

The **iso4ht** **TeX4ht** package*

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2000/01/20

Abstract

The **iso4ht** package, in conjunction with **TeX4ht** can be used to convert L^AT_EX **iso** class documents into HTML tagged documents.

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1 Introduction

The **iso4ht** package can be used in conjunction with the **TeX4ht** system to convert L^AT_EX **iso** class documents into HTML tagged documents. The **iso** class is for typesetting ISO standard documents [Wil96].

*This file has version number v0.1, last revised 2000/01/20.

Section 2 describes the package and commented source code for the package is in Section 3.

This manual is typeset according to the conventions of the L^AT_EX DOCUMENTSTRIP utility which enables the automatic extraction of the L^AT_EX macro source files [GMS94].

1.1 Acknowledgement

Development of the **iso4ht** package would not have been possible without the help and expertise of Eitan Gurari, and in particular his willingness to put up with the many questions I asked.

2 The **iso4ht** package

The TeX4ht system has been developed by Eitan Gurari (see Chapter 4 and Appendix B in [GR99]. It is a general purpose conversion system to convert L^AT_EX tagged documents into HTML (or other *ML) tagged documents. TeX4ht can be obtained from <http://www.cis.ohio-state.edu/~gurari/TeX4ht/mn.html>. The **iso4ht** package is not guaranteed to work with versions of TeX4ht earlier than mid-January 2000. At the time of writing, the default TeX4ht distribution was dated mid-1999. The latest version of TeX4ht is obtainable from <http://www.cis.ohio-state.edu/~gurari/TeX4ht/bugfixes.html>.

To use the **iso4ht** package, just process the L^AT_EX document as you would any other under TeX4ht. That is, either call the **ht** script a document starting like:

```
\documentclass[...]{isov2}
\usepackage[...]{tex4ht}
...
```

or call the **htlatex** script on a document without the **\usepackage[...]{tex4ht}** line.

3 The package code

The following code is based on **article.4ht**, **html0.4ht**, **html32.4ht** and **html4.4ht**, all written by Eitan Gurari.

Most of the necessary work already exists in **latex.4ht**, which sets up the L^AT_EX kernel code. **article.4ht** provides the setup for the **article** class, and **html0.4ht**, **html32.4ht** and **html4.4ht** provide the HTML option-related configurations.

The **iso** class was originally based on the **article** class, so **isov2.4ht** is in turn based on **article.4ht** (although little code is actually reused). The HTML option-related configurations are embedded in **isov2.4ht** instead of being supplied as separate files.

Announce the name and version of the package.

1 <*usc>

```

2 \typeout{[isov2.4ht 2000/01/20 version v0.1]}
3

```

3.1 Setup and hooks

The first major part of the code deals with setting up for configuring the L^AT_EX commands and environments, which forms the second major portion of the code.

Setting up may involve adding hooks into commands, either by redefining them or, in simpler cases prepending and/or appending code before and/or after the original code. It can also involve specifying that commands are configurable.

3.1.1 Table of contents

What follows is a revised version of the `article.4ht` setup for the `\tableofcontents`, `listoffigures` and `\listoftables` commands. Practically all of the revision has to do with replacing article sectioning commands (i.e., `\section`, `\subsection`, etc.) with the iso sectioning commands (i.e., `\clause`, `\sclause`, etc.).

```

4 \NewConfigure{listof}{6}
5
 The revised version of article.4ht \tableofcontents configuration setup.
Do the tocdepth setup.
6 \def\tableofcontents{\futurelet\temp\TOC}
7 \edef\TOC{%
8   \noexpand\ifx[\noexpand\temp
9     \noexpand\expandafter\noexpand\TableOfContents
10   \noexpand\else
11     \noexpand\Auto:ent{%
12       \ifnum1>\c@tocdepth\else clause,fibicl@use,likefibicl@use,normannex,infannex,repannex,\fi
13     \ifnum2>\c@tocdepth\else sclause,\fi
14     \ifnum3>\c@tocdepth\else ssclause,\fi
15     \ifnum4>\c@tocdepth\else sssclause,\fi
16     \ifnum5>\c@tocdepth\else sssscclause,\fi
17     \ifnum6>\c@tocdepth\else sssssclause,\fi
18     UnDFExyz}%
19   \noexpand\fi}
20
21 \def\Auto:ent#1{%
22   \edef\auto:toc{\noexpand\TableOfContents[\ifx\auto:toc\UnDef
23     #1\else\auto:toc\fi]\auto:toc
24   \global\let\auto:toc\UnDef }
25
Specify the various kinds of entries in the ToC.
26 \def\tocnormannex#1#2#3{\par\annexname\ \toc:num{annex}{#1 (\normative{name})}{#2}\par}%
27 \def\toclikenormannex#1#2#3{\par\SPAN{likenormannexToc}{#2}\par}%
28 \def\tocinfnannex#1#2#3{\par\annexname\ \toc:num{infannex}{#1 (\informativename)}{#2}\par}%
29 \def\toclikeinfnannex#1#2#3{\par\SPAN{likeinfnannexToc}{#2}\par}%
30 \def\tocrepannex#1#2#3{\par\annexname\ \toc:num{annex}{#1}{#2}\par}%

```

```

31 \def\toclikerepannex#1#2#3{\par\:SPAN{likerepannexToc}{#2}\par}%
32 \def\tocfibicl@use#1#2#3{\par\:SPAN{fibicl@useToc}{#2}\par}%
33 \def\toclikefibicl@use#1#2#3{\par\:SPAN{likefibicl@useToc}{#2}\par}%
34 \def\tocclause#1#2#3{\par\toc:num{clause}{#1}{#2}\par}%
35 \def\toclikeclause#1#2#3{\par\:SPAN{likeclauseToc}{#2}\par}%
36 \def\tocsclause#1#2#3{\par\ \toc:num{sclause}{#1}{#2}\par}%
37 \def\toclikesclause#1#2#3{\par\ \:SPAN{likesclauseToc}{#2}\par}%
38 \def\tocssclause#1#2#3{\par
39     \ \ \ \toc:num{ssclause}{#1}{#2}\par}
40 \def\toclikessclause#1#2#3{\par
41     \ \ \ \:SPAN{likessclauseToc}{#2}\par}
42 \def\tocsssclause#1#2#3{\par\ \ \toc:num{ssscclause}{#1}{#2}\par}%
43 \def\toclikesssclause#1#2#3{\par\ \ \ \:SPAN{likesssclauseToc}{#2}\par}%
44 \def\tocssssclause#1#2#3{\par
45     \ \ \ \ \ \toc:num{ssssclause}{#1}{#2}\par}
46 \def\toclikessssclause#1#2#3{\par
47     \ \ \ \ \ \:SPAN{likessssclauseToc}{#2}\par}
48 \def\tocsssssclause#1#2#3{\par
49     \ \ \ \ \ \ \ \toc:num{sssssclause}{#1}{#2}\par}
50 \def\toclikesssssclause#1#2#3{\par
51     \ \ \ \ \ \ \ \ \:SPAN{likesssssclauseToc}{#2}\par}

```

There is also a special entry to cater for the `\title` command (see page 7).

```

52 \def\toctitleclause#1#2#3{\par\toc:num{titleclause}{#1}{#2}\par}%
53 \def\tocliketitleclause#1#2#3{\par\:SPAN{liketitleclauseToc}{#2}\par}%
54

```

The next bit is a straight copy of original TeX4ht code.

```

55 \def\toc:num#1#2#3{\def\temp{#1#2}\:SPAN{#1Toc}{\ifx \temp\empty \else
56     #2 \fi #3}}
57 \def\tocs{\noexpand\tableofcontents}
58 \pend:defIII\addcontentsline{%
59     \def\temp{##1}\def\tempa{toc}\ifx \temp\tempa
60     \gHAdvance\TitleCount 1 \fi }
61 \def\dottedtocline#1#2#3#4#5{\hbox{\def\numberline##1{\e:listof
62         ##1\f:listof}\c:listof#4\d:listof}\ignorespaces}
63

```

Setup the `\@starttoc` command.

```

64 \def\@starttoc#1{%
65     \begingroup
66     \makeatletter \Configure{cite}{}{}%
67     \def\temp{#1}\def\tempa{toc}%
68     \a:listof\par
69     \@input{\jobname.\ifx \temp\tempa \else \tempa\fi}%
70     \b:listof
71     \if@files
72         \expandafter\expandafter\csname
73             newwrite\endcsname\csname tf@#1\endcsname
74         \immediate\openout \csname tf@#1\endcsname \jobname.#1\relax
75     \fi

```

```

76      \global\@nobreakfalse
77  \endgroup}
78

```

The next chunk of code only applies for HTML.

```

79 \ifHTML
80   \NewConfigure{tableofcontents*}[1]{\edef\auto:toc{\#1}%
81   \ifx \au:StartSec\UnDef
82     \let\au:StartSec\StartSec
83     \def\StartSec{\tableofcontents
84       \global\let\auto:toc\UnDef \StartSec}
85     \pend:def\tableofcontents{\gdef\StartSec{\au:StartSec}}
86   \fi
87 }
88

```

Define the various levels at which the document may be cut into separate files (\CutAt) and at which points a ToC may be produced (\TocAt).

NOTE: This may require modification to deal with the \title.

Cut at the clause (and annex) level.

```

89 \def\tempa{
90   \CutAt{clause,likeclause,%
91     normannex,infannex,repannex,fibicl@use,likefibicl@use}
92   \CutAt{likeclause,clause,%
93     normannex,infannex,repannex,fibicl@use,likefibicl@use}
94   \Configure{tableofcontents*}{clause,likeclause,%
95     normannex,infannex,repannex,fibicl@use,likefibicl@use}
96 }
97

```

Cut at the clause and subclause levels.

```

98 \def\tempb{
99   \TocAt*{clause,/likeclause,sclause,likesclause,%
100    normannex,infannex,repannex,fibicl@use,likefibicl@use}
101   \TocAt*{likeclause,/clause,sclause,likesclause,%
102    normannex,infannex,repannex,fibicl@use,likefibicl@use}
103   \CutAt{clause,likeclause,%
104     normannex,infannex,repannex,fibicl@use,likefibicl@use}
105   \CutAt{likeclause,clause,%
106     normannex,infannex,repannex,fibicl@use,likefibicl@use}
107   \Configure{tableofcontents*}{clause,likeclause,sclause,likesclause,%
108     ssclause,likessclause,%
109     normannex,infannex,repannex,fibicl@use,likefibicl@use}
110 }
111

```

Cut at the clause, subclause, and subsubclause levels.

```

112 \def\tempc{
113   \TocAt*{clause,/likeclause,sclause,likesclause,ssclause,likessclause,%
114    normannex,infannex,repannex,fibicl@use,likefibicl@use}
115   \TocAt*{likeclause,/clause,sclause,likesclause,ssclause,likessclause,%

```

```

116      normannex,infannex,repannex,fibicl@use,likefibicl@use}
117      \CutAt{clause,likeclause,sclause,likesclause,%
118      normannex,infannex,repannex,fibicl@use,likefibicl@use}
119      \CutAt{likeclause,clause,sclause,likesclause,%
120      normannex,infannex,repannex,fibicl@use,likefibicl@use}
121      \Configure{tableofcontents*}{clause,likeclause,sclause,likesclause,%
122      ssclause,likessclause,sssclause,likesssclause,%
123      normannex,infannex,repannex,fibicl@use,likefibicl@use}
124 }
125

```

Cut at the clause, subclause, subsubclause, and subsubsubclause levels.

```

126 \def\tempd{%
127   \TocAt*{clause,/likeclause,sclause,likesclause,ssclause,likessclause,%
128   sssclause,likesssclause,%
129   normannex,infannex,repannex,fibicl@use,likefibicl@use}
130   \TocAt*{likeclause,/clause,sclause,likesclause,ssclause,likessclause,%
131   sssclause,likesssclause,%
132   normannex,infannex,repannex,fibicl@use,likefibicl@use}
133   \CutAt{clause,likeclause,sclause,likesclause,ssclause,likessclause,%
134   normannex,infannex,repannex,fibicl@use,likefibicl@use}
135   \CutAt{likeclause,clause,sclause,likesclause,ssclause,likessclause,%
136   normannex,infannex,repannex,fibicl@use,likefibicl@use}
137   \Configure{tableofcontents*}{clause,likeclause,sclause,likesclause,%
138   ssclause,likessclause,sssclause,likesssclause,%
139   sssclause,likesssclause,%
140   normannex,infannex,repannex,fibicl@use,likefibicl@use}
141 }
142

```

Now pick the cut levels appropriate for the cutting option. Option 4 generates the most cuts (down to subsubsubclauses) and option 1 one the least (clauses and annexes only).

```

143 \CheckOption{4}
144   \if:Option
145     \tempa \tempb \tempc \tempd
146   \else\CheckOption{3}
147     \if:Option
148       \tempa \tempb \tempc
149     \else\CheckOption{2}
150       \if:Option
151         \tempa \tempb
152       \else\CheckOption{1}
153         \if:Option
154           \tempa
155         \fi
156       \fi
157     \fi
158   \fi
159

```

```

160 \fi % end ifHTML
161
That ends the HTML specific code.
\listoffigures
\listoftables 162 \pend:def\listoffigures{\begingroup \a:listoffigures
163   \def\@starttoc{\:tableofcontents[lof]\:gobble}}
164 \append:def\listoffigures{\b:listoffigures \endgroup}
165 \pend:def\listoftables{\begingroup \a:listoftables
166   \def\@starttoc{\:tableofcontents[lot]\:gobble}}
167 \append:def\listoftables{\b:listoftables \endgroup}
168
169 \NewConfigure{listoffigures}{2}
170 \NewConfigure{listoftables}{2}
171
172 \def\toclot#1#2#3{\par\ \toc:num{table}{#1}{#2}\par}
173 \def\toclof#1#2#3{\par\ \toc:num{figure}{#1}{#2}\par}
174

```

3.1.2 Sectioning commands

This part of the code provides the setup for the sectioning commands.

For an ISO document, the Title comes after the ToC, Foreword and Introduction. The `iso \title` command should really end any previous sectioning commands, and the easiest way to manage this seems to be by redefining the `\title` command in terms of a sectioning command. In order to do this, some new commands are required and some `iso` commands redefined.

Eventually, it is the sectioning command that gets configured instead of the `\title` command. Another reason for doing things this way is that elsewhere, for a package under the `iso` class, I will be configuring a different `\title` command and I will be able to use this as a basis for that configuration.

These require redefining as, for reasons I don't understand, the system falls over when it tries to process the `iso \isitemptystring` command. This is replaced by a more direct test.

```

175 \renewcommand{\introelement}[1]{\ifx\empty#1\else {#1 ---\newline}\fi}
176 \renewcommand{\complement}[1]{\ifx\empty#1\else { ---\newline #1}\fi}
177

```

`\titleclause` A 'clause' for typesetting (in TeX4ht only) the title. This should make no entry in the ToC. There is no typeset number, so life is a bit simpler than when normally defining sectioning commands.

```

178 \newcommand{\titleclause}{%
179   \@startsection{titleclause}{100}% large level to avoid adding to ToC
180   {\z@}%
181   {\beforecskip}%
182   {\aftercskip}%
183   {\raggedright\Tfont\bfseries}}
184

```

```
\title      Now redefine the original \title command in terms of \titleclause*.
```

```
185 \renewcommand{\title}[3]{%
186   \setcounter{clause}{0}
187   \gdef\thetitle{\introelement{#1} %
188                 \mainelement{#2} %
189                 \complement{#3}}
190   \titleclause*{\thetitle}
191 }
```

Do the \title ‘clause’ hooks.

```
192 \let\no@titleclause\titleclause
193 \Def:Section\titleclause{}{\#1}
194 \let\no:titleclause\titleclause
195 \def\titleclause{\rdef:sec{titleclause}}
196 \Def:Section\likeclause{}{\#1}
197 \let\likeclause\likeclause
198 \let\likeclause\UnDef
199 
```

Add the hooks for the normal sectioning commands. This is a revision of code in article.4ht.

```
200 \let\no@clause\clause
201 \Def:Section\clause{\ifnum \c:secnumdepth>\c@secnumdepth \else
202   \theclause \fi}{\#1}
203 \let\no:clause\clause
204 \def\clause{\rdef:sec{clause}}
205 \Def:Section\likeclause{}{\#1}
206 \let\likeclause\likeclause
207 \let\likeclause\UnDef
208
209 \let\no@sclause\sclause
210 \Def:Section\sclause{\ifnum \c:secnumdepth>\c@secnumdepth \else
211   \thesclause \fi}{\#1}
212 \let\no:sclause\sclause
213 \def\sclause{\rdef:sec{sclause}}
214 \Def:Section\likesclause{}{\#1}
215 \let\likesclause\likesclause
216 \let\likesclause\UnDef
217
218 \let\no@ssclause\ssclause
219 \Def:Section\ssclause{\ifnum \c:secnumdepth>\c@secnumdepth \else
220   \thessclause \fi}{\#1}
221 \let\no:ssclause\ssclause
222 \def\ssclause{\rdef:sec{ssclause}}
223 \Def:Section\likessclause{}{\#1}
224 \let\likessclause\likessclause
225 \let\likessclause\UnDef
226
227 \let\no@sssclause\sssclause
228 \Def:Section\sssclause{\ifnum \c:secnumdepth>\c@secnumdepth \else
```

```

229   \thesssclause \fi}{#1}
230 \let\no:sssclause\sssclause
231 \def\sssclause{\rdef:sec{sssclause}}
232 \Def:Section\likesssclause{}{#1}
233 \let\likesssclause\likesssclause
234 \let\likesssclause\UnDef
235
236 \let\no@ssssclause\ssssclause
237 \Def:Section\ssssclause{\ifnum \c:secnumdepth>\c@secnumdepth \else
238   \thesssclause \fi}{#1}
239 \let\no:ssssclause\ssssclause
240 \def\ssssclause{\rdef:sec{ssssclause}}
241 \Def:Section\likessssclause{}{#1}
242 \let\likessssclause\likessssclause
243 \let\likessssclause\UnDef
244
245 \let\no@sssssclause\sssssclause
246 \Def:Section\sssssclause{\ifnum \c:secnumdepth>\c@secnumdepth \else
247   \thessssclause \fi}{#1}
248 \let\no:sssssclause\sssssclause
249 \def\sssssclause{\rdef:sec{sssssclause}}
250 \Def:Section\likessssclause{}{#1}
251 \let\likessssclause\likessssclause
252 \let\likessssclause\UnDef
253
254 \let\no@fibicl@use\fibicl@use
255 \Def:Section\fibicl@use{}{#1}
256 \let\no:fibicl@use\fibicl@use
257 \def\fibicl@use{\rdef:sec{fibicl@use}}
258 \Def:Section\likefibicl@use{}{#1}
259 \let\likefibicl@use\likefibicl@use
260 \let\likefibicl@use\UnDef
261
262 \def\@normannex#1{%
263   \tocskip{\tocentryskip}
264   \SkipRefstepAnchor
265   \addcontentsline{toc}{annex}{\annexname\space\theannex\space(\normative{#1})\space#1}%
266   \csname @endnormannex\endcsname}
267
268 \let\tempb\normannex
269 \Def:Section\normannex{\theannex}{#1}
270 \let\normannex\normannex
271 \let\normannex\tempb
272 \let\no@normannex\@normannex
273 \def\@normannex#1{%
274   {\let\addcontentsline\gobbleIII\no@normannex{#1}}%
275   \HtmlEnv \TocTitle{#1}\normannex{#1}}
276
277 \def\@infannex#1{%
278   \tocskip{\tocentryskip}}

```

```

279 \SkipRefstepAnchor
280 \addcontentsline{toc}{annex}{\annexname\space\theannex\space(\informativename)\space#1}%
281 \csname @endinfannex\endcsname}
282
283 \let\tempb\infannex
284 \Def:Section\infannex{\theannex}{#1}
285 \let\infannex\infannex
286 \let\infannex\tempb
287 \let\no@infannex@\infannex
288 \def\@infannex#1{%
289   {\let\addcontentsline\gobbleIII\no@infannex{#1}}%
290   \HtmlEnv \Toc:Title{#1}\infannex{#1}}
291
292 \def\@repannex#1{%
293   \tocskip{\tocentryskip}
294   \SkipRefstepAnchor
295   \addcontentsline{toc}{annex}{\annexname\space\theannex\space#1}%
296   \csname @endrepannex\endcsname}
297
298 \let\tempb\repannex
299 \Def:Section\repannex{\theannex}{#1}
300 \let\repannex\repannex
301 \let\repannex\tempb
302 \let\no@repannex@\repannex
303 \def\@repannex#1{%
304   {\let\addcontentsline\gobbleIII\no@repannex{#1}}%
305   \HtmlEnv \Toc:Title{#1}\repannex{#1}}
306

```

Specify which sectioning commands end which kinds of section.

```

307 \Configure{endtitleclause}
308   {clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
309 \Configure{endliketitleclause}
310   {clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
311
312 \Configure{endclause}
313   {likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
314 \Configure{endlikeclause}
315   {clause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
316
317 \Configure{endsclause}
318   {likesclause,%
319    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
320 \Configure{endlikesclause}
321   {sclause,%
322    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
323
324 \Configure{endssclause}
325   {likessclause,sclause,likesclause,%
326    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}

```

```

327 \Configure{endlikessclause}
328   {ssclause,sclause,likesclause,%
329    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
330
331 \Configure{endsssclause}
332   {likesssclause,ssclause,likessclause,sclause,likesclause,%
333    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
334 \Configure{endlikesssclause}
335   {sssclause,ssclause,likesssclause,sclause,likesclause,%
336    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
337
338 \Configure{endssssclause}
339   {likessssclause,likesssclause,ssclause,likessclause,sclause,likesclause,%
340    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
341 \Configure{endlikessssclause}
342   {ssssclause,likesssclause,ssclause,likessclause,sclause,likesclause,%
343    clause,likeclause,fibicl@use,likefibicl@use,normannex,infannex,repannex}
344
345 \Configure{endfibicl@use}{fibicl@use,endlikefibicl@use,clause,likeclause}
346 \Configure{endlikefibicl@use}{fibicl@use,endlikefibicl@use,clause,likeclause}
347
348 \Configure{endnormannex}{normannex,infannex,repannex,fibicl@use,likefibicl@use}
349 \Configure{endinfannex}{normannex,infannex,repannex,fibicl@use,likefibicl@use}
350 \Configure{endrepannex}{normannex,infannex,repannex,fibicl@use,likefibicl@use}
351

```

3.1.3 Miscellaneous

\caption We have to add configuration hooks and code for captions.

\@makecaption 352 \NewConfigure{caption}[4]{\c: def \cptA:{#1}\c: def \cptB:{#2}%
353 \c: def \cptC:{#3}\c: def \cptD:{#4}%
354 \long\def\@makecaption#1#2{%
355 {\cptA: \cap: ref{#1}%
356 \cptB:}{\cptC:{#2}\cptD:}}%
357 \pend: def \caption{\SkipRefstepAnchor}%
358

\theindex \theindex is redefined to cater for the difference between printed documents with page numbers and HTML documents. This is a copy of the code in article.4ht.

359 \long\def\c: theindex:#1#2#3#4#5#6#7#8#9{%
360 \def\theindex{%
361 \def\idx: item{\SaveEverypar\everypar{}#1}%
362 \def\endtheindex{\idx: item#2\RecallEverypar}%
363 \def\item{\idx: item\let\index@\gobble #3\def\idx: item{#4}}%
364 \def\subitem{\idx: item\let\index@\gobble #5\def\idx: item{#6}}%
365 \def\subsubitem{\idx: item\let\index@\gobble #7\def\idx: item{#8}}%
366 \def\indexspace{\idx: item#9\let\idx: item\empty}%
367}

quote A copy of the code from article.4ht.

quotation

```

368 \append:def\quote{\par\@totalleftmargin\z@}
369 \append:def\quotation{\a:quotation\par\@totalleftmargin\z@}
370 \NewConfigure{quotation}{1}
371
\thefootnote   The default TeX4ht treatment of footnotes is to put each one into a seperate
                  file. In the iso case I want to have the footnote text in the same file as the body of
                  the document. Eitan Gurari suggested the method implemented here to override
                  the default (see also page 21).
372 \renewcommand{\thefootnote}{\arabic{footnote}\csname PRNT\endcsname}
373

```

3.2 Configuration

All, or nearly all, configurations depend on the HTML level option chosen. Typically, html0 results in empty or null values of the hooks. html32 has some simple hook vaules, while html4 are the most complex.

3.2.1 Table of contents

The ToC configuration is basically a copy of the relevant code from `html0.4ht`, `html32.4ht` and `html4.4ht`, from the `article` section of each of those.

```

\listof I'm not sure what \listof does, but it is related to the ToC, LoF and LoT.
\lof 374 \CheckOption{0.0}
\lot 375 \if:Option
      %%%% Do html0
      \ConfigureToc{lof}{\empty}{\empty}{\empty}
      \ConfigureToc{lot}{\empty}{\empty}{\empty}
379 \else
380   \CheckOption{3.2}
381   \if:Option
      %%%% Do html32
      {\Configure{Needs}{Font\string_Size: #1}\ifcase \@ptsize
       \or \Needs{11}\or \Needs{12}\else \fi}
      \Configure{listof}{}{}{\HCode{<br\xml:empty>}}{}{}%
      \ConfigureToc{lof}{\empty}{\empty}{\HCode{<br\xml:empty>}}
      \ConfigureToc{lot}{\empty}{\empty}{\HCode{<br\xml:empty>}}
388 \else
      %%%% Do html4
      {\Configure{Needs}{Font\string_Size: #1}\ifcase \@ptsize
       \or \Needs{11}\or \Needs{12}\else \fi}
      \Configure{listof}{}{}{\HCode{<br\xml:empty>}}{}{}%
      \ConfigureToc{lof}
        {\HCode{<span class="lofToc">}}{\HCode{</span><br\xml:empty>}}
      \ConfigureToc{lot}
        {\HCode{<span class="lotToc">}}{\HCode{</span><br\xml:empty>}}
397 \fi
398 \fi
399

```

3.2.2 Sectioning commands

Configure the sectioning commands, HTML option dependent.

```

440      \ifnum \c:secnumdepth>\c@secnumdepth
441          \else \theclause \space \fi
442          {\HCode{</h3>}\NoIndent \par}
443 \Configure{clauseTITLE+}{\theclause\space#1}
444 \Configure{likeclause}{}{{
445     {\IgnorePar\HCode{<h3 class="likeclauseHead">}}
446     {\HCode{</h3>}\NoIndent \par}
447
448 \Configure{sclause}{}{{
449     {\bgroup \IgnorePar\HCode{<h4 class="sclauseHead">}}
450         \ifnum \c:secnumdepth>\c@secnumdepth
451             \else \thesclause \space \fi
452             {\HCode{</h4>}\NoIndent\egroup}
453 \Configure{sclauseTITLE+}{\thesclause \space#1}
454 \Configure{likesclause}{}{{
455     {\bgroup \IgnorePar\HCode{<h4 class="likesclauseHead">}}
456     {\HCode{</h4>}\NoIndent\egroup}
457
458 \Configure{ssclause}{}{{
459     {\bgroup \IgnorePar\HCode{<h5 class="ssclauseHead">}}
460         \ifnum \c:secnumdepth>\c@secnumdepth
461             \else \thessclause \space \fi
462             {\HCode{</h5>}\NoIndent\egroup}
463 \Configure{likessclause}{}{{
464     {\bgroup \IgnorePar\HCode{<h5 class="likessclauseHead">}}
465     {\HCode{</h5>}\NoIndent\egroup}
466 \Configure{ssclauseTITLE+}{\thessclause \space#1}
467
468 \Configure{sssclause}{}{{
469     {\ShowPar\NoIndent\HCode{<span class="sssclauseHead">}\begingroup\bf
470         \thesssclause\space}
471     {\endgroup\HCode{</span>}\IgnorePar}
472 \Configure{likesssclause}{}{{
473     {\ShowPar\NoIndent\HCode{<span class="likesssclauseHead">}}
474     {\HCode{</span>}\IgnorePar}
475 \Configure{sssclauseTITLE+}{\thesssclause \space#1}
476
477 \Configure{ssssclause}{}{{
478     {\ShowPar\HCode{<span class="ssssclauseHead">}\begingroup\bf
479         \thessssclause\space}
480     {\endgroup\HCode{</span>}\IgnorePar}
481 \Configure{likessssclause}{}{{
482     {\ShowPar\HCode{<span class="likessssclauseHead">}\begingroup\bf}
483     {\endgroup\HCode{</span>}\IgnorePar}
484 \Configure{ssssclauseTITLE+}{\thessssclause \space#1}
485
486 \Configure{ssssscclause}{}{{
487     {\ShowPar\HCode{<span class="ssssscclauseHead">}\begingroup\bf
488         \thessssscclause\space}
489     {\endgroup\HCode{</span>}\IgnorePar}

```

```

490  \Configure{likesssssclause}{}{}
491    {\ShowPar\HCode{<span class="likesssssclauseHead">}\begingroup\bf}
492    {\endgroup\HCode{</span>}\IgnorePar}
493  \Configure{ssssscleaseTITLE+}{\thessssclause \space#1}
494
495  \Configure{fibic1@use}{}{}
496    {\IgnorePar\HCode{<h3 class="fibic1@useHead">}}
497    {\HCode{</h3>}\NoIndent \par}
498  \Configure{fibic1@useTITLE+}{#1}
499  \Configure{likefibic1@use}{}{}
500    {\IgnorePar\HCode{<h3 class="likefibic1@useHead">}}
501    {\HCode{</h3>}\NoIndent \par}
502
503  \Configure{normannex}{}{}
504    {\IgnorePar\HCode{<h3 class="normannexHead">}}
505    \annexname\ \theannex\ (\normativeName)\HCode{<BR\xml:empty>}}
506    {\HCode{</h3>}\NoIndent \par}
507  \Configure{normannexTITLE+}{\annexname\space \theannex\space (\normativeName)\space #1}
508
509  \Configure{infannex}{}{}
510    {\IgnorePar\HCode{<h3 class="infannexHead">}}
511    \annexname\ \theannex\ (\informativename)\HCode{<BR\xml:empty>}}
512    {\HCode{</h3>}\NoIndent \par}
513  \Configure{infannexTITLE+}{\annexname\space \theannex\space (\informativename)\space #1}
514
515  \Configure{repannex}{}{}
516    {\IgnorePar\HCode{<h3 class="repannexHead">}}
517    \annexname\ \theannex\ \HCode{<BR\xml:empty>}}
518    {\HCode{</h3>}\NoIndent \par}
519  \Configure{repannexTITLE+}{\annexname\space \theannex\space #1}
520
521  \else
      HTML default option (4.0)
522  %%%% Do html4
523  \Configure{titleclause}{}{}
524    {\IgnorePar \EndP\IgnorePar\HCode{<h1 class="titleHead">}}
525    {\HCode{</h1>}\NoIndent \par}
526  \Configure{titleclauseTITLE+}{#1}
527  \Configure{liketitleclause}{}{}
528    {\IgnorePar \EndP\IgnorePar\HCode{<h1 class="titleHead">}}
529    {\HCode{</h1>}\NoIndent \par}
530
531  \Configure{clause}{}{}
532    {\IgnorePar \EndP\IgnorePar\HCode{<h3 class="clauseHead">}}
533    \ifnum \c:secnumdepth>\c@secnumdepth
534    \else \theclause \space \fi
535    {\HCode{</h3>}\NoIndent \par}
536  \Configure{clauseTITLE+}{\theclause\space#1}
537  \Configure{likeclause}{}{}

```

```

538     {\IgnorePar \EndP\IgnorePar\HCode{<h3 class="likeclauseHead">}}
539     {\HCode{</h3>}\NoIndent \par}
540
541 \Configure{sclause}{}{}
542     {\EndP\bgroup \IgnorePar\HCode{<h4 class="sclauseHead">}
543         \ifnum \c:secnumdepth>\c@secnumdepth
544             \else \thesclause \space \fi}
545     {\HCode{</h4>}\NoIndent\egroup}
546 \Configure{sclauseTITLE+}{\thesclause \space#1}
547 \Configure{likesclause}{}{}
548     {\EndP\bgroup \IgnorePar\HCode{<h4 class="likesclauseHead">}}
549     {\HCode{</h4>}\NoIndent\egroup}
550
551 \Configure{ssclause}{}{}
552     {\EndP\bgroup \IgnorePar\HCode{<h5 class="ssclauseHead">}
553         \ifnum \c:secnumdepth>\c@secnumdepth
554             \else \thessclause \space \fi}
555     {\HCode{</h5>}\NoIndent\egroup}
556 \Configure{likessclause}{}{}
557     {\EndP\bgroup \IgnorePar\HCode{<h5 class="likessclauseHead">}}
558     {\HCode{</h5>}\NoIndent\egroup}
559 \Configure{ssclauseTITLE+}{\thessclause \space#1}
560
561 \Configure{sssclause}{}{}
562     {\ShowPar\NoIndent\HCode{<span class="sssclauseHead">}\begingroup\bf
563         \thesssclause\space}
564     {\endgroup\HCode{</span>}\IgnorePar}
565 \Configure{likesssclause}{}{}
566     {\ShowPar\NoIndent\HCode{<span class="likesssclauseHead">}}
567     {\HCode{</span>}\IgnorePar}
568 \Css{.sssclauseHead, .likesssclauseHead
569     { margin-top:2em; font-weight: bold;}}
570
571 \Configure{ssssclause}{}{}
572     {\ShowPar\HCode{<span class="ssssclauseHead">}\begingroup\bf
573         \thessssclause\space}
574     {\endgroup\HCode{</span>}\IgnorePar}
575 \Configure{likessssclause}{}{}
576     {\ShowPar\HCode{<span class="likessssclauseHead">}\begingroup\bf}
577     {\endgroup\HCode{</span>}\IgnorePar}
578 \Css{.ssssclauseHead, .likessssclauseHead
579     { font-weight: bold;}}
580
581 \Configure{ssssscclause}{}{}
582     {\ShowPar\HCode{<span class="ssssscclauseHead">}\begingroup\bf
583         \thessssscclause\space}
584     {\endgroup\HCode{</span>}\IgnorePar}
585 \Configure{likessssscclause}{}{}
586     {\ShowPar\HCode{<span class="likessssscclauseHead">}\begingroup\bf}
587     {\endgroup\HCode{</span>}\IgnorePar}

```

```

588 \Css{.sssssclauseHead, .likesssssclauseHead
589   { font-weight: bold;}}
590
591 \Configure{fibic1@use}{}
592   {\IgnorePar\EndP \IgnorePar\HCode{<h3 class="fibic1@useHead">}}
593   {\HCode{</h3>}\NoIndent \par}
594 \Configure{fibic1@useTITLE+}{#1}
595 \Configure{likefibic1@use}{}
596   {\IgnorePar\EndP \IgnorePar\HCode{<h3 class="likefibic1@useHead">}}
597   {\HCode{</h3>}\NoIndent \par}
598
599 \Configure{normannex}{}
600   {\IgnorePar \EndP\IgnorePar\HCode{<h3 class="normannexHead">}}
601   \annexname\ \theannex\ (\normativeName)\HCode{<BR\xml:empty>}}
602   {\HCode{</h3>}\NoIndent \par}
603 \Configure{normannexTITLE+}{\annexname\space \theannex\space (\normativeName)\space #1}
604 \Css{h3.normannexHead{text-align: center}}
605
606 \Configure{infannex}{}
607   {\IgnorePar\EndP \IgnorePar\HCode{<h3 class="infannexHead">}}
608   \annexname\ \theannex\ (\informativeName)\HCode{<BR\xml:empty>}}
609   {\HCode{</h3>}\NoIndent \par}
610 \Configure{infannexTITLE+}{\annexname\space \theannex\space (\informativeName)\space #1}
611 \Css{h3.infannexHead{text-align: center}}
612
613 \Configure{repannex}{}
614   {\IgnorePar\EndP \IgnorePar\HCode{<h3 class="repannexHead">}}
615   \annexname\ \theannex\ \HCode{<BR\xml:empty>}}
616   {\HCode{</h3>}\NoIndent \par}
617 \Configure{repannexTITLE+}{\annexname\space \theannex\space #1}
618 \Css{h3.repannexHead{text-align: center}}
619
620 \fi
621 \fi
622

      Reconfigure sectioning if not HTML.

623 \ifHTML \else
624   \ifx\bf\UnDef
625     \def\bf{\normalfont\bfseries}
626   \fi
627 \Configure{titleclause}{\begingroup\bf}{\endgroup}
628 \Configure{liketitleclause}{\begingroup\bf}{\endgroup}
629 \Configure{clause}{}{\begingroup\bf\theclause\space\endgroup}
630 \Configure{likeclause}{}{\begingroup\bf\endgroup}
631 \Configure{sclause}{}{\begingroup\bf\thesclause\space\endgroup}
632 \Configure{likesclause}{}{\begingroup\bf\endgroup}
633 \Configure{ssclause}{}{\begingroup\bf\thessclause\space\endgroup}
634 \Configure{likessclause}{}{\begingroup\bf\endgroup}
635 \Configure{sssclause}{}{}
```

```
636     {\begingroup\bf\thesssclause\space}{\endgroup}
637 \Configure{likesssclause}{}{}{\begingroup\bf{\endgroup}
638 \Configure{ssssclause}{}{}
639     {\begingroup\it\thesssclause\space}{\endgroup}
640 \Configure{likessssclause}{}{}
641     {\begingroup\it}{\endgroup}
642 \Configure{sssssclause}{}{}
643     {\begingroup\it\thessssclause\space}{\endgroup}
644 \Configure{likessssclause}{}{}
645     {\begingroup\it}{\endgroup}
646 \Configure{fibicl@use}{}{}{\begingroup\bf{\endgroup}
647 \Configure{likefibicl@use}{}{}{\begingroup\bf{\endgroup}
648 \Configure{normannex}{}{}
649     {\begingroup\bf \annexname~\theannex~(\normative)\space}{\endgroup}
650 \Configure{infannex}{}{}
651     {\begingroup\bf \annexname~\theannex~(\informative)\space}{\endgroup}
652 \Configure{repannex}{}{}
653     {\begingroup\bf v\annexname~\theannex\space}{\endgroup}
654 \fi
655
```

3.2.3 Miscellaneous

`\caption` Configure the `\caption` command.

```
656 \CheckOption{0.0}
657 \if:Option
The html0 option is in effect.
658 %%% Do html0
659 \Configure{caption}{}{}{}{}
660 \else
661 \CheckOption{3.2}
662 \if:Option
```

The `html32` option is in effect.

```
663 %%% Do html32
664 \Configure{caption}{\HCode{\if:nopar \else <br\xml:empty>\fi
665     <div align="center"><table\Hnewline>
666     <tr valign="bottom"><td nowrap><strong>}}
667     {} {\HCode{</strong></td><td \Hnewline>}}
668     {\HCode{</td></tr></table></div>}}
669 \else
```

The `html4` option (the default, unless specifically overridden by `html0` or `html32`) is in effect.

```
670 %%% Do html4
671 \Configure{caption}{\HCode{\if:nopar \else <br\xml:empty>\fi}
672   \xhtml{\IgnorePar\EndP}\HCode{<div align="center"
673     class="caption"><table class="caption"\Hnewline<tr
674       valign="baseline" class="caption"><td class="id">}}
675   {\: } {\HCode{</td><td \Hnewline class="content">}}
```

```
676      {\HCode{</td></tr></table></div>}}
677      \Css{.caption td.id{font-weight: bold; white-space: nowrap;}}
678  \fi
679 \fi
680
```

theindex Copy of original TeX4ht code. There are 9 hooks for possible configuration.

quotation These are all quotation-like environments. `quotation` and `quote` are original TeX4ht, while the others are specifically for iso.

```
anote 715 \:CheckOption{0.0}
```

note 716 \if:Option

anexample 717 %%% Do html10

```
example 718 \ConfigureEnv{quotation}{}{}{}{}{}  
        719 \ConfigureEnv{quote}{}{}{}{}{}  
        720 \ConfigureEnv{anote}{}{}{}{}{}
```

```

721 \ConfigureEnv{note}{}{}{}{}{}}
722 \ConfigureEnv{anexample}{}{}{}{}{}}
723 \ConfigureEnv{example}{}{}{}{}{}}
724 \else
725   \CheckOption{3.2}
726   \if:Option
727     %%% Do html32
728     \ConfigureEnv{quotation}{}{}{\start:env{quotation}}{\end:env}
729     \ConfigureEnv{quote}{}{}{\start:env{quote}}{\end:env}
730     \ConfigureEnv{anote}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
731       {\start:env{anote}}{\end:env}
732     \ConfigureEnv{note}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
733       {\start:env{note}}{\end:env}
734     \ConfigureEnv{anexample}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
735       {\start:env{anexample}}{\end:env}
736     \ConfigureEnv{example}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
737       {\start:env{example}}{\end:env}
738 \else
739   %%% Do html4
740   \ConfigureEnv{quotation}{}{}{\start:env{quotation}}{\end:env}
741   \ConfigureEnv{quote}{}{}{\start:env{quote}}{\end:env}
742     \Css{.quote {margin-bottom:0.25em;
743             margin-top:0.25em;
744             margin-left:1em;}}
745   \ConfigureEnv{anote}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
746     {\start:env{anote}}{\end:env}
747   \ConfigureEnv{note}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
748     {\start:env{note}}{\end:env}
749   \ConfigureEnv{anexample}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
750     {\start:env{anexample}}{\end:env}
751   \ConfigureEnv{example}{\HCode{<blockquote>}}{\HCode{</blockquote>}}%
752     {\start:env{example}}{\end:env}
753 \fi
754 \fi
755

```

description These all all description-like environments. **description** is the original TeX4ht configuration, while the others are new for iso.

```

768     {\HCode{<dl>}}
769     {\HCode{</dl>}\ShowPar}
770     {\HCode{<dt>}\bgroup \bf}
771     {\egroup\HCode{<dd\Hnewline>}}
772     \ConfigureList{nreferences}%
773     {\HCode{<dl>}}
774     {\HCode{</dl>}\ShowPar}
775     {\HCode{<dt>}\bgroup \bf}
776     {\egroup\HCode{<dd\Hnewline>}}
777     \ConfigureList{references}%
778     {\HCode{<dl>}}
779     {\HCode{</dl>}\ShowPar}
780     {\HCode{<dt>}\bgroup \bf}
781     {\egroup\HCode{<dd\Hnewline>}}
782     \ConfigureList{symbols}%
783     {\HCode{<dl>}}
784     {\HCode{</dl>}\ShowPar}
785     {\HCode{<dt>}\bgroup \bf}
786     {\egroup\HCode{<dd\Hnewline>}}
787 \else
788 %%% Do html4
789     \ConfigureList{description}%
790     {\EndP\HCode{<dl class="description">}\let\end:itm=\empty}
791     {\EndP\HCode{</dd></dl>}\ShowPar}
792     {\end:itm\def\end:itm{\EndP\Tg</dd>}
793     \HCode{<dt class="description">}\bgroup \bf}
794     {\egroup\EndP\HCode{</dt><dd\Hnewline class="description">}}
795     \ConfigureList{nreferences}%
796     {\EndP\HCode{<dl class="nreferences">}\let\end:itm=\empty}
797     {\EndP\HCode{</dd></dl>}\ShowPar}
798     {\end:itm\def\end:itm{\EndP\Tg</dd>}
799     \HCode{<dt class="nreferences">}\bgroup \bf}
800     {\egroup\EndP\HCode{</dt><dd\Hnewline class="nreferences">}}
801     \ConfigureList{references}%
802     {\EndP\HCode{<dl class="references">}\let\end:itm=\empty}
803     {\EndP\HCode{</dd></dl>}\ShowPar}
804     {\end:itm\def\end:itm{\EndP\Tg</dd>}
805     \HCode{<dt class="references">}\bgroup \bf}
806     {\egroup\EndP\HCode{</dt><dd\Hnewline class="references">}}
807     \ConfigureList{symbols}%
808     {\EndP\HCode{<dl class="symbols">}\let\end:itm=\empty}
809     {\EndP\HCode{</dd></dl>}\ShowPar}
810     {\end:itm\def\end:itm{\EndP\Tg</dd>}
811     \HCode{<dt class="symbols">}\bgroup \bf}
812     {\egroup\EndP\HCode{</dt><dd\Hnewline class="symbols">}}
813 \fi
814 \fi
815

```

\footnotetext These are configured to print the footnote text in the main body of the document
 \footnote

and for the number to link to the text. This is based on suggestions by Eitan Gurari.

```

816 \CheckOption{0.0}
817 \if:Option
818   \Configure{footnotetext}{}{}{} % from latex section
819 \else
820   \CheckOption{3.2}
821   \if:Option
822     \% \Configure{footnotetext}      % from latex section I THINK THIS IS WRONG
823     {\HCode{<hr>}} {\HCode{<hr>}}
824     {\HCode{<sup>}} {\HCode{</sup>}}
825     \Configure{footnotetext}
826       {\HCode{<sup>}\FNmark\HCode{</sup>}}
827       {(footnote\ifx \FNmark\empty \else\space\fi \FNmark : }
828       {})
829     \Configure{footnote}
830       {\def\PRNT{}\HCode{<sup>}%
831         \Link{\arabic{footnote}}{}\FNmark\EndLink
832         \HCode{</sup>}}
833       {\relax\space
834         \Link{}{\arabic{footnote}}\EndLink
835         (footnote \FNmark : }
836       {})
837
838 \else
839   \% \Configure{footnotetext}      % from latex section
840   {\HCode{<br \xml:empty><span class="footnotetext"><sup>}\FNmark
841   \HCode{</sup>}}
842   {}
843   {\HCode{</span>}}
844   \Css{span.footnotetext{ font-size:75%; font-style:italic; } }
845
846   \% \Configure{footnote}          % from latex section
847   {\HPageButton[fn\FNnum]{\HCode{<sup>}\FNmark\HCode{</sup>}}}
848   {\BeginHPage[fn\FNnum]{ }}
849   {\EndHPage{}}
```

This is Eitan's suggested code.

```

850   \Configure{footnotetext}
851     {\Tg<sup>\FNmark\Tg</sup>}
852     {(footnote\ifx \FNmark\empty \else\space\fi \FNmark : }
853     {})
854
855   \Configure{footnote}
856     {\def\PRNT{}\Tg<sup>%
857       \Link{\arabic{footnote}}{}\FNmark\EndLink
858       \Tg</sup>}
859     {\relax\space
860       \Link{}{\arabic{footnote}}\EndLink
861       (footnote \FNmark : }
```

```

862      {}}
863  \fi
864 \fi
865

The following is a slight revision of the end of article.4ht.

866 \def\tableofcontents{%
867   \ifx\contentsname\empty \else
868     \clause*\{\contentsname}\%
869   \fi
870   \tableofcontents}
871 \let\dx:\begin\begin
872 \def\begin#1{\def\temp{#1}\def\tempa{theindex}\ifx \temp\tempa
873   \fibicl@use*\{\indexname}\fi\dx:\begin{#1}}
874

The end of the package

875 </usc>

```

3.3 Observations

There are three main aspects to developing TeX4ht code and configurations for a new class or package:

1. Finding out what hooks and configurations are already available.
2. Determining what additional hooks, and where they should be put, for the new package.
3. Configuring all the hooks.

TeX4ht has added many hooks to the L^AT_EX kernel and classes and packages based on kernel code inherit those hooks. I found it advisable to run a test document with new macros through TeX4ht to see what the result looked like. Depending on the particular macros it may be that the inherited hooks and configuration are sufficient and nothing needs to be done.

For this particular class a lot of new hooks were required, but mainly related to the new macros for sectioning. Configurations were obviously required for these, together with a few for new kinds of environments and lists.

There are other packages that, in their turn, are designed to work with the iso class and it turned out that they required few new hooks or changes to the existing configurations.

The rest of this section is concerned with item 2, namely adding hooks.

3.3.1 Colon is a letter

Within the TeX4ht ‘environment’, that is the *.4ht files, the colon character (:) acts as a letter in a similar manner as the at character (@) does in class and package files; @ is also treated as a letter in the environment. Normally, something like

`\start:env{myenv}` would be treated as the command `\start` followed by the text `:env{myenv}`. In the TeX4ht environment it is the command `\start:env` with the argument `{myenv}`. If any commands like this occur in the preamble to a L^AT_EX document, then they must be surrounded by `\makecolonletter` and `\restorecolon`, which may be defined as:¹

```
\chardef\oldcolon=\thecharcode`\:
\newcommand{\makecolonletter}{\catcode`\!:11\relax}
\newcommand{\restorecolon}{\catcode`\:=\oldcolon\relax}
```

The fact that command names can include a colon means that you have to be careful in code that includes any colon characters. In L^AT_EX, code like like `{footnote \thefootnote:}` will print the footnote number immediately followed by a colon (e.g., footnote 3:). In the TeX4ht environment you are more likely to get an error message saying that `\thefootnote:` is undefined! Instead, this needs to be coded as `{footnote \thefootnote :}`, so that the `\thefootnote` command is ended by the space before the colon.

3.3.2 Adding code and hooks

A L^AT_EX idiom for adding code at the start and/or end of an existing macro which takes no arguments called, say `\foo`, is:

```
\let\oldfoo\foo
\renewcommand{\foo}{new-start-code \oldfoo new-end-code}
```

Similarly for commands `\baz` and `\biz` which take one and two arguments respectively:

```
\let\oldbaz\baz
\renewcommand{\baz}[1]{new-start-code \oldbaz{#1} new-end-code}
\let\oldbiz\biz
\renewcommand{\biz}[2]{new-start-code \oldbiz{#1}{#2} new-end-code}
```

As these kinds of redefinitions are a common occurrence `tex4ht.sty` provides commands that encapsulate the above idiom. These are `\pend:def\foo{new-start-code}` and `\append:def\foo{new-end-code}` for when `\foo` is a macro without arguments, and there are similar commands for prepending and appending to macros with up to three arguments. Repeating and extending the L^AT_EX example, in the TeX4ht environment it could be coded as:

```
\pend:def\foo{new-start-code} % \foo has no arguments
\append:def\foo{new-end-code}
\pend:defI\baz{new-start-code} % \baz has one argument
\append:defI\baz{new-end-code}
```

¹Note that a package may redefine the category code for the colon, which is why the old value is saved.

```
\pend:defII\biz{new-start-code} % \biz has two arguments
\append:defII\biz{new-end-code}
\pend:defIII\boz{new-start-code} % \boz has three arguments
\append:defIII\boz{new-end-code}
```

The definition of a hook in a macro called, say `\buz`, takes the form `\X:buz` where X is a single letter. For example, adding a configurable hook at the start and end of the macro `\baz` can be done like this:

```
\pend:defI\baz{\a:baz}      % hook at start
\append:defI\baz{\b:baz}      % hook at end
\NewConfigure{baz}{2}        % declare \baz has two configurable hooks
```

Note that by default a `\NewConfigure{baz}{2}` command expects the hook corresponding to the first argument to be `\a:baz` and the hook corresponding to the second argument to be `\b:baz`. Extending the example, `\NewConfigure{foo}{9}` will expect the hook corresponding to the ninth argument to be `\i:foo` ('i' is the ninth letter of the alphabet). This default setting for `\NewConfigure` has been created via:

```
\Configure{\NewConfigure}{a:}{b:}{c:}{d:}{e:}{f:}{g:}{h:}{i:}
in tex4ht.sty.
```

As an example for hook insertion, assume a macro defined like:

```
\newcommand{\mac}[1]{START #1 END}
```

in which there are four potential places for hooks (call them h1 to h4):

`{h1 START h2 #1 h3 END h4}`. Hooks h1 and h4 can be added via `\pend:defI` and `\append:defI`, but these are not sufficient by themselves. Other methods are required for inserting all four hooks. Two of these are:

- Redefine the whole macro from scratch:

```
\renewcommand{\mac}[1]{\a:mac START \c:mac #1 \d:mac END \b:mac}
\NewConfigure{mac}{4}
```

- Reuse parts of the original macro (similar to the L^AT_EX ap/pre-pending idiom):

```
\let\oldmac\mac
\renewcommand{\mac}[1]{\a:mac\oldmac{\c:mac #1 \d:mac}\b:mac}
\NewConfigure{mac}{4}
```

Either of these examples can be configured via:

```
\Configure{mac}%
  {first arg for a hook}  % \a:mac at the start of the command
  {second arg for a hook} % \b:mac at the end of the command
  {third arg for a hook}  % \c:mac immediately before the argument
  {fourth arg for a hook} % \d:mac immediately after the argument
```

Note that the hooks do not have to be placed in the `\mac` command in alphabetical order.

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