

The `tesseract` Class *

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1 Introduction

This class files allows the production of matching documents describing parts of the Tesseract system.

2 Using the Class

To use this class, set `\documentclass{tesseract}` at the top of your document.

You will need to have the packages `geometry` and `color`, all part of the standard \LaTeX distribution, and `textpos`, available from CTAN [1], installed. If you wish to regenerate the documentation for this class (instructions for doing this may be found in `tesseract.ins`) then you will need the `todo` package, also available from CTAN, installed.

3 Class Options

`article` By default the `tesseract` class is based on the \LaTeX standard `article` class. The
`report` option `report` will make it use the `report` class as a base, allowing chapters. The
`article` option does nothing and is provided for completeness only.

4 Title Page Information

The preamble (before the `\begin{document}`) part of your \LaTeX source should contain all the document information that is to be printed on the title page. Apart from `\title`, all the document information commands are optional, just use the ones necessary for your document.

`\maketitle` `\maketitle` will print a full-page title page. `\shorttitle` will just print the
`\shorttitle` title of the document at the top of the first page. Use this when developing documents to save paper.

`\title` Set the document title with `\title`, any subtitle with `\subtitle`, and the
`\subtitle` class (core, compiler, code generator, etc.) with `\class`. The document status
`\class` (provisional, draft, etc.) may be set with `\status`. The command `\draft` is
`\status` shorthand for `\status{draft}`.

`\draft` Set the authors of the document with `\author`. Separate multiple names with
`\author`

*This document describes `tesseract` v0.1.1, dated 2005/03/04.

`\and.`

`\date` The `\date` command for this class is different to that used by standard L^AT_EX. Rather than a simple free-text argument, this version takes three arguments: the day, the month number (1–12), and the year. The default is today’s date.

`\version` Set the document version number with `\version`.

5 An Example Document

To do (1)

```
\documentclass{tesseract}

\title{Example Document}
\subtitle{An Exercise in Brevity}
\author{Asher Hoskins}

\date{12}{11}{2004}
\draft

\begin{document}
\maketitle
\section{A Very Short Document}
This document is extremely short.
\end{document}
```

6 Implementation

The document from this point on describes the implementation of `tesseract`. Users of the package who aren’t interested in how it works need read no further. No new functionality is described in this section.

6.1 Load the Base Class

This class takes the options `report` and `article` (default) to select which base class to use. Using a `report` base class provides chapters, using the `article` base class makes `\section` the highest level sectioning command.

```
1 \newcommand{\@classtype}{article}
2 \DeclareOption{article}{\renewcommand{\@classtype}{article}}
3 \DeclareOption{report}{\renewcommand{\@classtype}{report}}
4 \ProcessOptions\relax
5 \LoadClass{\@classtype}
```

6.2 Page Size

We assume only A4 documents need to be generated.

```
6 \RequirePackage[a4paper]{geometry}
```

6.3 Other Packages Required

The `textpos` package is used for laying out the title page. We use `color` and `graphicx` for the front page design.

```
7 \RequirePackage{color}
8 \RequirePackage[absolute]{textpos}
9 \RequirePackage{graphicx}
```

6.4 Document Information

For all this document information, a macro beginning with ‘@’ is used to hold the current value so that a default may be provided by this class file. Note that the document title is set with the standard `\title` macro from the underlying base class.

```
\@subtitle Set the document subtitle. Defaults to empty.
\subtitle 10 \newcommand{\@subtitle}{}
          11 \newcommand{\subtitle}[1]{\renewcommand{\@subtitle}{#1}}

\@class Set the document class, for example “Draft”. Default class is blank.
\class 12 \newcommand{\@class}{\mbox{}}
       13 \newcommand{\class}[1]{\renewcommand{\@class}{#1}}

\@status Set the document status (always in uppercase). \draft is shorthand for
\status \status{draft}.
\draft 14 \newcommand{\@status}{\mbox{}}
       15 \newcommand{\status}[1]{\renewcommand{\@status}{\uppercase{#1}}}
       16 \newcommand{\draft}{\status{draft}}

\and The \author macro is used to list all the authors, as in standard LATEX. Multiple
authors should be separated with \and. This expands to a comma when the
document is printed. Note the \unskip to remove the space that would otherwise
appear between the author’s name and the comma.
       17 \renewcommand{\and}{\unskip , }

\@version Set the version number of the document.
\version 18 \newcommand{\@version}{}
        19 \newcommand{\version}[1]{\renewcommand{\@version}{#1}}

\@monthname So that the date format is consistent and easier to work with in programs we
\@year redefine the standard LATEX \date. This now takes three arguments: day, month,
\@date and year. A formatted date is stored in \@date and the year in \@year. If no date
\date is given then the default is the current day. The \@monthname macro converts a
month number into its English name. This code is taken from the LATEX source.
       20 \newcommand{\@monthname}[1]{\ifcase #1 \or
       21     January\or February\or March\or April\or May\or June\or
       22     July\or August\or September\or October\or November\or December\fi}
       23 \newcommand{\@year}{\number\year}
       24 \renewcommand{\@date}{\number\day\ \@monthname{\month}\ \number\year}
       25 \renewcommand{\date}[3]{%
       26     \renewcommand{\@date}{#1 \@monthname{#2} #3}
       27     \renewcommand{\@year}{#3}
       28 }
```

6.5 Creating the Title Page

Nicely designed front pages gives all the Tesseract documentation a sense of cohesion and may possibly impress management types. The `textpos` package allows the positioning of items at absolute positions on the page.

We start by setting `textpos` to use a 16×16 grid with no coloured box backgrounds.

```
29 \TPGrid{16}{16}
30 \textblockcolour{}
```

Apparently people really liked the understated blue colour used on the ANS UbiComp 2004 poster, so here it is again.

```
31 \definecolor{ansblue}{rgb}{0.745,0.788,0.867}
```

`\shorttitle` To save paper when developing there's a very simple title macro: just the title of the document and a thin blue line. This is also used to start the document after a full title page has been printed.

```
32 \newcommand{\shorttitle}{
33   \begin{center}
34     \textsf{\Large\textbf{\@title}}}
35
36     \textcolor{ansblue}{\rule{\textwidth}{1pt}}
37   \end{center}
38 }
```

`\maketitle` The `\maketitle` macro is completely redefined to produce the titlepage.

```
39 \renewcommand{\maketitle}{%
40
41   \thispagestyle{empty}
42
43   \begin{textblock}{16}(0,0)
44     \textblockcolour{ansblue}
45     \vspace{15pt}
46     \hfill\textsf{\LARGE{Tesseract\ae\ \@class}}\hspace*{15pt}
47     \vspace*{15pt}
48   \end{textblock}
49
50   \begin{textblock}{14}(1,5)
51     \centering\noindent\textsf{\Huge\textbf{\@title}}}
52
53     \vspace{10pt}
54     \textsf{\Large\textbf{\@subtitle}}}
55
56     \vspace{40pt}
57     \textsf{\huge{\@author}}
58   \end{textblock}
59
60   \begin{textblock}{14}(1,14)
61     \noindent\textsf{\Huge\textbf{\textcolor{red}\@status}}}
62   \end{textblock}
63
64   \begin{textblock}{14}(1,15)
65     \noindent\textsf{\large{Version \@version \
66       \@date}}
```

```
67 \end{textblock}
```

Now we need to draw an invisible rule so that L^AT_EX knows that something's been placed on the page (textpos uses clever magic to place stuff) or it won't let us ask for a new page. The page number is reset to 1.

```
68 \rule{0pt}{1in}
```

```
69 \newpage
```

```
70 \setcounter{page}{1}
```

On the next page use `\shorttitle` to print another title before the document starts. The document author can decide whether or not they want a table of contents here.

```
71 \shorttitle
```

```
72 }
```

Change History

v0.0.1		v0.1.0	
General: Alpha release	1	General: Report and article options	
v0.0.2		added	1
General: Short title page macro		v0.1.1	
added	1	General: Subtitles added	1

References

- [1] The comprehensive T_EX archive network.
<http://www.ctan.org/>

To do...

- 1. (p. 2) How to avoid the extra blank line after the verbatim section? Normally you'd put the end verbatim on the last line of the verbatim section but if you do that here you end up with it in the example.tex file.