# LaTeX Workshop: Tables

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## Introduction to Tables

In LaTeX, tables can vary from simple structures to complex ones that suit a variety of use cases, including professional reports and academic papers. Let's explore several types.

### 1. Simple Tables with Borders

**Code:**

```
\begin{tabular}{|c|c|c|}
    \hline
    Name & Age & Score \\
    \hline
    Alice & 21 & 85 \\
    Bob & 22 & 90 \\
    Charlie & 20 & 78 \\
    \hline
\end{tabular}
```

**Output:**

| Name | Age | Score |
|---|---|---|
| Alice | 21 | 85 |
| Bob | 22 | 90 |
| Charlie | 20 | 78 |

Table 1: Simple table with borders

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### 2. Professional Tables (Using `booktabs`)

You can create cleaner tables without vertical borders using the `booktabs` package.

**Code:**

```
\begin{tabular}{lcc}
    \toprule
    \textbf{Name} & \textbf{Age} & \textbf{Score} \\
    \midrule
    Alice & 21 & 85 \\
    Bob & 22 & 90 \\
    Charlie & 20 & 78 \\
    \bottomrule
\end{tabular}
```

**Output:**

| Name | Age | Score |
|------|-----|-------|
| Alice | 21 | 85 |
| Bob | 22 | 90 |
| Charlie | 20 | 78 |

Table 2: Professional table using `booktabs`

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## 3. Tables with Colors

You can apply colors to rows or cells to highlight important data using the `xcolor` package.

**Code:**

```
\begin{tabular}{|c|c|c|}
    \hline
    \rowcolor{lightgray} \textbf{Name} & \textbf{Age} & \textbf{Score} \\
    \hline
    Alice   & 21  & 85 \\
    \rowcolor{yellow} Bob     & 22  & 90 \\
    Charlie & 20  & 78 \\
    \hline
\end{tabular}
```

**Output:**

| Name | Age | Score |
|------|-----|-------|
| Alice | 21 | 85 |
| Bob | 22 | 90 |
| Charlie | 20 | 78 |

Table 3: Table with row colors

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## 4. Multi-row and Multi-column Tables

You can merge rows and columns to make complex tables using the `multirow` package.

**Code:**

```
\begin{tabular}{|c|c|c|}
    \hline
    \multirow{2}{*}{\textbf{Name}} & \multicolumn{2}{c|}{\textbf{Scores}} \\
    \cline{2-3}
    & Test 1 & Test 2 \\
    \hline
    Alice & 85 & 90 \\
    Bob   & 75 & 85 \\
    \hline
\end{tabular}
```

**Output:**

| Name | Scores | |
|------|--------|--------|
|      | Test 1 | Test 2 |
| Alice | 85 | 90 |
| Bob | 75 | 85 |

Table 4: Multi-row and multi-column table

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# Final Thoughts on Tables

Tables are a powerful tool in LaTeX, offering a wide range of options for presenting data clearly and effectively. By combining different packages and customization options, you can tailor tables to fit your document's needs.