Benjamin McKay

The Willow Tree Book Class 1.02

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Preface

The Willow Tree Book class is a simplified derivative of the memoir book class. I use it for my lecture notes. The document you are reading is in the Willow Tree Book class.
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Chapter 1

Here is a typical book using the Willow Tree Book class:

\documentclass{willowtreebook}
\Title{Odyssey}
\Author{Homer}
\BibliographyFile{odyssey}
% The name of the .bib file, without file extension.
\begin{document}
\chapter{Preface}
This is the preface to my book.
\afterpreface
\chapter{We meet Odysseus}
Tell me, O muse, of that ingenious hero
% The rest of the text goes here.
Thus spoke Minerva, and Ulysses obeyed her gladly. Then Minerva assumed
the form and voice of Mentor, and presently made a covenant of peace
between the two contending parties.
\par
\bigskip
\noindent
THE END
% End the document without loading the bibliography
% or the index, or the list of notation.
\end{document}

Compile with \texttt{latex} or \texttt{pdflatex}. 

Definitions

We can define a term like hamster, or say that the term hamster appears again later.

Compile, for a book called filename.tex, with

\makeindex filename

We add notation like when we use a variable called $\omega$, we put it in the list of notation.

If you use notation, compile with

\makeindex -s notation.gst -o not.gls not.glo

Problems

2.1 What is the point of your life?

In problem 2.1, we can clearly see ...

% We add problems by:
\begin{problem}{label.for.the.first.problem}
What is the point of your life?
\end{problem}
% and answers by:
\begin{answer}{label.for.the.first.problem}
Your life is pointless.
\end{answer}
In problem~\ref{problem:label.for.the.first.problem}, we can clearly see ...
Chapter 3

Citations

Our bibliography file looks like

\begin{verbatim}
@book {Homer:Iliad,
    AUTHOR = {Homer},
    TITLE = {The \{I\}liad},
    EDITION = {Third},
    NOTE = {An epic poem in dactylic hexameter, translated from the Greek by A. Guy},
    PUBLISHER = {McHaw-Grill Book Co., New Cork},
    YEAR = {1978},
    PAGES = {xi+331},
    ISBN = {0-07-000657-1},
}
\end{verbatim}

We can cite works from the bibliography, like Homer\cite{Homer:Iliad}, p. 12.

Compile with \texttt{bibtex}.

Theorems

You have the usual theorem environments, like \texttt{amsthm}.

\textbf{Theorem 3.1} (Pythagoras). In any triangle with sides of lengths $a, b, c$, $a^2 + b^2 = c^2$ just when the angle opposite the side of length $c$ is a right angle.

\begin{verbatim}
\begin{theorem}[Pythagoras]
In any triangle with sides of lengths $(a, b, c)$,
$(a^2+b^2=c^2)$ just when the angle opposite the
side of length $(c)$ is a right angle.
\end{theorem}
\end{verbatim}
Examples

I often want to present an example, and make clear where it starts and stops.

\begin{example}
The integral
\[
\int e^{x^2} x \, dx
\]
is evaluated by substituting \( u = x^2 \), so
\[
\int e^{x^2} x \, dx = \int e^u \frac{du}{2}.
\]
\end{example}

Preambles

We can put some \LaTeX\ code before the hints:

\begin{verbatim}
\RenewDocumentCommand\hintsPreamble{}{
\par\noindent\textit{When you are describing, \ A shape, or sound, or tint; \ Don't state the matter plainly, \ But put it in a hint; \
And learn to look at all things, \ With a sort of mental squint.}
\par\noindent---\ {Lewis Carroll}}
\end{verbatim}
or before the bibliography:

\begin{verbatim}
\RenewDocumentCommand\bibliographyPreamble{}{
\par\noindent\textit{If those books are in agreement with the Quran, we have no need of them; and if these are opposed to the Quran, destroy them.}
\par\noindent---\ {Omar}}
\end{verbatim}
Hints

When you are describing,
A shape, or sound, or tint;
Don’t state the matter plainly,
But put it in a hint;
And learn to look at all things,
With a sort of mental squint.
— Lewis Carroll

2.1. Your life is pointless.
Bibliography

If those books are in agreement with the Quran, we have no need of them; and if these are opposed to the Quran, destroy them.
— Omar

List of notation

\( \omega \)  A variable called \( \omega \), 3