# Laborator 2

Secțiuni, cadre, ecuații

# Secțiuni

# Tipuri de secționare

- Capitol
- Secțiune
- Paragraf

# Comenzi de secționare

- \section {section}
- \chapter {chapter}

} doar pentru Report / Book

- \part {part}
- \subsection {subsection}
- \subsubsection {subsubsection}
- \paragraph {paragraph}
- \subparagraph {subparagraph}

# Exemplul 1

```
\documentclass{article}
\title{Sections and Chapters}
\author{Gubert Farnsworth}
\date{\today}

\begin{document}
\maketitle
\section{Introduction}
 This is the first section...

\section{Second Section}
 Lorem ipsum dolor sit amet...

\end{document}
```

Sections and Chapters

Gubert Farnsworth

March 27, 2014

**1 Introduction**

This is the first section.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

**2 Second Section**

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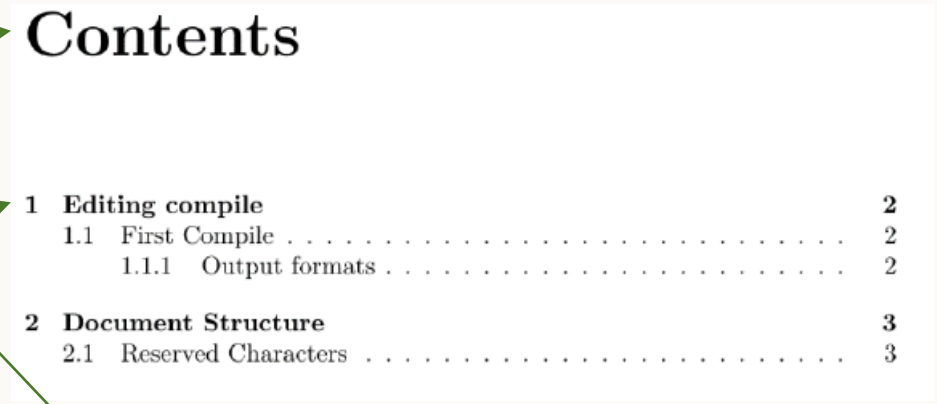
- Comanda **\section{title}** marchează *începutul* unei noi secțiuni
- Numerotarea secțiunilor se face în mod automat
- Pentru a dezactiva numerotarea secțiunii, folosim comanda : **\section*{title}** (punem * la secțiunea pe care o dorim nenumerotată)
- Folosind această comandă, se vor renumerota secțiunile

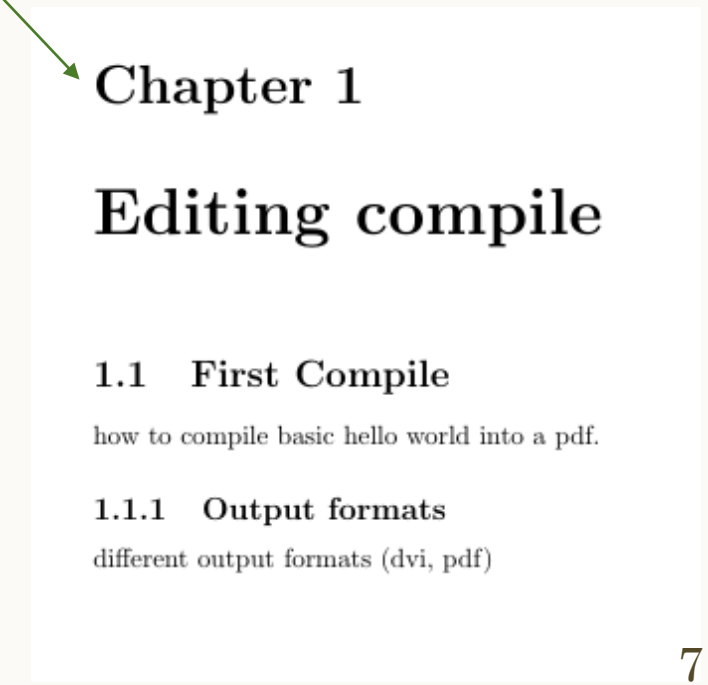
# Exemplul 2

```
\documentclass{report}
\begin{document}
\tableofcontents{}

\chapter{Editing compile}
\section{First Compile}
 how to compile ...
\subsection{Output formats}
 different output formats ...

\chapter{Document Structure}
\section{Reserved Characters}
 The following symbols ...

\end{document}
```



Contents

1 Editing compile 2
1.1 First Compile . . . 2
1.1.1 Output formats . . . 2
2 Document Structure 3
2.1 Reserved Characters . . . 3



Chapter 1

Editing compile

1.1 First Compile

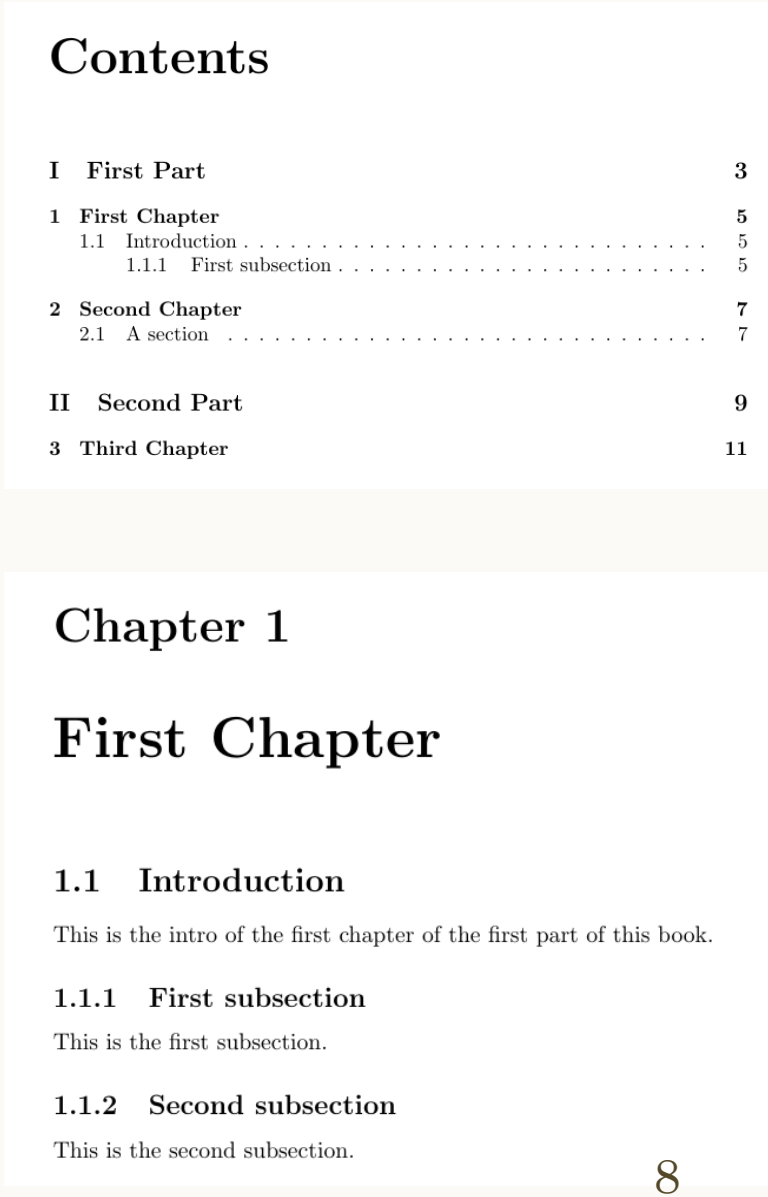
how to compile basic hello world into a pdf.

1.1.1 Output formats

different output formats (dvi, pdf)

# Exemplul 3

```
\documentclass{book}
\begin{document}
\tableofcontents

\part{First Part}
\chapter{First Chapter}
\section{Introduction}
 This is the intro of the first chapter of the first part of this book.
\subsection{First subsection}
 This is the first subsection.
\subsection{Second subsection}
 This is the second subsection.
\chapter{Second Chapter}
\section{A section}

\part{Second Part}
\chapter{Third Chapter}

\end{document}
```



Contents



Chapter 1

First Chapter

1.1 Introduction

This is the intro of the first chapter of the first part of this book.

1.1.1 First subsection

This is the first subsection.

1.1.2 Second subsection

This is the second subsection.

# Cadre

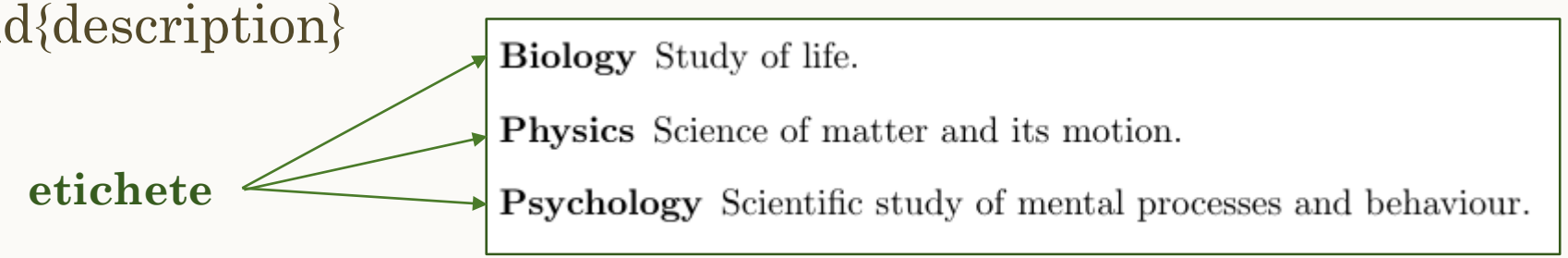
*Vom prezenta un numar limitat de cadre*

*(necesare pentru tema de casă).*

*Pentru mai multe, vedeti cursul!*

# Cadrul *Description*

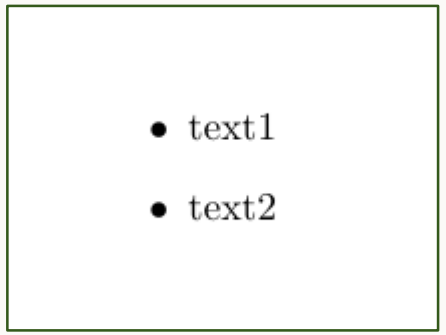
```
\begin{description}
\item[Biology] Study of life.
\item[Physics] Science of matter and its motion.
\item[Psychology] Scientific study of mental processes and behaviour.
\end{description}
```




Cadrul *Description* reprezintă o **listă etichetată**.

# Cadrul *Itemize*

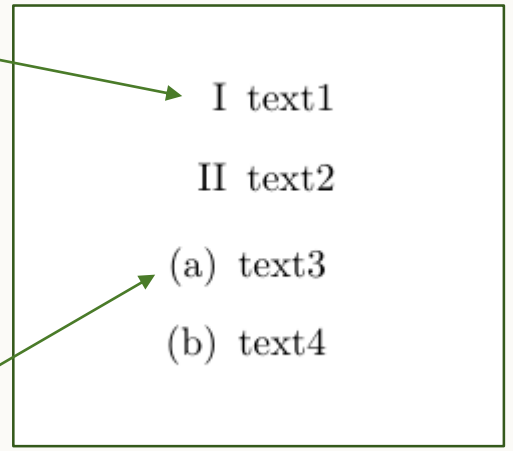
```
\begin{itemize}
\item text1
\item text2
\end{itemize}
```




Cadrul *Itemize* reprezintă o **listă nenumerotată**.

# Cadrul *Enumerate*

```
\begin{enumerate}[I]    %pentru litere romane
\item text1
\item text2
\end{enumerate}

\begin{enumerate}[(a)]    %pentru litere mici
\item text3
\item text4
\end{enumerate}
```



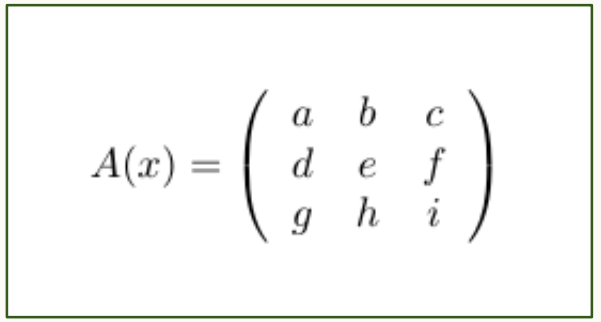

Se folosește pachetul *enumerate*
\usepackage{enumerate}

Cadrul *Enumerate* reprezintă o **listă numerotată**.

# Cadrul *Array*

```
\documentclass{article}
\begin{document}
$ A(x) = \left( \begin{array} {ccc}
a & b & c \\
d & e & f \\
g & h & i \end{array} \right) $
\end{document}
```

trece pe rândul urmator




***OBS*** : {ccc} → elemente centrate

# Cadrul *Table*

```
\begin{center}
\begin{tabular} { | l | c | r |}
\hline
1 & 2 & 3 \\ \hline
4 & 5 & 6 \\ \hline
7 & 8 & 9 \\
\hline
\end{tabular}
\end{center}
```

Creeaza liniile **verticale** ale tabelului

Creeaza liniile **orizontale** ale tabelului

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

# Ecuații

# Exemplul 1

\begin{document}

The well known Pythagorean theorem **\(x^2 + y^2 = z^2\)** was proved to be invalid for other exponents.
Meaning the next equation has no integer solutions:
**\[ x^n + y^n = z^n \]**

\end{document}

The well known Pythagorean theorem $x^2 + y^2 = z^2$ was proved to be invalid for other exponents. Meaning the next equation has no integer solutions:

$$x^n + y^n = z^n$$

# *Inline mode*

- acestea sunt ecuații care apar în *interiorul textului*

```
\begin{document}

In physics, the mass-energy equivalence is stated

by the equation $E=mc^2$ , discovered in 1905 by Albert
Einstein.

\end{document}
```

In physics, the mass-energy equivalence is stated by the equation $E = mc^2$, discovered in 1905 by Albert Einstein.

# Delimitatori de introducere a unei ecuații mod *inline*

- **\( \)** (ca la Exemplul 1)
- **$ $**
- **\begin{math} \end{math}**

# *Display mode*

\begin{document}

The mass-energy equivalence is described by the famous equation

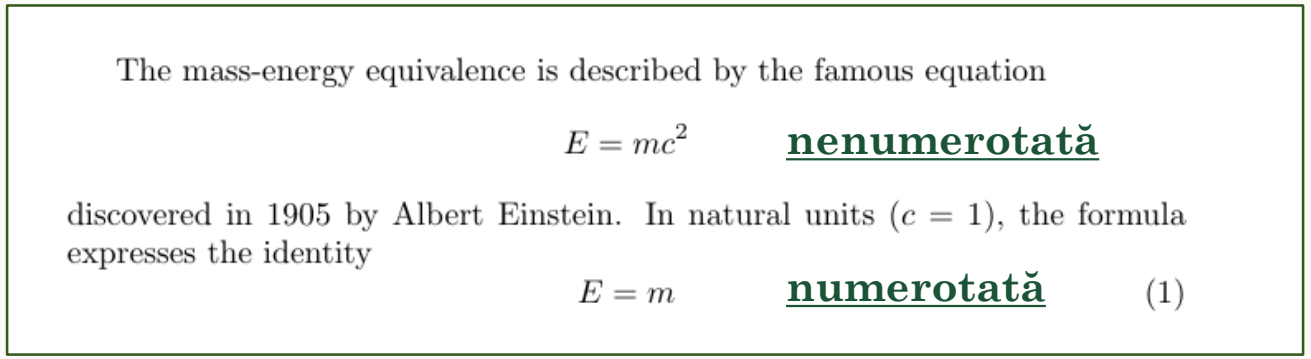
$$E=mc^2$$ discovered in 1905 by Albert Einstein. In natural units ($c$ = 1), the formula expresses the identity

**\begin{equation}**

**E=m**

**\end{equation}**

\end{document}


The mass-energy equivalence is described by the famous equation

$$E = mc^2$$ **nenumerotată**

discovered in 1905 by Albert Einstein. In natural units ($c = 1$), the formula expresses the identity

$$E = m$$ **numerotată** (1)

# Delimitatori de introducere a unei ecuații mod *display*

- **\[ \]**
- **$$ $$**
- **\begin{displaymath} \end{displaymath}**
- **\begin{equation} \end{equation}**

# Simboluri (1)

| description | code | examples |
| --- | --- | --- |
| Greek letters | `\alpha \beta \gamma \rho \sigma \delta \epsilon` | $\alpha \beta \gamma \rho \sigma \delta \epsilon$ |
| Binary operators | `\times \otimes \oplus \cup \cap` | $\times \otimes \oplus \cup \cap$ |
| Relation operators | `< > \subset \supset \subseteq \supseteq` | $< > \subset \supset \subseteq \supseteq$ |
| Others | `\int \oint \sum \prod` | $\int \oint \sum \prod$ |

# Simboluri (2)

| LaTeX markup | Renders as |
|---|---|
| `a_{n_i}` | $a_{n_i}$ |
| `\int_{i=1}^n` | $\int_{i=1}^{n}$ |
| `\sum_{i=1}^{\infty}` | $\sum_{i=1}^{\infty}$ |
| `\prod_{i=1}^n` | $\prod_{i=1}^{n}$ |
| `\cup_{i=1}^n` | $\bigcup_{i=1}^{n}$ |
| `\cap_{i=1}^n` | $\bigcap_{i=1}^{n}$ |
| `\oint_{i=1}^n` | $\oint_{i=1}^{n}$ |
| `\coprod_{i=1}^n` | $\coprod_{i=1}^{n}$ |

| Operator | Renders as |
|---|---|
| `\cos` | $\cos$ |
| `\csc` | $\csc$ |
| `\exp` | $\exp$ |
| `\ker` | $\ker$ |
| `\limsup` | $\limsup$ |
| `\min` | $\min$ |
| `\sinh` | $\sinh$ |
| `\arcsin` | $\arcsin$ |
| `\cosh` | $\cosh$ |