4 Structure of LaTeX Commands

4.1 "Backslash" commands

A LaTeX command that starts with a backslash falls into one of two categories:

Either

- it begins with a backslash (\)
- followed by a *single* non-alphabetic character

or

- it begins with a backslash (\)
- followed by a sequence of alphabetic characters
- terminated by a non-alphabetic character
- any number of trailing spaces are swallowed

Examples:

- `A \% is a percentage character.`
  - "A % is a percentage character."
  - The `%` character is a comment character normally, marking the text upto and including the end of line as a comment.
  - The `\%` command gives the character.
  - The `\` is followed by the `%` which is *non-alphabetic* so LaTeX processes the following space as simple text rather than as a command name.
- `I like \LaTeX.`
  - "I like LaTeX."
  - The `\LaTeX` command generates the logo.
  - The `\` was followed by an *alphabetic* character, "`L`", so the sequence of characters "`LaTeX`" is taken as the command name.

  - The command name was terminated by the first non-alphabetic character, "." which is processed as normal text because it is not a space.

- `But \LaTeX doesn't like me.`
  - "But LaTeXdoesn't like me."
  - *WRONG!*
  - The command name was terminated by the first non-alphabetic character, a space, which terminated the command name but which was *swallowed*.
  - As a result, there is no space between the "LaTeX" and the "doesn't".
  - Multiple spaces won't help.

- `But \LaTeX\ doesn't like me.`
  - "But LaTeX doesn't like me."
  - The command name was terminated by the first non-alphabetic character, "\" which is not a space so is not swallowed.
  - The "\␣" command generates an inter-word space.
  - A space is not an alphabetic character and so \␣ is a simple, "single character" command like \%.

4.2 Command arguments

Some LaTeX commands require arguments. For example:

- `\documentclass{article}`
- `\frac{12345}{67890}`

  $\frac{12345}{67890}$

Note the use of the braces (`{...}`) for grouping together the characters of an argument. If the fraction example had been "`\frac12345 67890`" the output would have been "$\frac{1}{2}34567890$".

Optional arguments are specified in square brackets. For example:

- `\documentclass[a4paper,12pt]{article}`