





- [Main Page](#)
[Help](#)
[Browse](#)
[Cookbook](#)
[Wikijunior](#)
[Featured books](#)
[Recent changes](#)
[Donations](#)
[Random book](#)
[Using Wikibooks](#)
- [Community](#)
[Reading room forum](#)
[Community portal](#)
[Bulletin Board](#)
[Help out!](#)
[Policies and guidelines](#)
[Contact us](#)
- [Tools](#)
[What links here](#)
[Related changes](#)
[Upload file](#)
[Special pages](#)
[Permanent link](#)
[Page information](#)
[Cite this page](#)
[Wikidata item](#)
- [Sister projects](#)
[Wikipedia](#)
[Wikiversity](#)
[Wiktionary](#)
[Wikiquote](#)
[Wikisource](#)
[Wikinews](#)
[Wikivoyage](#)
[Commons](#)
[Wikidata](#)
[MediaWiki](#)
[Meta-Wiki](#)
- [Print/export](#)
[Create a collection](#)
[Download as PDF](#)
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LaTeX/Floats, Figures and Captions

< [LaTeX](#)

 The latest reviewed version was checked on 28 January 2023. There is **1 pending change** awaiting review.

The [previous chapter](#) introduced importing graphics. However, just having a picture stuck in between paragraphs does not look professional. To start with, we want a way of adding captions, and to be able to cross-reference. What we need is a way of defining *figures*. It would also be good if LaTeX could apply principles similar to when it arranges text to look its best to arrange pictures as well. This is where *floats* come into play.



Contents [\[hide\]](#)

1

Floats

1.1

Figures

1.1.1

Figures with borders

1.2

Tables

2

Keeping floats in their place

3

Captions

3.1

Side captions

3.2

Unnumbered captions

3.3

Caption Setup Rename

4

Lists of figures and tables

5

Labels and cross-referencing

6

Wrapping text around figures

6.1

Tip for figures with too much white space

7

Subfloats

8

Figures in multiple parts

9

Wide figures in two-column documents

10

Custom floats

10.1

Caption styles

11

Labels in the figures

12

Summary

13

Notes and references

Floats [\[edit \]](#) [\[edit source \]](#)

Floats are containers for things in a document that cannot be broken over a page. LaTeX by default recognizes "table" and "figure" floats, but you can define new ones of your own (see [Custom floats](#) below). Floats are there to deal with the problem of the object that won't fit on the present page and to help when you really don't want the object here just now.

Floats are not part of the normal stream of text, but separate entities, positioned in a part of the page to themselves (top, middle, bottom, left, right, or wherever the designer specifies). They always have a caption describing them and they are always numbered so they can be referred to from elsewhere in the text. LaTeX automatically floats Tables and Figures, depending on how much space is left on the page at the point that they are processed. If there is not enough room on the current page, the float is moved to the top of the next page. This can be changed by moving the Table or Figure definition to an earlier or later point in the text, or by adjusting some of the parameters which control automatic floating.

Authors sometimes have many floats occurring in rapid succession, which raises the problem of how they are supposed to fit on the page and still leave room for text. In this case, LaTeX stacks them all up and prints them together if possible, or leaves them to the end of the chapter in protest. The skill is to space them out within your text so that they intrude neither on the thread of your argument or discussion nor on the visual balance of the typeset pages.

As with various other entities, there exist limitations on the number of unprocessed (placed) floats in line. LaTeX by default can cope with maximum 18 floats and a symptomatic error is:

! LaTeX Error: Too many unprocessed floats.

The [morefloats](#) package lifts this limit.

Figures [\[edit \]](#) [\[edit source \]](#)

To create a figure that floats, use the [figure](#) environment.