LateX - Basic Codes for Professional Texts

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Title

1 Section

1.1 Subsection

1.1.1 Subsubsection

1. Enumeration example:

   (a) First item
   (b) Second item

2. Itemize (*) example:

   - First item
   - Second item

3. Itemize (I) example:
   need to include `\usepackage{enumerate}`

   I First item
   II Second item

4. Itemize (i) example:
   need to include `\usepackage{enumerate}`

   i First item
   ii Second item

5. Text color example:
   need to include `\usepackage{xcolor}`
   BLUE
   RED
   GREEN

6. Example text in inline math mode (default):

   You must enclose the text between $`expression`$

   $ax^2 + bx + c = 0$

   $(A \cup B) \cap C = \{x \in \mathbb{N} \mid x^2 < 25\}$

   $\neg q \rightarrow \neg p$

   $\mathcal{L}_{A21}$: $G_2 = (V, \Sigma, P, S) = (\{A, B, C, D, E, F, S\}, \{0, 1, \varepsilon\}, P, S)$

7. Example of text in math mode highlighted (centered): You must enclose the text between $$`expression`$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\sum_{i=1}^{n} a_i$$

$$\binom{n+1}{k}$$

8. Figure inclusion

   need to include `\usepackage{graphicx}`

Figura 1: Rusty metal image

9. Table example 1:

default	1	0	0	1	0	1
bold	1	0	0	1	0	1
italics	1	0	0	1	0	1
CAPSLOCK	1	0	0	1	0	1
superscript	1	0	0	1	0	1
`reserved`	%	#	{	}	0	1

10. Table example 2:

State	**ID**	**Expression**	**Action**
I	1	$S = 0A \cup 1B$	
	2	$A = 0B \cup 1B \cup \varepsilon$	
	3	$B = 0A \cup 1A$	
II	1	$S = 0A \cup 1S$	
	2	$A = 0^*1B$	$I.2 \rightarrow$ `Lema de Arden`
	3	$B = 0C \cup 1S$	
	4	$C = (0 \cup 11)C \cup 1 \cup \varepsilon$	$I.5 \rightarrow I.4$, Fatoração
III	1	$S = 0A \cup 1S$	
	2	$A = 0^*10C \cup 0^*11S$	$II.3 \rightarrow II.2$
	3	$C = (0 \cup 11)^*(1 \cup \varepsilon)$	Lema de Arden
IV	1	$S = 0A \cup 1S$	
	2	$A = 0^*10(0 \cup 11)^*(1 \cup \varepsilon) \cup 0^*11S$	$III.3 \rightarrow III.2$
V	1	$S = 0^+10(0 \cup 11)^*(1 \cup \varepsilon) \cup 0^+11S \cup 1S$	$IV.2 \rightarrow IV.1$
VI	1	$S = (1 \cup 0^+11)^*0^+10(0 \cup 11)^*(1 \cup \varepsilon)$	Fatoração, Lema de Arden

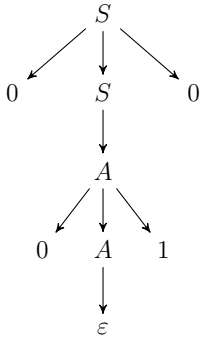
11. Array example:

$$P = \left\{ \begin{array}{l} S \rightarrow A \mid D, \\ A \rightarrow 0B, \\ B \rightarrow 0C \mid 1C \mid \varepsilon \\ C \rightarrow 0B \mid 1B, \\ D \rightarrow 1E \\ E \rightarrow 0F \mid 1F, \\ F \rightarrow 0E \mid 1E \mid \varepsilon \end{array} \right\}.$$

12. Derivation tree example:

    need to include `\usepackage{tikz}`

    need to include `\usetikzlibrary{arrows}`



13. Automata:

    need to include `\usetikzlibrary{arrows}`

    need to include `\usetikzlibrary{automata,arrows,positioning}`