tabular environment
\begin{array}{pos}{cols}
\begin{tabular}{pos}{cols}
\begin{tabular}{width}{pos}{cols}
\begin{tabular}{}{cols}
\end{tabular}
\end{tabular}
\end{array}
\end{document}

\textbf{tabular column specification}
\begin{itemize}
\item l Left-justified column.
\item c Centered column.
\item r Right-justified column.
\item p{[width]} Same as \texttt{parbox}[c][width].
\item \&[decil] Insert \texttt{decil} instead of inter-column space.
\item | Inserts a vertical line between columns.
\end{itemize}

\textbf{tabular elements}
\begin{itemize}
\item \hline Horizontal line between rows.
\item \hline(x-y) Horizontal line across columns \texttt{x} through \texttt{y}.
\item \multicolumn{n}{c}{text} A cell that spans \texttt{n} columns, with \texttt{c} column specification.
\end{itemize}

\textbf{Math mode}

For inline math, use $...$ or $...$. For displayed math, use \begin{equation} ... \end{equation}

Superscript: $\times^y$ Subscript: $\times_y$

\[ \frac{x}{y} \sum_{k=1}^n \frac{a_k}{b_k} \prod_{k=1}^n \]

\textbf{Math-mode symbols}
\begin{itemize}
\item \[ \leq \geq \neq \approx \\not \approx \\le\ge \not \le \not \ge \approx \not \approx \]
\item \[ \times \div \pm \mp \cdots \cdot \]
\item \[ \circ \otimes \ominus \oplus \prime \ldots \cdots \]
\item \[ \infty \neg \wedge \vee \lor \neg \wedge \vee \lor \]
\item \[ \subset \supset \subseteq \supseteq \subseteq \supseteq \exists \not \exists \Rightarrow \Leftarrow \]
\item \[ \cup \cap \mid \ni \left\ni \Rightarrow \Leftarrow \]
\item \[ \dot \alpha \dot \beta \ddot \alpha \ddot \beta \tilde \alpha \tilde \beta \]
\item \[ \epsilon \varepsilon \zeta \eta \xi \]
\item \[ \phi \varphi \chi \psi \Omega \]
\item \[ \lambda \mu \nu \xi \]
\item \[ \Pi \rho \sigma \tau \]
\item \[ \upsilon \phi \chi \Psi \]
\item \[ \Omega \Gamma \Delta \Theta \]
\item \[ \Lambda \Xi \Pi \Sigma \]
\item \[ \Phi \Psi \Omega \]
\end{itemize}

\textbf{Bibliography and citations}

When using \LaTeX, you need to run \texttt{latex}, \texttt{bibtex}, and \texttt{latex} twice more to resolve dependencies.

\textbf{Citation types}
\begin{itemize}
\item \cite{key} Full author list and year. \cite{WC:1953}
\item \citeA{key} Full author list. \citeA{WC:1953}
\item \citeN{key} Full author list and year. \citeN{WC:1953}
\item \shortcite{key} Abbreviated author list and year. \shortcite{WC:1953}
\item \shortciteA{key} Abbreviated author list. \shortciteA{WC:1953}
\item \shortciteN{key} Abbreviated author list and year. \shortciteN{WC:1953}
\item \citeyear{key} Cite year only. \citeyear{WC:1953}
\item \citeyearpar{key} Abbreviated year only. \citeyearpar{WC:1953}
\item \citeyearpar{WC:1953} Abbreviated year only. \citeyearpar{WC:1953}
\end{itemize}

\textbf{\LaTeX entry types}
\begin{itemize}
\item \@article Journal or magazine article.
\item \@book Book with publisher.
\item \@booklet Book without publisher.
\item \@conference Article in conference proceedings.
\item \@inbook Part of book.
\item \@incollection Part of book with its own title.
\item \@misc If nothing else fits.
\item \@phdthesis Ph.D. thesis.
\item \@proceedings Proceedings of a conference.
\item \@techreport Tech report, usually numbered in series.
\item \@unpublished Unpublished.
\end{itemize}

\textbf{\LaTeX fields}
\begin{itemize}
\item \texttt{address} Address of publisher. Not necessary for major publishers.
\item \texttt{author} Names of authors, of format \ldots
\item \texttt{booktitle} Title of book when part of it is cited.
\item \texttt{chapter} Chapter or section number.
\item \texttt{editor} Editors.
\item \texttt{editor} Editors of publishers.
\item \texttt{institution} Sponsoring institution of tech. report.
\item \texttt{journal} Journal name.
\item \texttt{key} Used for cross ref. when no author.
\item \texttt{month} Month published. Use 3-letter abbreviation.
\item \texttt{number} Any additional information.
\item \texttt{organization} Name of organization.
\item \texttt{pages} Page range (2,3,4,5,6).
\item \texttt{publisher} Publisher's name.
\item \texttt{school} Name of school (for thesis).
\item \texttt{series} Name of series of books.
\item \texttt{title} Title of work.
\item \texttt{type} Type of tech. report, ex. “Research Note”.
\item \texttt{volume} Volume of a journal or book.
\item \texttt{year} Year of publication.
\end{itemize}

\textbf{Sample \LaTeX document}
\begin{verbatim}
\documentclass{article} \usepackage{fullpage} \title{Template} \begin{document} \maketitle \section{section} \subsection*{subsection without number} \section{section} \subsection{subsection} \begin{table}[h]
\centering
\begin{tabular}{l l}
\hline
\textbf{item 1} & \textbf{item 2} \\
\hline
\end{tabular}
\caption{This is the caption}
\label{ex:table}
\end{table}
\end{document}
\end{verbatim}

A table:
\begin{verbatim}
\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|}
\hline
\textbf{item 1} & \textbf{item 2} & \textbf{item 3} \\
\hline
\end{tabular}
\caption{This is the caption}
\label{ex:table}
\end{table}
\end{verbatim}

The table is numbered \ref{ex:table}.

\textbf{Common \LaTeX style files}
\begin{itemize}
\item \texttt{abbrv} Standard
\item \texttt{abstract} short references
\item \texttt{apa} APA
\item \texttt{plain} Unsorted
\end{itemize}

\textbf{\LaTeX example}
The \LaTeX database goes in a file called \texttt{file.bib}, which is processed with \texttt{bibtex} file.

\begin{verbatim}
@String{N = {Nature}}
@Article{WC:1953, author = {James Watson and Francis Crick}, title = {A structure for Deoxyribose Nucleic Acid}, journal = {N}, volume = {171}, pages = {737}, year = {1953}}
\end{verbatim}

\textbf{Sample \LaTeX document}
\begin{verbatim}
\documentclass{article} \usepackage{fullpage} \title{Template} \begin{document} \maketitle \section{section} \subsection*{subsection without number} \section{section} \subsection{subsection} \begin{table}[h]
\centering
\begin{tabular}{l l}
\hline
\textbf{item 1} & \textbf{item 2} \\
\hline
\end{tabular}
\caption{This is the caption}
\label{ex:table}
\end{table}
\end{document}
\end{verbatim}

The \LaTeX document should have the following two lines just before \texttt{\end{document}}, where \texttt{bibfile.bib} is the name of the \BibTeX file.

\begin{verbatim}
\bibliographystyle{plain} \bibliography{bibfile}
\end{verbatim}

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http://wch.github.io/latexsheet/