real-Life Data

```
<table border="1">
  <tr>
    <th>Employee</th>
    <th>Department</th>
    <th>Salary</th>
  </tr>

  <tr>
    <td>John</td>
    <td>IT</td>
    <td>45000</td>
  </tr>

  <tr>
    <td>Sana</td>
    <td>HR</td>
    <td>40000</td>
  </tr>
</table>
```

📘Real-Time Table Examples (Use Cases With Code)

Below are complete HTML table examples for real-world scenarios.

✂️Student Marksheet

```
<table border="1">
  <tr>
    <th>Student Name</th>
    <th>Subject</th>
    <th>Marks</th>
  </tr>
  <tr>
    <td>Rahul</td>
    <td>Math</td>
    <td>88</td>
  </tr>
  <tr>
    <td>Meera</td>
    <td>Science</td>
    <td>92</td>
  </tr>
  <tr>
    <td>John</td>
    <td>English</td>
    <td>81</td>
  </tr>
</table>
```

✒️Employee Records

```
<table border="1">
  <tr>
    <th>ID</th>
    <th>Name</th>
    <th>Department</th>
    <th>Salary</th>
  </tr>
  <tr>
    <td>101</td>
    <td>Amit</td>
    <td>IT</td>
    <td>50000</td>
  </tr>
  <tr>
    <td>102</td>
    <td>Sana</td>
    <td>HR</td>
    <td>42000</td>
  </tr>
  <tr>
```

```
    <td>103</td>
    <td>Karan</td>
    <td>Sales</td>
    <td>38000</td>
  </tr>
</table>
```

🛏️Product Catalog

```
<table border="1">
  <tr>
    <th>Product</th>
    <th>Category</th>
    <th>Price</th>
  </tr>
  <tr>
    <td>Laptop</td>
    <td>Electronics</td>
    <td>55000</td>
  </tr>
  <tr>
    <td>Chair</td>
    <td>Furniture</td>
    <td>2500</td>
  </tr>
  <tr>
    <td>Watch</td>
    <td>Accessories</td>
    <td>1500</td>
  </tr>
</table>
```

🌂Timetable (Weekly Schedule)

```
<table border="1">
  <tr>
    <th>Day</th>
    <th>9 AM - 11 AM</th>
    <th>11 AM - 1 PM</th>
    <th>2 PM - 4 PM</th>
  </tr>
  <tr>
    <td>Monday</td>
    <td>Math</td>
    <td>English</td>
```

```
    <td>Science</td>
  </tr>
  <tr>
    <td>Tuesday</td>
    <td>Computer</td>
    <td>Math</td>
    <td>Sports</td>
  </tr>
  <tr>
    <td>Wednesday</td>
    <td>Science</td>
    <td>English</td>
    <td>History</td>
  </tr>
</table>
```

🌡️ Comparison Chart

```
<table border="1">
  <tr>
    <th>Feature</th>
    <th>Product A</th>
    <th>Product B</th>
  </tr>
  <tr>
    <td>Price</td>
    <td>₹10,000</td>
    <td>₹12,000</td>
  </tr>
  <tr>
    <td>RAM</td>
    <td>8 GB</td>
    <td>16 GB</td>
  </tr>
  <tr>
    <td>Storage</td>
    <td>256 GB</td>
    <td>512 GB</td>
  </tr>
</table>
```

🕐When Should You Use Tables?

Use tables when: - Data is tabular (rows & columns) - Values need comparison - Structure matters more than layout

Avoid tables for layout — use **div + CSS** instead.

🕯️ Interview Questions (Tables)

- What is the difference between `<th>` and `<td>`?
- What are `colspan` and `rowspan`?
- Why do we use `<thead>`, `<tbody>`, and `<tfoot>`?
- Should tables be used for layout?
