Biblet

A portable BibTeX bibliography style for generating highly customizable XHTML

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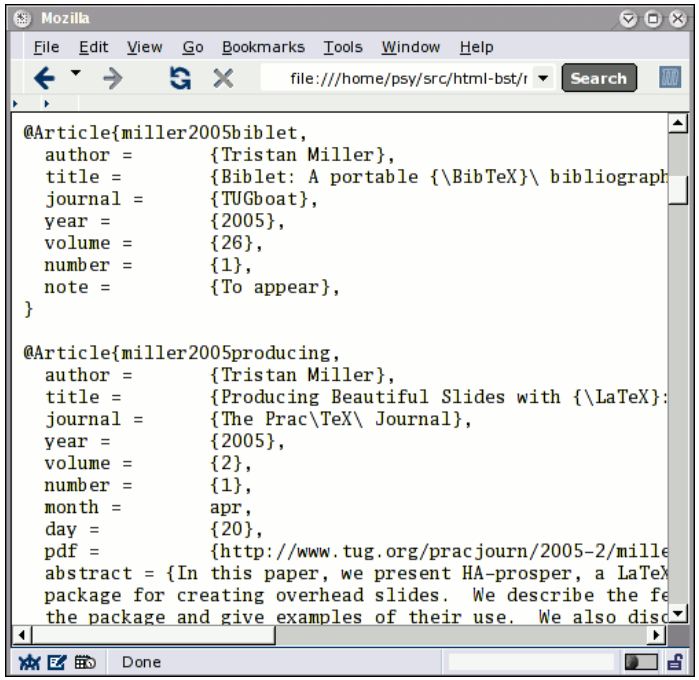
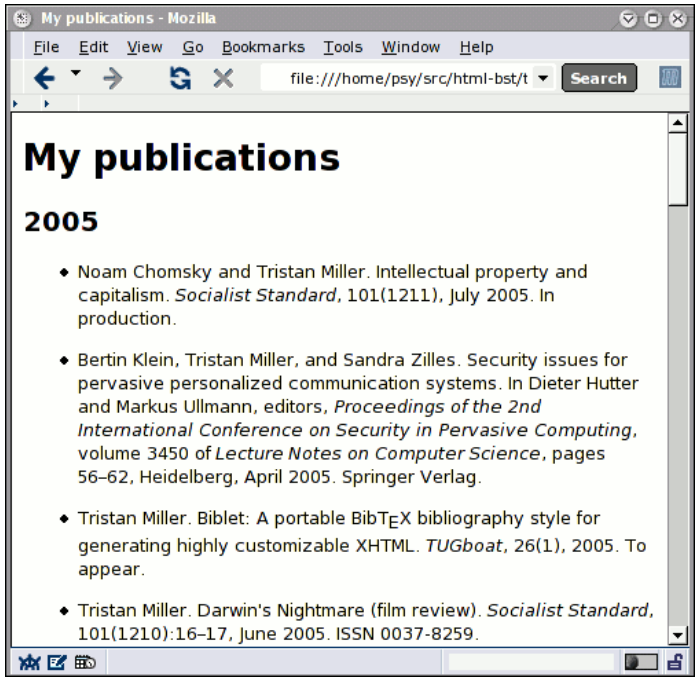
How can I put a list of my publications on my website?





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- manually compose HTML
  - fine-tuned control of formatting
  - difficult to change bibliography style
  - must maintain separate BibTeX and HTML files

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  - fine-tuned control of formatting
  - difficult to change bibliography style
  - must maintain separate BibTeX and HTML files
- convert LaTeX to HTML with, *e.g.*, `latex2html`
  - easy to change bibliography style
  - poor control of formatting
  - poor handling of special characters

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  - fine-tuned control of formatting
  - difficult to change bibliography style
  - must maintain separate BibTeX and HTML files
- convert LaTeX to HTML with, *e.g.*, `latex2html`
  - easy to change bibliography style
  - poor control of formatting
  - poor handling of special characters
- convert BibTeX to HTML with, *e.g.*, `bibtex2html` or `bib2html`
  - difficult to change bibliography style
  - poor control of formatting
  - poor handling of special characters

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biblet [from *Bible* + *-et*, diminutive]: a small library

- Biblet is a set of BibTeX bibliography styles (`bst` files) which generate (X)HTML directly from BibTeX databases
- highly portable: requires only BibTeX
- appearance is highly customizable: all formatting controlled with CSS
- special text characters converted to Unicode or HTML entities whenever possible
- customizable graphical hyperlinks to PostScript, PDF, DVI, and HTML versions

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- Biblet is currently in active development

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- Biblet is currently in active development
- not yet stable, but very much usable!

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- Biblet is currently in active development
- not yet stable, but very much usable!
- in this talk:
  - how Biblet was developed
  - how to use Biblet
  - examples of beautiful Biblet bibliographies

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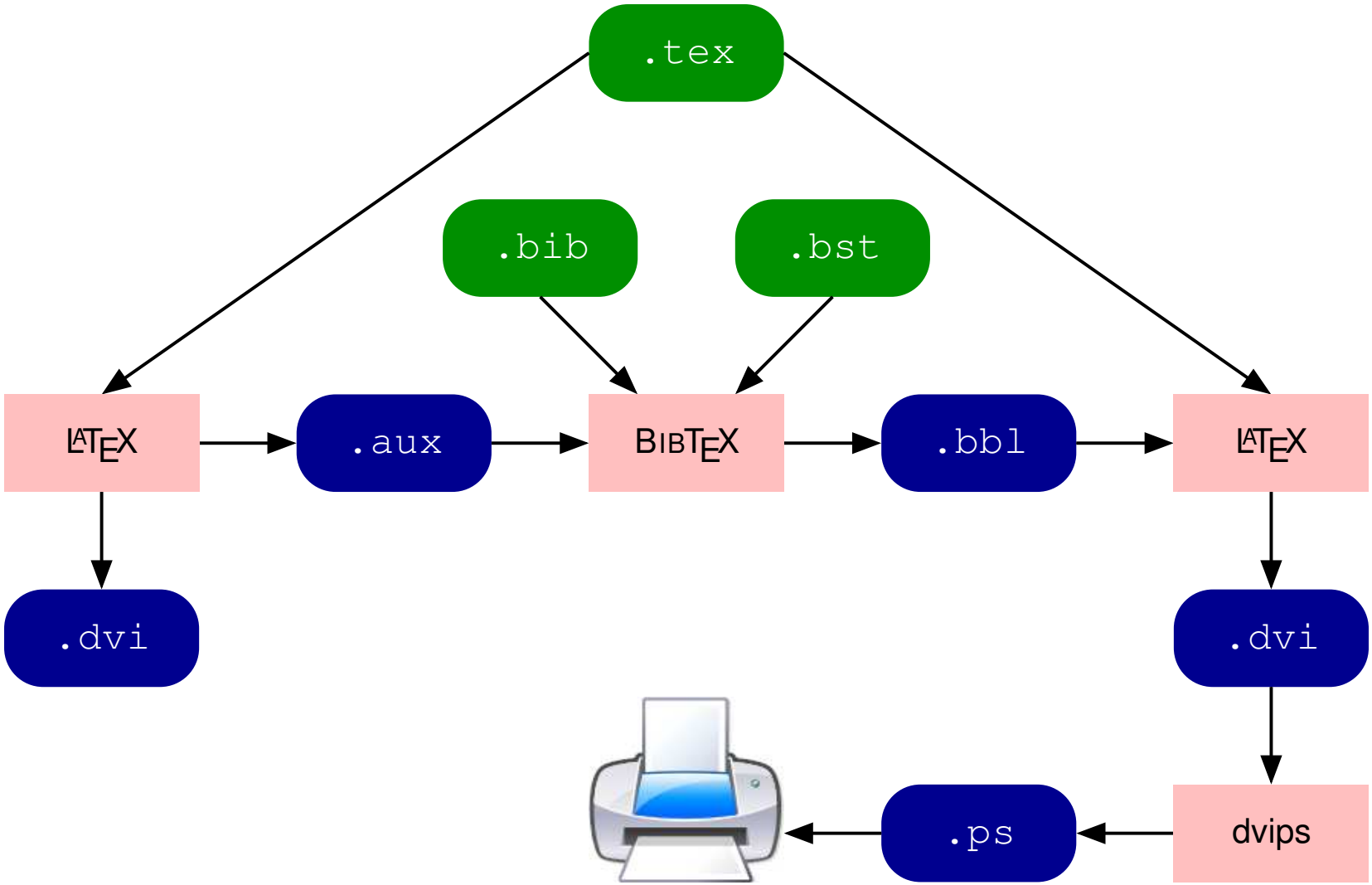

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```
\documentclass{article}

\begin{document}

I wrote \cite{miller2002why}.

\bibliographystyle{plain}
\bibliography{foo}

\end{document}
```

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```
@Article{miller2002why,
  author =       {Tristan Miller},
  title =        {Why {I} Will Never Have A Girlfriend},
  journal =      {The Annals of Improbable Research},
  year =         {2002},
  volume =       {8},
  number =       {3},
  pages =        {13-17},
}
```

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```
\relax
\citation{miller2002why}
\bibstyle{plain}
\bibdata{foo}
```

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```
\begin{thebibliography}{1}

\bibitem{miller2002why}
Tristan Miller.
\newblock Why {I} will never have a girlfriend.
\newblock {\em The Annals of Improbable Research}, 8(3):13--17,
     2002.

\end{thebibliography}
```

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I wrote [1].

References

[1] Tristan Miller. Why I will never have a girlfriend. *The Annals of Improbable Research*, 8(3):13–17, 2002.

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BibTeX uses a `.bst` style to convert `foo.bib` into the completely different-looking `foo.bbl` file in LaTeX syntax:

```
\begin{thebibliography}{1}

\bibitem{miller2002why}
Tristan Miller.
\newblock Why {I} will never have a girlfriend.
\newblock {\em The Annals of Improbable Research}, 8(3):13--17,
     2002.

\end{thebibliography}
```

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Therefore, why not make a `.bst` style to convert `foo.bib` into a `foo.bbl` file in HTML syntax?

```
<html>
  <head><title>My publications</title></head>
  <body>
    <div class="bibitem">
      Tristan Miller.
      Why I will never have a girlfriend.
      <em>The Annals of Improbable Research</em>,
      8(3):13&ndash;17, 2002.
    </div>
  </body>
</html>
```

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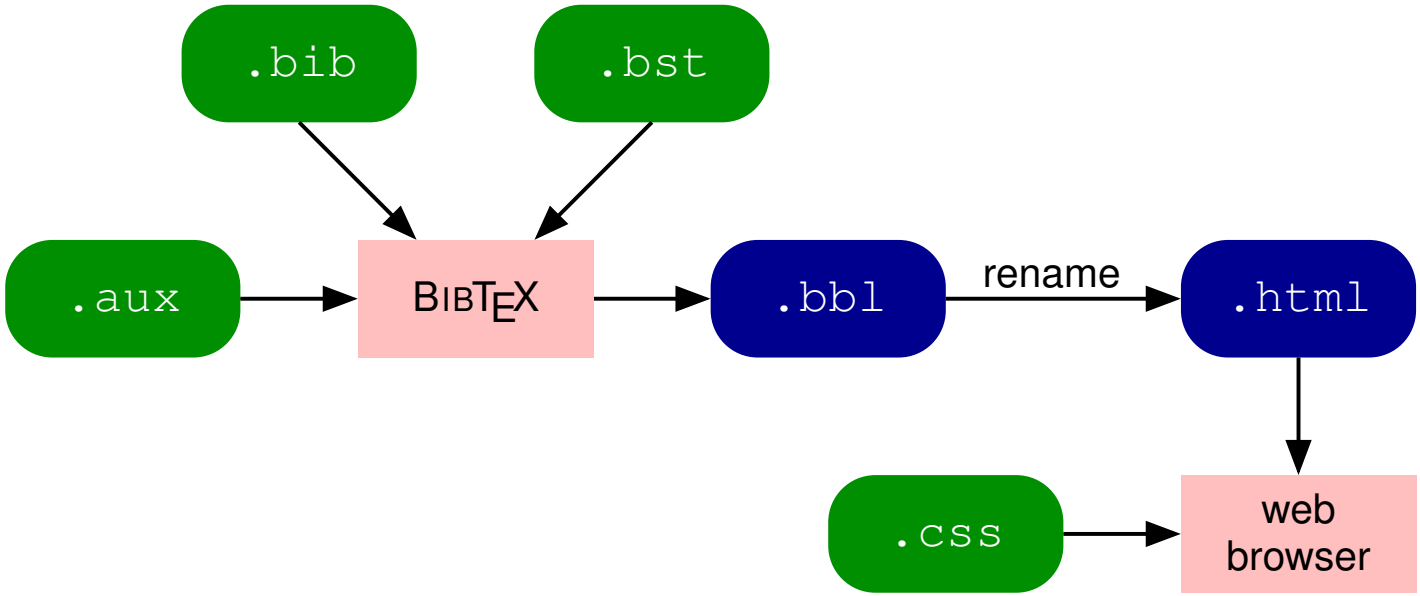

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- Rather than creating a `.tex` file, the user creates a `.aux` file directly.
- The user types a `\citation` command for each bibliography item, or `\citation{*}` to include all items.
- For `\bibstyle`, the user specifies one of the Biblet `.bst` files.

```
\relax
\citation{miller2002why}
\bibstyle{blplain}
\bibdata{foo}
```

- The user runs BibTeX on the `.aux` file as usual.
- The output `.bbl` is actually an HTML document; it can be renamed and opened in any web browser.

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foo.bbl

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```
<!DOCTYPE html PUBLIC '-//W3C//DTD XHTML 1.0 Strict//EN'
  'http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd'>
<html xmlns='http://www.w3.org/1999/xhtml' xml:lang='en' lang='en'>
  <head><title>My publications</title></head>
  <body>
    <h1>My publications</h1>
    <div class='bib-bibliography'>
      <h2 class='bib-year' id='year-2002'>2002</h2>
        <ul>
          <li class='bib-bibitem' id='cite-miller2002why'>
            <div class='bib-article'>
              <p>
                <span class='bib-author'>Tristan Miller.</span>
                <span class='bib-title'>Why I will never have a girlfriend.</span>
                <em>The Annals of Improbable Research</em>, 8(3):13&ndash;17, 2002.
              </p>
            </div>
          </li>
        </ul>
    </div>
  </body>
</html>
```

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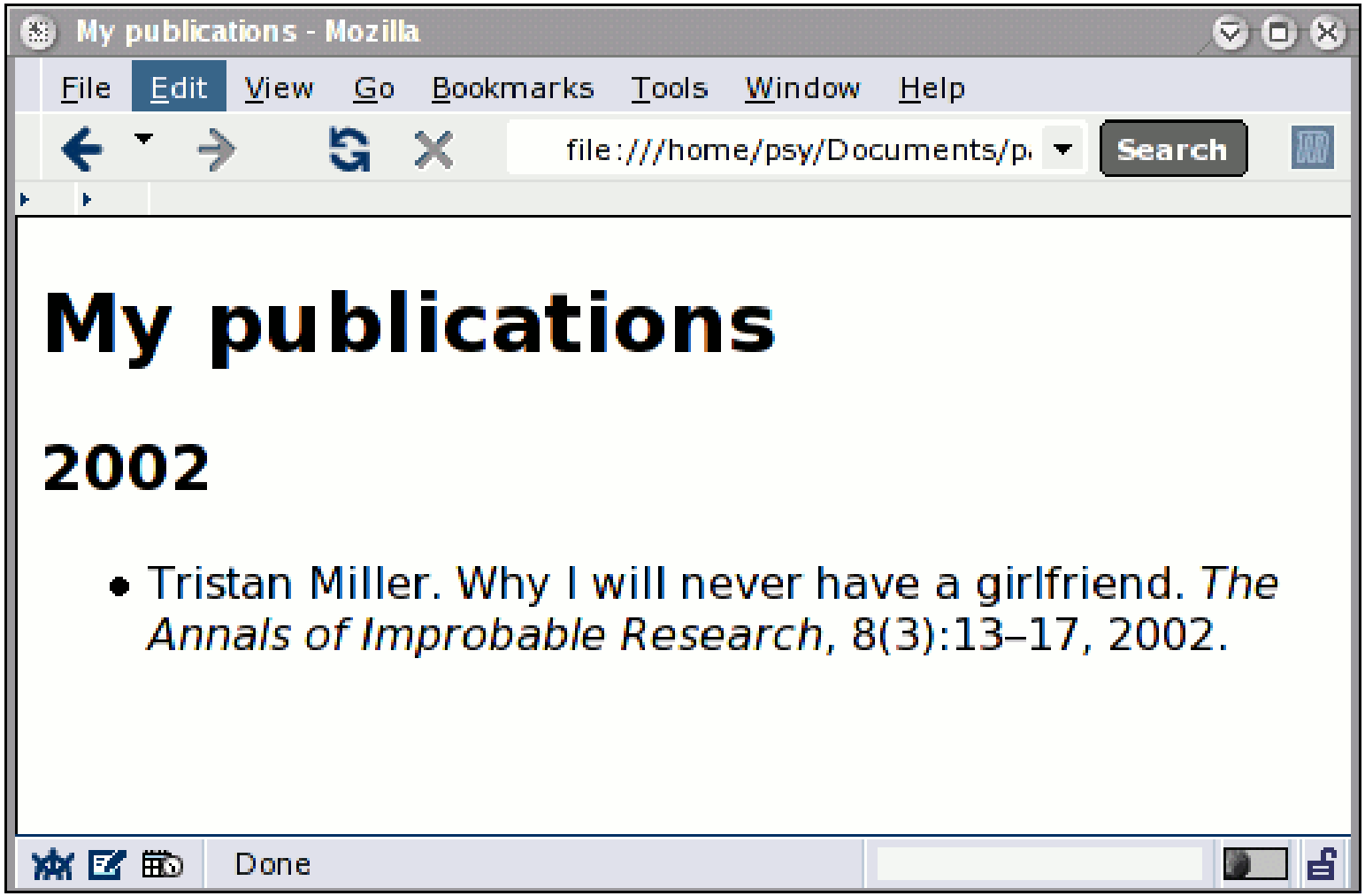

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Sprucing things up

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- Because virtually every element of a bibliography item is encapsulated in an HTML element, it is easy to apply formatting styles with CSS.
- A `.bst` style can also output arbitrary HTML at the beginning or end of a bibliography, or even inbetween entries.
- The only problem: there is no way to pass arguments to BibTeX, so any formatting that cannot be done in CSS must be done by editing the `.bst` file or resulting `.html` file.

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foo.css

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```
.bib-article {
  background-color: #ffaaaa;
}

.bib-author {
  font-weight: bold;
}

.bib-article em {
  font-style: normal;
  text-decoration: underline;
}
```

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foo.html with foo.css

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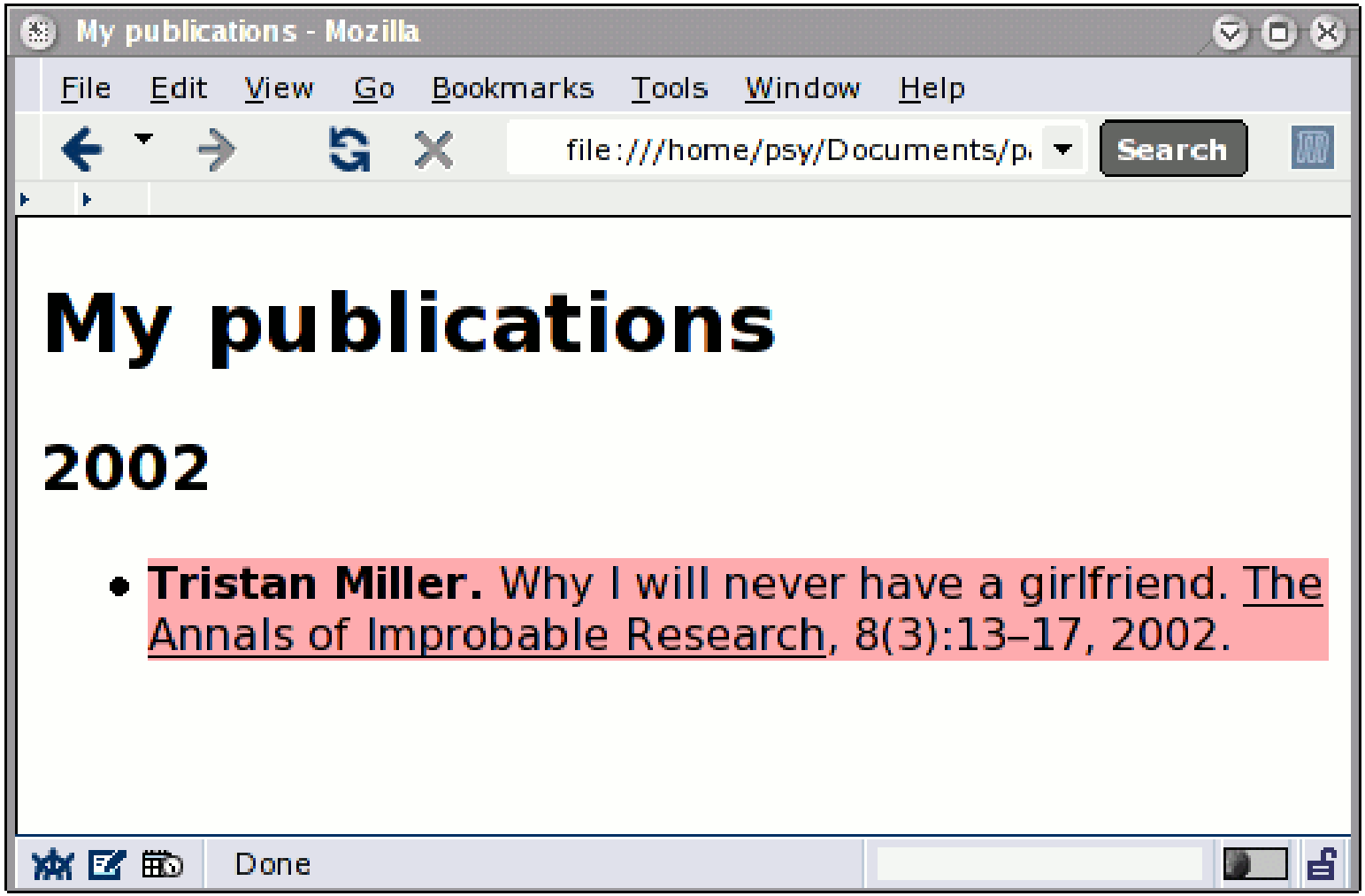

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- I started by going through Patashnik's `plain.bst` and replacing any outputted LaTeX markup with HTML markup.

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- Added in support for some custom BibTeX fields (`ps`, `pdf`, `url`) useful for hyperlinks.

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- Added some custom sorting routines typical of author publication lists (sort by type, by year, *etc.*)

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- Added in even more HTML markup so that appearance could be customized with CSS. (Lots of work!)
- Added in support for some custom BibTeX fields (`ps`, `pdf`, `url`) useful for hyperlinks.
- Added some custom sorting routines typical of author publication lists (sort by type, by year, *etc.*)
- Added routines to convert LaTeX characters to Unicode or HTML entities.

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Mapping LaTeX to HTML/Unicode

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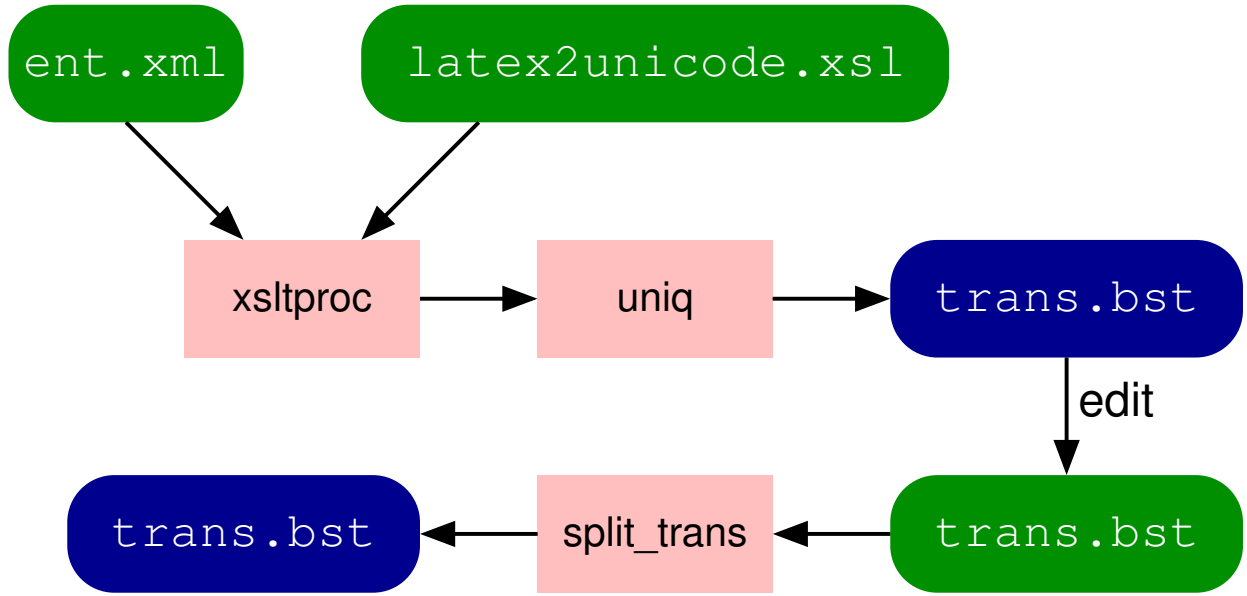

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Sample entry from `ent.xml`

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```
<char pos="127">
  <entity name="para" set="iso-8879-num">
    <desc>=pilcrow (paragraph sign)</desc>
  </entity>
  <entity name="para" set="html4-lat1">
    <desc>pilcrow sign = paragraph sign</desc>
  </entity>
  <unicode value="00B6">
    <desc>PILCROW SIGN</desc>
  </unicode>
  <latex>
    <seq>\P</seq>
    <seq req="textcomp">\textparagraph</seq>
    <seq req="textcomp">\textpilcrow</seq>
  </latex>
  <plain value="B6" set="iso-8859-1" glyph="¶"/>
</char>
```

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Result after XSL transformation

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```
"\textfractionsolidus"  "&frasl;"  find.replace
"\textparagraph"  "&para;"  find.replace
"\texttrademark"  "&trade;"  find.replace
"\quotedblbase"  "&ldquor;"  find.replace
"\textpilcrow"  "&para;"  find.replace
"\textrecipe"  "&#x211E;"  find.replace
"\checkmark"  "&#x2713;"  find.replace
"\copyright"  "&copy;"  find.replace
"\'{A}"  "&Aacute;"  find.replace
"\'{C}"  "&#x0106;"  find.replace
"\'{E}"  "&Eacute;"  find.replace
"---"  "&mdash;"  find.replace
"\TH"  "&THORN;"  find.replace
"\aa"  "&aring;"  find.replace
"\&"  "&amp;"  find.replace
"\P"  "&para;"  find.replace
"~"  " "  find.replace
```

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- It includes some glyphs (*e.g.*, fi, ffi) we'd rather not convert to HTML/Unicode.

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- It includes some glyphs (*e.g.*, fi, ffi) we'd rather not convert to HTML/Unicode.
- It is missing some other glyphs we would indeed like to convert (*e.g.*, the TeX logo, `\slash`).

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- It is missing some other glyphs we would indeed like to convert (*e.g.*, the TeX logo, `\slash`).
- We end up with hundreds of lines of `bst` code, but BibTeX can handle only 100 tokens per function.

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- It includes some glyphs (*e.g.*, fi, ffi) we'd rather not convert to HTML/Unicode.
- It is missing some other glyphs we would indeed like to convert (*e.g.*, the TeX logo, `\slash`).
- We end up with hundreds of lines of `bst` code, but BibTeX can handle only 100 tokens per function.
- BibTeX has no built-in string search-and-replace function.

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Writing split_trans

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```
i=1
func=1
words=0
lines=$(wc -l <$tmpfile)
echo "FUNCTION␣{latex2html.$func}"
echo "{"
while [ $i -le $lines ]
do
     newwords=$(sed -n "${i}p" $tmpfile | wc -w)
     if [ $((words + newwords)) -ge 100 ]
     then
         words=0
         let func=func+1
         echo -e "}\n\nFUNCTION␣{latex2html.$func}\n{"
     fi
     sed -n "${i}p" $tmpfile
     let i=i+1
     let words=words+newwords
done
echo -e "}\n"
```

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```
STRINGS{replace find text}
INTEGERS {find_length}
FUNCTION {find.replace}
{ 'replace :=
  'find :=
  'text :=
  find string.length 'find_length :=
  ""
    { text empty$ not }
    { text #1 find_length substring$ find =
        { replace *
          text #1 find_length + global.max$ substring$ 'text :=
        }
        { text #1 #1 substring$ *
          text #2 global.max$ substring$ 'text :=
        }
      if$
    }
  while$
}
```

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