
Practical Work 6: Advanced Document Features

Author: Your Name

Date: \today.

Lesson

Write the following commands in $\text{\LaTeX}$, then explain each line:

```
\documentclass[a4paper,10pt]{article}
\usepackage[utf8]{inputenc}
\usepackage{amsmath, amssymb, geometry}
\geometry{a4paper, top=2cm, bottom=2cm, left=3cm, right=3cm}
\usepackage{graphicx} % For including images
\usepackage{tabularx} % For better table control
\usepackage{booktabs} % For professional-looking tables

\title{Advanced Document Features}
\author{Your Name} \date{\today} \maketitle
\tableofcontents

\section{Introduction}
...
\end{document}
```

1. Introduction

This document introduces advanced features of $\text{\LaTeX}$, including tables, figures, cross-referencing, and bibliographies. These tools are essential for creating academic and technical documents.

2. Tables

2.1 Simple Table

Table 1: Student Grades in Simple Table

Name	Math	Physics	Chemistry
Ali	85	90	88
Fatima	78	82	80
Oussama	92	88	85

To present it, we should write the following $\text{\LaTeX}$ code:

```
\begin{table}[!ht]
\centering
\caption{Student Grades in Simple Table}
\label{tabgrades11}
\begin{tabular}{|l|c|c|c|}
\hline
\textbf{Name} & \textbf{Math} & \textbf{Physics} & \textbf{Chemistry} \\
\hline
Ali & 85 & 90 & 88 \\
\hline
Fatima & 78 & 82 & 80 \\
\hline
Oussama & 92 & 88 & 85 \\
\hline
\end{tabular}
\end{table}
```

2.2 Professional Table

Name	Math	Physics	Chemistry
Ali	85	90	88
Fatima	78	82	80
Oussama	92	88	85

To present it, we should write the following $\text{\LaTeX}$ code:

```
\begin{table}[!ht]
\centering
\caption{Student Grades in Professional Table}
\label{tabgrades22}
\begin{tabularx}{0.8\textwidth}{Xccc}
\toprule
\textbf{Name} & \textbf{Math} & \textbf{Physics} & \textbf{Chemistry} \\
\midrule
Ali & 85 & 90 & 88 \\
Fatima & 78 & 82 & 80 \\
Oussama & 92 & 88 & 85 \\
\bottomrule
\end{tabularx}
\end{table}
```

```
\end{tabularx}  
\end{table}
```

In Table 2, we can see the grades of three students in different subjects. The table is formatted using the `tabularx` and `booktabs` packages for better readability.

3. Figures

Figures are essential for visualizing data. Below is an example of how to include and reference a figure.

```
\begin{figure}[!ht]  
\centering  
\includegraphics[width=0.8\textwidth]{example-image} % Replace with your image file  
\caption{Example Figure: A placeholder image}  
\label{figexample}  
\end{figure}
```

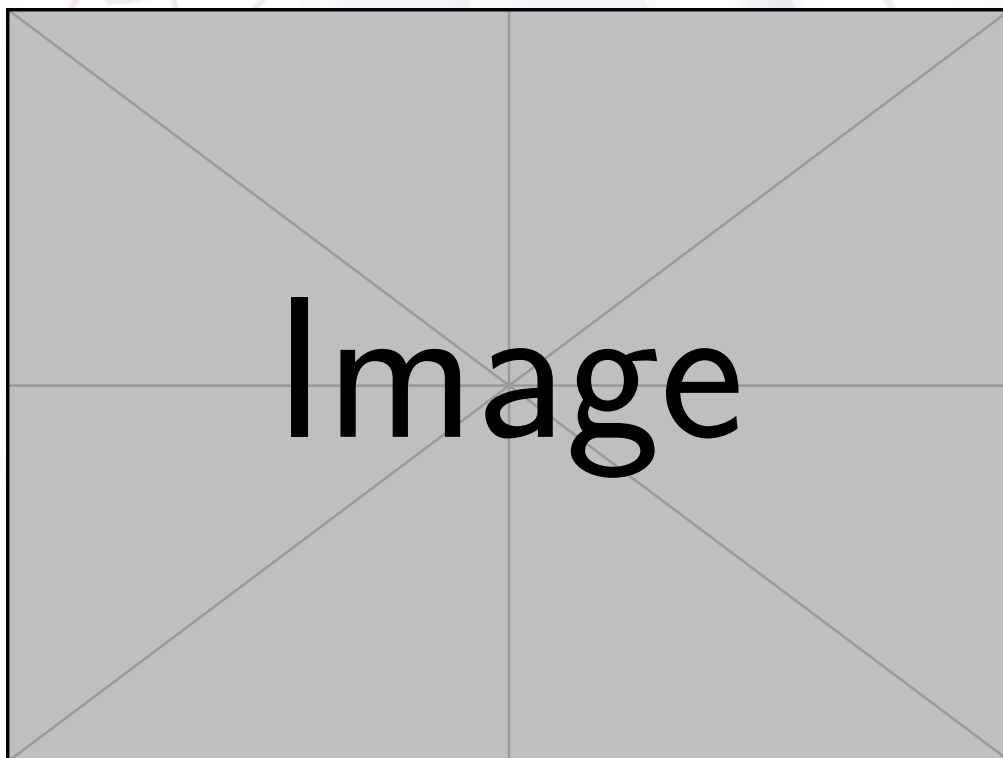


Figure 1: Example Figure: A placeholder image

Figure 1 shows a placeholder image. You can replace it with any image file (e.g., `.png`, `.jpg`, or `.pdf`) by specifying the file name in the `\includegraphics` command (For more details see [1]).

Bibliography

[1] B. Basti, *Course in L^AT_EX*, University Mohamed Boudiaf of M'sila, 2026.

Practical Exercises

Exercise 1: Create a Table

Create a table that lists the following data about books:

- Title: "Introduction to Algorithms", Author: "Cormen et al.", Year: 2009
- Title: "The Art of Computer Programming", Author: "Donald Knuth", Year: 1968
- Title: "Clean Code", Author: "Robert C. Martin", Year: 2008

Include a caption, cite references, and label the table as 'tabbooks'.

Exercise 2: Add a Bibliography

Create a bibliography with the following references:

- A book: "Introduction to Algorithms" by Cormen et al., published in 2009.
- An article: "The Art of Computer Programming" by Donald Knuth, published in 1968.