

PLATYPUS

PAGE LAYOUT AND TYPESETTING SYSTEM

USER GUIDE

V. 0.2.0

REV 1

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WHAT IS PLATYPUS?

Platypus is a page layout and typesetting system built around two principles: ease of use and a comprehensive feature set. At present, it is in the early stages of development. Only the features discussed in this guide are currently available. This guide is frequently updated, as features are added. To know which release this document covers, see the title page.

Here are some features that are planned for upcoming releases:

- Built-in scripting language
- Styles (as in CSS in HTML)
- Template facilities
- Advanced support developers including:
 - Intelligent language-based line breaks in listings, with symbols to show the break clearly
 - Ability to embed markers such as ❶ and ❷ into listings for reference
 - Various schemes to facilitate line numbering
- Output to HTML, Microsoft .doc format, and e-book formats
- Automatic intelligent numbering of figures, listings, tables, etc.
- Embeddable images
- Advanced typesetting features such as watermarks, multidimensional tables, etc.
- Clickable links to bookmarks inside the document and URLs outside

In addition you'll find all the standard layout and typesetting features including adjustable page sizes, margins (mirrored and regular), text alignment, text formatting (bold, italics, underline, and strike-through), document styles, headers/footers, hyphenation with support for many languages, color text, color background, subscripts and superscripts, equations, columns (regular and serpentine), tabs, table of contents, multi-level index, and so on.

If you have questions, please post it to our user mailing list at: user@platypus.kenai.com.

To be kept abreast of new releases, sign up for our low-volume announcement mailing list by sending an e-mail to announce@platypus.kenai.com.

And begin creating typeset-quality documents with ease.

WHY PLATYPUS?

Platypus accepts an input text file containing text and embedded commands; it then generates high-quality PDF files. This approach is similar to TeX and troff, although Platypus has focused on greater ease of use than those packages. In addition, Platypus, when complete, will contain several important features missing in other tools.

Platypus is not a word processor. It does not use a graphical interface. Its only input is a text file with embedded commands. This approach makes it much easier to write documents—especially long documents—because it enables you to focus on content without having to format the document as you go. Hence, your fingers never leave the keyboard, and your attention is never interrupted by problems such as fixing indent levels of bullets, or the like. Platypus takes care of formatting and layout for you.

Another advantage of this approach is that you control the fundamental document. You cannot do this with word processors: Have you ever looked inside a document created by Microsoft Word? It is filled with proprietary formatting information that is unintelligible. If something should corrupt the document, you have no way to fix it. In Platypus, the software processes the same file you work on. If the file should somehow be corrupted, you can go and fix it yourself with no difficulty.

Platypus is designed for ease of use. As you'll see in the following pages, most of the commands are intuitive and easy to learn. Moreover, most of them have intelligent defaults. So much so, that you can take most text files and run them through Platypus without modification and generate a useful PDF file (consisting of letter-size pages, with 1" margins and text in 12-point Times Roman font).

A final point: Platypus is open-source software. That is, it is available at no cost from platypus.pz.org. You can download the source code from the same site.

We think the more you use Platypus, the happier you'll be creating typeset-quality documents.

—The Platypus Team

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NEW OR MODIFIED IN THIS RELEASE

Numerous items in Platypus have changed since version 0.1.6.x and earlier. The most significant of these is the new architecture built around plug-ins. This more-modular design enables simplified addition of new commands and support for more output formats. This requires a completely different installation procedure. For users of earlier versions of Platypus, the following changes are the most important.

CHANGES THAT DON'T AFFECT EXISTING COMMANDS OR COMMAND SYNTAX

- You can now generate Platypus listings in HTML format. To generate a listing, use the command line arguments: `platyrun document.plat document.html -format listing`

The `-format listing` switch tells Platypus to create the listing

- Platypus previously could use TrueType and OpenType typefaces. This version adds support for TrueType collections (.ttc files)

NEW COMMANDS AND NEW COMMAND OPTIONS

[columnwidth: enables users to specify the width of the columns on the page. Its use is optional. (In the event it is not specified, Platypus will calculate the optimal width based on page size and number of columns. This latter calculation was the only way column width was computed prior to this command.)

[dump: This command has two new options. You can now dump the command line and data for the current paragraph using [dump:commandLine] and [dump:paragraph], respectively.

[+footer] and [- footer] turn printing of the footer on and off. Footer printing defaults to off for page 1, and on for all subsequent pages.

[paraindentR:...] enables indenting paragraphs from the right margin. Along with paraindent: you can now indent both sides of a paragraph.

MODIFIED COMMAND OPERATION OR SYNTAX

[font] Previously, to change a font's typeface and size, you had to enter two commands: [fface and [fsize. This approach still works. However, to change both face and size in one command, use the font family command: [font | face="Arial" | size=11pt]

[pagesize: You can now change page size at any point in the document. (In previous versions, page size was set once and could not be changed.) Issuing a new page size command, results in an immediate: flushing of all pending content to the document, and the start of a new page in the specified size.

[`paraindent:` previously this command was used to specify the amount of indent of the first line of a paragraph. That function is now handled by the `indent:` command. `Paraindent:` now indents the entire paragraph from the left margin. A new command, `paraindentR:` specifies the paragraph indentation from the right margin.

[] operates differently. This is the change that will most break compatibility of previous files. Please see the discussion of this item later in the manual.

New paragraphs are now created by a blank line in the Platypus file. This is a major change.

INSTALLATION

The installation is completely different, and all earlier installation instructions should be discarded. The current installation includes the core program, various plugins, configuration files, and several fonts, in addition to new documentation. See following section on Installation for details.

INSTALLATION

Platypus is a Java application that requires Java 6.0 SE (also called Java 1.6) or a later version. Platypus is delivered as a .zip file.

The .zip file should be unzipped into a new directory. This directory becomes the Platypus home. On all systems, a system variable, PLATYPUS_HOME, should be set to point to this directory. If you do not know how to set a system variable, then you must use the **platyrn** file included with the program.

The directory consists of the following files and subdirectories (directory names are preceded by a \ for clarity)

\PLATYPUS_HOME

platypus.jar	the main Platypus program
platyrn.bat	a convenience file for running Platypus on Windows and Vista
UserGuide.pdf	this document

\config

<various configuration files>

\licenses

LICENSE.TXT: information on Platypus license(s)

\plugins

pdf.jar
listing.jar

\lib

<various third-party libraries used by Platypus>
itext.jar

\fonts

<a few free fonts that ship with Platypus>

Once you have set PLATYPUS_HOME and have unzipped the file, run Platypus with the -fontlist option. (See next section.) This option inspects your current system and makes an inventory of the TrueType and OpenType files on your system, and the name by which they can be referred to when generating PDF files. The resulting file, fontlist.txt, is placed in \PLATYPUS_HOME\config. If you later add new fonts to your system, rerun this command so that Platypus will detect them.

RUNNING PLATYPUS

To run Platypus as a Java command:

```
java -Xmx256M -jar PLATYPUS_HOME\platypus.jar in-file out-file [options]
```


where:

`in-file` is any file containing text and Platypus commands. The convention is to use the `.plat` extension for Platypus file. But any text file with any extension can be an input file.

`output-file` is the resulting file. The file extension tells Platypus what format to use. If it is omitted, Platypus generates a PDF file by default.

Currently PDF files and Platypus listings with color-coded syntax are supported, although HTML and RTF will be supported later. Instructions on generating a listing are explained below.

[options] are command-line switches that enable various options. These include:

- `help` prints basic usage information including version number and all valid Platypus options.
- `fontlist` writes an alphabetized list of all fonts found by Platypus on the system. The font names appear in the same format in which they should be specified in a Platypus document (via the `[ff: command]`). This list is called `fontlist.txt` and is located in `\PLATYPUS_HOME\config`.
- `format` identifies a format that might be different from the file extension. For example, to generate a listing of a Platypus file with commands and comments highlighted, create an `html` file and use the `-format listing` option to tell Platypus you want a listing: `platyrun infile.plat infile.html -format listing`
- `verbose` Platypus normally prints warnings and errors to the screen. This option increases output by also showing informational messages about internal operations.
- `vverbose` (for “very verbose”) prints a considerable amount of information about internal operations to the screen. This switch is used primarily for debugging purposes.

Note: to see the current version of Platypus or for a listing of command-line options, simply run Platypus without any arguments or switches or with the `-help` switch.

PLATYRUN CONVENIENCE FILE

Users of Windows and Vista will find the **platyrun.bat** file, which is a convenience file that makes it simple to run Platypus. (If you don’t know how to set the environment variable, `PLATYPUS_HOME`, **platyrun.bat** is your only option.) To use the file, please open it in an editor (such as Notepad) and follow the instructions. You will need to specify the directory that is the Platypus home. Save the file. Then anywhere this document states run platypus, enter platyrun (followed by the input-file name, output-file name, and options described in the previous section).

PLATYPUS COMMAND SYNTAX

All Platypus commands are placed inside a pair of square brackets, without exception.

Here is an example of text containing Platypus commands (highlighted):

```
[align:center]Section II. Federal Highways Since 1960[ ]  
  
[noindent][align:left]The Federal Highway system, which was born in the  
1950's, saw remarkable growth during the 1960's. This section details the key events  
from that period.[ ]Before we begin, however,....
```

As can be seen, the commands are mostly self-explanatory and should be easy to remember, or even guess. Some commands take parameters. These commands place the parameter after a full colon, such as `[align:left]`

Parameters cannot contain spaces or embedded `[` and `]` characters, so if a parameter needs to include any of these characters, it is placed in curly brackets. For example: `[ff:{arial compressed}]`

To use the `[` character in regular text without Platypus interpreting it as a command, precede it with a slash (`/`), which serves as an escape character: `/ [this is not a command]`.

To print the two characters `/ [` use: `[/] / [`. The `[/]` prints a slash. The slash character needs to be written this way only when it precedes a `[` character. At all other times, you can use a `/` and the slash character will print as expected.

Not all `[` characters introduce commands, some are simply text. For example, a `[` followed by either white-space or by a digit is interpreted as text. This means that to output `[26]` to a document requires no special escape character. This feature is designed to enable Platypus to process a greater range of pure text files without unexpected side effects.

COMMENTS

Platypus uses both line comments and block comments.

Line comments use the `%%` sequence, which must be the first two characters in the line.

Block comments, which can appear on a single line or span many lines, start with `[%%` and end with `%%]`.

Platypus handles embedded comments correctly. To comment out a large chunk of text that might already contain block comments, simply increase the number of `%` characters for both the opening and closing markers. So, for example, `[%%%` and `%%%]` will comment out a block of text that contains comment blocks that use `[%%`. Likewise, adding more `%` signs to the beginning and ending blocks will comment out text containing block comments with fewer `%` signs.

UNITS OF MEASURE

Many Platypus commands sometimes use values that require a unit of measure. When these values refer to distance or to size, they can use one of four types of units: centimeters, inches, lines, and points. These units are expressed in commands as follows:

centimeters:	cm
inches:	in
lines:	li
points:	pt

A point is a unit of measure used in typesetting and defined as 1/72 of an inch (although purists will note that in its original formulation, a point was slightly smaller than this). In many cases, the unit of measure is optional. For most commands, the default unit is points, except for a handful of commands as documented in the next sections.

All units can contain fractional values that are indicated with a decimal point. Here are three examples that all communicate the same distance:

```
[paraindent:0.5in]
[paraindent:1.27cm]
[paraindent:36pt]
```

The line (li) unit of measure is not included in these examples because the size of a line depends on how it's been set at any given point in the document. See the [leading command for more information on its use.

PAGE COMMANDS

Platypus commands are principally broken down into several key categories: those that operate on the whole page (margins, columns, layout, new page, etc.), on paragraphs (indentation, justification, etc.) and those that are applied to individual words (fonts, underlining, strikethrough, special characters). In addition, a collection of miscellaneous formatting commands round out Platypus' capabilities.

PAGE SIZE

Platypus defaults to a page size of 8½" wide by 11" high, the so-called 'letter' size in the United States. Fifty predefined page sizes are available for use with the `pagesize` command (Table 1). In addition, custom page sizes can be specified.

Table 1. The predefined page sizes in Platypus.

Platypus Value	Description	Metric (mm)		Inches		Points	
		W	H	W	H	W	H
4A0	DIN476	1682	2378	66.2	93.6	4768	6741
2A0	DIN476	1189	1682	46.8	66.2	3370	4768
A0	ISO	841	1189	33.1	46.8	2384	3370
A1	ISO	594	841	23.4	33.1	1684	2384
A2	ISO	420	594	16.5	23.4	1191	1684
A3	ISO	297	420	11.7	16.5	842	1191
A4	ISO	210	297	8.3	11.7	595	842
A5	ISO	148	210	5.8	8.3	420	595
A6	ISO	105	148	4.1	5.8	297	420
A7	ISO	74	105	2.9	4.1	210	297
A8	ISO	52	74	2.0	2.9	148	210
A9	ISO	37	52	1.5	2.0	105	148

Platypus Value	Description	Metric (mm)		Inches		Points	
		W	H	W	H	W	H
A10	ISO	26	37	1.0	1.5	73	105
B0	ISO	1000	1414	39.4	55.7	2834	4008
B1	ISO	707	1000	27.8	39.4	2004	2834
B2	ISO	500	707	19.7	27.8	1417	2004
B3	ISO	353	500	13.9	19.7	1000	1417
B4	ISO	250	353	9.8	13.9	708	1000
B5	ISO	176	250	6.9	9.8	498	708
B6	ISO	125	176	4.9	6.9	354	498
B7	ISO	88	125	3.5	4.9	249	354
B8	ISO	62	88	2.4	3.5	175	249
B9	ISO	44	62	1.7	2.4	124	175
B10	ISO	31	44	1.2	1.7	87	124
ANSI-A	ANSI	216	279	8.5	11	612	792
ANSI-B	ANSI	279	432	11	17	792	1227
ANSI-C	ANSI	432	539	17	22	1224	1584
ANSI-D	ANSI	539	864	22	34	1584	2448
ANSI-E	ANSI	864	1118	34	44	2448	3168
ARCH-A	Architectural A	229	305	9	12	648	864
ARCH-B	Architectural B	305	457	12	18	864	1296

Platypus Value	Description	Metric (mm)		Inches		Points	
		W	H	W	H	W	H
ARCH-C	Architectural C	457	610	18	24	1296	1728
ARCH-D	Architectural D	610	914	24	36	1728	2592
ARCH-E	Architectural E	914	1219	36	48	2592	3456
LEDGER		432	279	17	11	1224	792
LEGAL		216	356	8.5	14	612	1008
LETTER		216	279	8.5	11	612	792
NOTE		191	254	7.5	10	540	720
11X17		279	432	11	17	792	1224
Cards and Card Stock							
BUSCARD-INTL	Bus. card (Intl)	85.6	54	3.4	2.125	243	153
BUSCARD-US	Business card (US)	89	51	3.5	2	252	144
ID-1	ISO 7810	85.6	54	3.4	2.125	243	153
ID-2	ISO 7810	105	74	4.1	2.9	297	210
ID-3	ISO 7810	125	88	4.9	3.5	354	249
INDEX3X5	Index card	127	76	5	3	360	216
INDEX4X6	Index card	152	102	6	4	432	288
INDEX5X8	Index card	203	127	8	5	576	360

To specify one of these sizes, use the pagesize command followed by the value in the left column. So A4 size, would be specified with: [pagesize:A4] and legal paper in the US would be specified with [pagesize:LEGAL].

In the rare event that none of the sizes in Table 1 meets your needs, you can specify your own page size with the `[pagewidth:]` and `[pageheight:]` commands. The following commands define a page of legal-size paper:

```
[pagewidth:8.5in][pageheight:14in]
```

Platypus uses the page size that is in effect when the page begins. Consequently, page size should be specified in the Platypus file *before* any text in the document, otherwise the first page will have the default size (8 ½"x11", so-called "letter" size in North America).

You can change the page size of the next page at any point in the document. Note however, that issuing a new page size command, results in an immediate start of a new page in the specific size.

PAGE MARGINS

Margins are the (generally) blank areas that form the edges of a printed document. They can be set or modified using the following commands.

```
[ tmargin: for the top margin,  
[ bmargin: bottom margin,  
[ lmargin: left margin, and  
[ rmargin: right margin.
```

For example, the commands:

```
[ tmargin:36pt ][ bmargin:1.27cm ]
```

create top and bottom margins of ½" each.

If no margins are specified, Platypus documents default to margins of 1" (2.54 cm) on all four sides.

When margins are specified, they take effect at the *next* page. Consequently, if you want to set the margins for an entire document, you need to place the margin commands before any text is encountered.

To see what size the margins are currently set to, use the `[dump:page]` command. When Platypus encounters this command, it prints various data items, including margin sizes, to the console or monitor.

MIRRORED MARGINS

When printing a document that will have a binding, it is frequently desirable to have left and right margins of unequal width. Generally on a right page, the left margin will be somewhat wider to allow for the document binding. The left page then mirrors this margin set-up: the right margin, which is closer to the binding, is wider. To get this in Platypus, define the margins for the right page and then use the command `[+marginmirror]`, which turns on the margin mirroring. (Note: once turned on, it cannot be turned off within the same document. The default is off, meaning all pages have the same margins.)

This command also changes the way page headers and footers are printed, as it forces those mechanisms to take into account whether a page is right or left to determine where to place text and page numbers.

Page margins and margin mirror must be specified *before* the first text. If placed after text has been output, the commands are ignored.

NEW PAGE

A new page can be forced by the `[pg]` command. Any text following this command will start at the top of the next page. To insert a blank page, use `[pg]` twice.

There is no need to put a new-page command at the end of the document. PDF files automatically make the last page a full page.

PAGE FOOTER

Platypus can print a footer at the bottom of any and all pages. By default, a page footer consisting of the page number in the following format is printed on all pages of a document except the first:

— 9 —

where 9 stands for the page number.

To disable printing of the footer, use the `[- footer]` command. To start or restart printing the footer later, use `[+footer]`.

☒ **Tip:** To print the footer on every page, including page 1, put the `[+footer]` command before the end of the text on page 1.

COLUMNS

Platypus documents can contain columns of text. To change the number of columns use the `[columns: command`. So to change from the default single column to 2 columns, enter: `[columns: 2]`. Platypus will automatically calculate the size of the columns and the gutter (the space between the columns).

When going from 1 column to more columns, Platypus places the multicolumn text below the existing single-column text on the same page. Likewise, when going from multiple columns to 1 column, Platypus puts the single column text directly below the multiple columns.

However, when going from multiple columns to some other number of multiple columns, Platypus starts a new page. So, in this situation, changing columns has the effect of ejecting a new page.

COLUMN WIDTH

If you want to override the column width computed by Platypus, use the `[columnwidth: command`. This command should immediately precede the `[columns: command`.

To turn off custom column width, set columnwidth to 0: `[columnwidth: 0]`

NEW PARAGRAPH

A new paragraph is created by a blank line in the text.

This is the end of the first paragraph.

This is the beginning of the second.

A pair of commands determine how a new paragraph is started, reflecting two principal styles: block style and traditional.

Block style is frequently used in letters and memoranda. In this style (used in this guide), a line is skipped before a new paragraph, and the first line of the new paragraph is not indented:

gave their lives that that nation might live. It is altogether fitting and proper that we should do this today on this battlefield.

But, in a larger sense, we cannot dedicate—we cannot consecrate—we cannot hallow— this ground. The brave men, living and dead, who struggled here [...]

Traditional style, by contrast, does not skip a line and it does indent the first line of a new paragraph. It is the preferred format for books, magazines, and other documents consisting of more than a few pages. Here's how it looks:

gave their lives that that nation might live. It is altogether fitting and proper that we should do this today on this battlefield.

But, in a larger sense, we cannot dedicate—we cannot consecrate—we cannot hallow— this ground. The brave men, living and dead, who struggled here [...]

[`paraskip:1li`] This command tells Platypus to skip one line before the next paragraph. For block style, it should be set to 1, for traditional style it should be set to 0. Note: if no units are specified, the default of lines is used.

Typically, this command and [`indent:`] (which controls the first-line indent; see next section) are set once at the beginning of a document and not changed afterwards. However, you can change them at any point. If multiple instances of these commands appear in the same paragraph, Platypus uses the last one.

INDENTATION

There are four paragraph indentation commands: indent the first line only, suppress first-line indent for the following paragraph, and indent the entire paragraph from either the right or left side.

`[indent:36pt]` This command tells Platypus to indent the first line of all following paragraphs by 36 points. Of course, you can specify the distance in inches, centimeters, or points. If no unit is specified, the default is points. To turn first-line indentation off, this value should be set to zero: `[indent:0]` Note that for PDF files, Platypus defaults to an indent of zero; so there is no need to specify this value unless you want something other than zero.

Sometimes you have set up a first-line indent, but you don't want the first line of a specific paragraph indented. (This frequently occurs at the first paragraph after a section heading or in a new chapter.) In such a case, use the `[noindent]` command, which suppresses indentation for the next paragraph *only*. Note: this command must appear before new text in the paragraph.

To indent the entire paragraph from the left margin, use the `[paraindent: command`. To indent a paragraph from the right margin, use the `[paraindentR: command`. Note this second command has an upper-case R at the end of the command name (referring to the right margin).

To see what indentation parameters have been set for a given paragraph, use the `[dump: paragraph]` command, which displays various data items about the current paragraph, including indentation, on the system console.

ALIGNMENT

To specify how text should be aligned on the page, use one of the following options:

<code>[align:left]</code>	text is aligned on the left margin (as in this document)
<code>[align:center]</code>	text is aligned in the center (often used for headings)
<code>[align:right]</code>	text is aligned on the right margin
<code>[align:just]</code>	text is aligned on both the left and right margins
<code>[align:justified]</code>	

Alignment applies to an entire paragraph. If several alignment commands appear in the same paragraph, Platypus implements the last one.

To see the current alignment setting, use the `[dump: paragraph]` command. It displays several data items on the console regarding the current paragraph, including alignment.

END OF LINE

By default, Platypus wraps lines of input text into paragraphs. Sometimes, however, you need to have a hard end of line to avoid this wrapping. The `[]` command provides this. Here is an example:

Shopping List

```
Lettuce[]  
Carrots[]  
Apples[]  
Cherries[]  
Lots of Cookies
```

This produces the expected result of a list, with one entry per line and blank lines (due to end of paragraph) after “Shopping List” and at the end, after “Lots of Cookies”.

To insert a blank line without triggering a new paragraph, enter `[]` on a line by itself. This command can be particularly useful when you want to skip multiple lines, as in:

```
[]  
[]  
[]
```

This inserts three blank lines in the current paragraph.

☒ Tip: If you insert a blank line using the `[]` command, it’s important to remember that the text prior to and immediately after the blank line are part of the *same* paragraph. This means that if after the blank line, you change alignment, leading, or any other feature that affects the current paragraph, the text *before and after* the blank line will be affected. As a result, it’s generally better to use separate paragraphs than to use on `[]` to insert a blank line between blocks of text.

☒ Tip: As a rule, the `[]` command should not be placed at the end of a paragraph as this will add an extra blank line to the paragraph break. However, this blank line can occasionally be desirable; this occurs occasionally when `[paraskip:0li]` is specified but a blank line is desired at a paragraph break.)

FONTS

In common parlance, the term font generally refers to a typeface. We're fond of saying "the Arial font." But in typesetting, a font refers to the specific instance of a typeface, including data about the size of the letters and certain formatting attributes, such as bold or italic. A font, as referred to by a typesetter, might be: 10-point Arial Extra Bold. Platypus uses this expanded typesetter's definition when referring to fonts. By default, Platypus uses 12-point Times Roman medium. (Medium means that there are no special formatting characteristics: it's neither bold nor italic.)

TYPEFACES

Platypus supports all TrueType and OpenType fonts on the system (these are the prevalent fonts for Windows, Mac, and Linux) plus five typefaces built into all PDF readers: Courier, Helvetica, Times Roman, Symbol, and Dingbats.

To change the current typeface, use the `[ff: command`. (ff stands for "font face." All font commands begin with the letter f.) To change to the Courier typeface, for example, enter: `[ff:COURIER]`. The typeface will change to Courier and remain Courier, until another `[ff: command` is encountered.

THE BASE 14 FONTS

Every PDF reader or rendering device is required to support the Basic 14 fonts. These fonts include Courier, Helvetica, and Times Roman in medium, italic, bold, and italic bold, plus two image/icon fonts called Symbol and Dingbat. These fonts are specified using the following commands. (Note that all these typefaces are in capitals.)

```
[ff:COURIER]
[ff:HELVETICA]
[ff:TIMES_ROMAN]
[ff:SYMBOL]
[ff:DINGBATS]
```

These fonts, which are illustrated on the following page, are known in Adobe's language, as the "Base 14 fonts."

The use of other fonts is discussed in the next section.

[List of typefaces goes here]

OTHER FONTS

Platypus maintains a list of TrueType font files (.ttf), TrueType font collections (.ttc), and OpenType fonts (.otf) in **fontlist.txt** in the PLATYPUS_HOME\config directory. When creating or updating this list (by running Platypus with the `-fontlist` option), it searches for fonts in the following directories.

On Microsoft Windows: `c:\windows\fonts\
 d:\windows\fonts\
 c:\winnt\fonts\
 d:\winnt\fonts\`

On UNIX and Linux-based systems:

`/usr/X/lib/X11/fonts/TrueType
/usr/openwin/lib/X11/fonts/TrueType
/usr/share/fonts/default/TrueType
/usr/X11R6/lib/X11/fonts/ttf`

On all systems:

`(java runtime directory)/lib/fonts`

Any fonts found in these directories are eligible for use. Platypus embeds any characters used into the PDF file if the fonts permit it (the vast majority do permit this). This renders the document accurately even if the reader's system does not have the exact same fonts. Some fonts do not allow embedding. In this case, the PDF reader software will attempt to find the closest matching font.

Platypus uses the name of the font as it's specified in the font file. If the font fact you specified is not appearing in the output document, consult **fontlist.txt** in the PLATYPUS_HOME\config directory for the right name of the font. This is an alphabetical list (by font name) of all the fonts Platypus found on your system. Here is a sample extract:

`Arial Unicode MS=c:/windows/fonts/ARIALUNI.TTF
Batang=d:/windows/fonts/batang.ttc
BatangChe=d:/windows/fonts/batang.ttc
Bell MT=c:/windows/fonts/BELL.TTF`

This shows that "Arial Unicode MS", "Batang", "BatangChe", and "Bell MT" are all valid names for fonts on this user's system.

If the font name contains spaces, it must be placed between curly braces: {}. For example, the Bell MT font in the previous list of fonts would be specified by:

`[ff:{Bell MT}]`

Note: in the event that you specify an invalid typeface, Platypus ignores the request, issues a warning on the console, and continues using the current font. So, if you don't see the font you're expecting, check for error messages and also that you have correctly specified the name of the font.

FONT ATTRIBUTES (BOLD AND ITALIC)

Bold is turned on via `[+b]` and turned off via `[-b]`. Likewise, italics uses `[+i]` and `[-i]`. These attributes remain in effect across a font change. So, if you have italics turned on and you insert a character in another typeface, it too will be italicized. Only the corresponding switch turns off bold or italics. These switches need not be paired. For example, you can italicize an entire document by placing a `[+i]` at the beginning.

Moreover, these attributes can overlap, which is something that's difficult to do in other page-layout languages. For example,

This `[+i]` is a sample of `[+b]` overlapping `[-i]` font `[-b]` attributes.

generates:

This *is a sample of **overlapping font** attributes.*

To turn on both bold and italics at the same time, use both switches: `[+b][+i]` or `[+i][+b]`.

FONT SIZE

To change the size of the current font, use the `[fsize: command]`. For example, to change the current font to 14 point, enter: `[fsize:14pt]`. The output text remains at this new size until another command changing font size is encountered. If this command is part of a series of font commands, it can use the multiple-command syntax: `[font|size:15pt|...]`



A Look Inside: Font Size and Leading.

When the font size is changed, the leading (or space between lines) is changed as well. The rules for this are that the leading is generally set at 1.2 times the size of the *largest* font in the paragraph (see exception below.) This means that if you change to a smaller font in mid-paragraph, the leading will remain the same.

If you make the font only slightly larger (up to 3 points larger), the leading will not change. This feature enables you to change font size to adjust for a change in typefaces without modifying the spacing of the paragraph. Anything size increase larger than 3 points results in computing the leading at 1.2 times the size of the largest font.

You can always over-ride these settings by explicitly setting the leading with the `[leading: command]`.

LEADING (SPACE BETWEEN LINES)

The height of a line (from the base line of one line of characters to the baseline of the line below it) is known as *leading* (pronounced “led-ding”), as a reference to the days when pages were typeset by hand and strips made of lead were placed between lines of text. A typical arrangement of text and leading is 12-point text on 14-point leading.

Platypus automatically adjusts leading to fit the font you’re using. However, if you want to override this setting, you use the `leading` command. This is useful if you want to double space text, which would use this command: `[leading:2li]`

To revert back to single-spaced text later, use `[leading:1li]`. The `leading` command also accepts all the usual units of measure, so you can use it to expand or tighten the space between lines as you wish.

Note: the `leading` command affects the entire current paragraph. So if it appears at the end of the paragraph the preceding text in the paragraph will have the same leading as the end. If two or more `leading` commands appear in the same paragraph (invariably, an error), the last one is used.

To view the leading at any point in the document, use the `[dump:paragraph]` command. See the entry for that command for further details.

UNDERLINE

Underlining is turned on using `[+u]` and turned off using `[-u]`. This command results in text being underlined with a single line.

STRIKETHROUGH

Strikethrough text has a line going through it, like this: ~~This is Strikethrough~~. It is generally used in documents to show material that has been changed or deleted. Platypus supports the use of strikethrough with the following commands:

`[+st]` begins strikethrough, and `[-st]` marks the end of the strikethrough text. For example:

The committee voted `[+st]`against`[-st]` in favor of the resolution.

Results in:

The committee voted ~~against~~ in favor of the resolution.

When the font size changes, the position of the strikethrough line is automatically changed by Platypus, so that it always falls correctly through the text.

USER-DEFINED STRINGS (MACROS)

Platypus offers a limited string substitution capability, similar in concept to macros in a variety of programming languages. You can define a variable and assign a string to it. Later, you can print that string by simply referencing the variable. These user-defined strings are called macros in Platypus.

Macro names must start with a \$ character. The second character must be a letter (either upper-case or lower-case) or a digit. Thereafter, any sequence of letters, digits, or the _ character is permitted. Macro names are case sensitive. The minimum length is two characters, such as \$a

Valid names: \$PageSize, \$2007TaxesDue, \$iq

Invalid names:

height (must start with a \$)

\$_mine (first character after a \$ must be a letter or digit)

\$1/2nelson (may only contain a letters, digits, or _)

\$My Macro (no embedded spaces allowed)

Here is how to define a macro:

```
[def:$SampleMacro{This is sample macro text.}]
```

Note that the value of the variable is enclosed in curly braces { } and follows immediately after the name. It can contain any characters except }.

To print the variable contents, use an asterisk. Using the previous macro [*\$SampleMacro] results in:

This is sample macro text.

being printed to the document.

Another example: The font list on page 21 was generated in part using this feature:

```
...
[def:$FontText{The Quick Brown Fox Jumped...1234567890}][]
...
[ff:TIMES_ROMAN]Helvetica[]
[ff:HELVETICA][*$FontText][]
[]
[ff:TIMES_ROMAN]Helvetica Italic[]
[ff:HELVETICA][+i][*$FontText][-i][]
[]
[ff:TIMES_ROMAN]Helvetica Bold[]
```

`[ff:HELVETICA][+b][*$FontText][-b][]`

Note: this feature is scheduled to be greatly expanded in upcoming releases.

SYSTEM-DEFINED STRINGS

Platypus internally uses several system values that can be printed to a document. Like user-defined strings, these values can be printed to a document with the `[* command]`. So, for example, to print the current version number of Platypus in a document, use: `[*_version]`

The printable system values are:

<code>_version</code>	The version of Platypus being run. This is the same value that appears on the console when Platypus is run.
<code>_format</code>	The format of the output document. Current possibilities are: PDF or LISTING
<code>_commandLine</code>	The command-line arguments for this run of Platypus. This value consists of all the text typed at the command line after the command to run Platypus. For example, if you run Platypus with: <code>java -jar Platypus.jar input.txt output.pdf -verbose</code> the <code>_commandLine</code> value will be: <code>input.txt output.pdf -verbose</code> (Note: Back slashes will appear doubled. So <code>\doc\input.txt</code> becomes <code>\\doc\\input.txt</code> . This effect is due to how Java handles backslashes.)

DEBUGGING PLATYPUS RESULTS

Sometimes, when you're not getting the output you expect, it's useful to have commands that let you peer into the Platypus operations. The following commands print data to the console (display screen) about various aspects of Platypus operation at the point where the command was encountered.

[dump:all] displays all values that can be shown including all those below. Be careful with this command, it can potentially output lots of data.

[dump:commandLine] displays Platypus version number, the command line used to invoke this run of Platypus, and the output format.

[dump:page] displays page size, width of the margins, number of columns, etc. for the current page

[dump:paragraph] displays text alignment, left and right indent, first-line indent, etc. for the current paragraph

[dump:userStrings] displays all user-defined strings (macros) and their respective values.

Dump commands can be placed anywhere in the document where a command is legal.

Most displayed data shows not only an item's value, but the file and line number where it was last changed. For example, this sample output from the [dump:page] command:

```
page width: 595.0 points last changed at line 212
page height: 842.0 points last changed at line 212
margins:
  top: 72.0 points last changed at line 0
  bottom: 72.0 points last changed at line 0
  left: 72.0 points last changed at line 0
  right: 72.0 points last changed at line 0
```

line 0 indicates that the value was set at program start up (i.e., it's the default value), or it was set by the user on the command line.

APPENDIX A: PLATYPUS COMMANDS (ALPHABETICAL ORDER)

(Note: The list of symbols and foreign characters appears after these commands.)

[]	New paragraph. (A blank line in text is equivalent.)
[\$MacroName]	Prints the text contained in the macro <code>MacroName</code> to the document.
[+b] [-b]	Turn on bold on or off
[+footer] [-footer]	Turn the footer on or off
[+i] [-i]	Turn on italics on or off
[+marginmirror]	Mirror the margins of the right page on the left page. Default: off; that is, all pages have the same margins.
[+st] [-st]	Turn strikethrough text on or off
[+u] [-u]	Turn on underlining on or off
[align:center]	Align text so that it's centered
[align:just]	Justified text: paragraph is aligned with both the left and right margins
[align:left]	Align text to the left margin
[align:right]	Align text to the right margin
[bmargin: ...]	Specify the bottom margin of a page. (Default: 1 inch; 2.54 cm)
[def:\$MacroName{Hi!}]	Defines a user-defined string or macro named <code>\$MacroName</code> containing the string <code>Hi!</code>
[dump: ...]	Write the value of a variable or group of variables to the console. Used for debugging Platypus documents.
[ff:typface-name]	Change to the specified typeface
[fsize: ...]	Change the size of the current font to the specified size.
[indent: ...]	Indent the first line of the following paragraph by the specified amount.
[leading: ...]	Specify the leading (space between lines).
[lmargin: ...]	Specify the left margin of a page. (Default: 1 inch; 2.54 cm)

<code>[noindent]</code>	Do not indent the first line of the current paragraph (if the command appears before any text has been written to the paragraph). If text has been written to the current paragraph, this command affects the indentation of the <i>next</i> paragraph, which is unlikely to be correct.
<code>[pageheight: ...]</code>	Specify the page height (for custom page size).
<code>[pagesize: ...]</code>	Page size. Applies to the next page to be rendered.
<code>[pagewidth: ...]</code>	Specify the page width (for custom page size).
<code>[paraindent:...]</code>	Indent paragraph from the left margin by ... units
<code>[paraindentR:...]</code>	Indent paragraph from the right margin by ... units
<code>[paraskip:...]</code>	Skip ... lines before start of next paragraph.
<code>[pg]</code>	Insert new page and skip to the top of the top of it.
<code>[rmargin: ...]</code>	Specify the right margin of a page. (Default: 1 inch; 2.54 cm.)
<code>[tmargin: ...]</code>	Specify the top margin of a page. (Default: 1 inch; 2.54 cm.)

[List of symbols and foreign characters goes here]

APPENDIX B: LICENSES

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Platypus uses several open-source packages, most notably, the excellent iText library for generating PDF files. The licenses and download information for all these packages are available in the \licenses directory of the installation.