

stex-master.sty: \TeX 2.0*

Michael Kohlhase, Dennis Müller
FAU Erlangen-Nürnberg
<http://kwarc.info/>

December 30, 2020

Abstract

TODO

*Version v2.0 (last revised 2020/11/10)

Contents

| | | |
|----------|--|-----------|
| 1 | Introduction | 3 |
| 2 | User commands | 3 |
| 3 | Implementation | 3 |
| 3.1 | sTeX base | 4 |
| 3.2 | Paths and URIs | 4 |
| 3.3 | Modules | 15 |
| 3.4 | Inheritance | 19 |
| 3.5 | Symbols/Notations/Verbalizations | 28 |
| 3.6 | Term References | 40 |
| 3.7 | sref | 42 |
| 3.8 | smultiling | 45 |
| 3.9 | smglom | 45 |
| 3.10 | mathhub | 46 |
| 3.11 | omdoc/omgroup | 46 |
| 3.12 | omtext | 49 |
| 4 | Things to deprecate | 54 |

1 Introduction

TODO

2 User commands

- ✓ `\sTeX`
- ✓ `module`
- ✓ `\importmodule`
- ✓ `\usemodule`
- ✓ `\symdecl`
- ✓ `\notation`
- ✓ verbalizations
- ? `\inputref`
- ? `\libinput`
- × `\defi`
- × `\tref`
- × `omgroup/omtext`

3 Implementation

```
1 <*package>
2 \edef\old@newlinechar{\the\newlinechar}
3 \newlinechar=-1
4 % TODO
5 \newif\if@modules@html@\@modules@html@true
6 \DeclareOption{omdocmode}{\@modules@html@false}
7 % Modules:
8 \newif\ifmod@show\mod@showfalse
9 \DeclareOption{showmods}{\mod@showtrue}
10 % sref:
11 \newif\ifextrefs\extrefsfalse
12 \DeclareOption{extrefs}{\extrefstrue}
13 %
14 \ProcessOptions

A conditional for LaTeXML:
15 \ifcname if@latexml\endcname\else
16 \expandafter\newif\cname if@latexml\endcname\@latexmlfalse
17 \fi
```

```

18 \RequirePackage{xspace}
19 \if@latexml\else\RequirePackage{standalone}\RequirePackage{metakeys}\fi

```

3.1 sTeX base

The sTeX logo:

```

20 \protected\def\stex{%
21   \@ifundefined{texorpdfstring}%
22   {\let\texorpdfstring\@firstoftwo}%
23   }%
24   \texorpdfstring{\raisebox{-.5ex}{S}\kern-.5ex\TeX}{sTeX}\xspace%
25 }
26 \def\sTeX{\stex}

```

3.2 Paths and URIs

```

27 \if@latexml\else
28 \RequirePackage{xstring}
29 \RequirePackage{etoolbox}
30 \fi

```

`\defpath` `\defpath[optional argument]{macro name}{base path}` defines a new macro which can take another path to form one integrated path. For example, `\MathHub` in every `localpaths.tex` is defined as:

```
\defpath{MathHub}{/path/to/localmh/MathHub}
```

then we can use `\MathHub` to form other paths, for example,

```
\MathHub{source/smgglom/sets}
```

will generate `/path/to/localmh/MathHub/source/smgglom/sets`.

```

31 \newrobustcmd\defpath[3][]{%
32   \expandafter\newcommand\csname #2\endcsname[1]{#3/#1}%
33 }%
34 \let\namespace\defpath

```

3.2.1 Path Canonicalization

We define two macros for changing the category codes of common characters in URIs, in particular `#`.

```

35 \def\pathsuris@setcatcodes{%
36   \edef\pathsuris@oldcatcode@hash{\the\catcode'\#}%
37   \catcode'\#=12\relax%
38   \edef\pathsuris@oldcatcode@slash{\the\catcode'\/%}
39   \catcode'\/=12\relax%
40   \edef\pathsuris@oldcatcode@colon{\the\catcode'\:%}
41   \catcode'\:=12\relax%
42   \edef\pathsuris@oldcatcode@qm{\the\catcode'\?}%
43   \catcode'\?=12\relax%
44 }

```

```

45 \def\pathsuris@resetcatcodes{%
46   \catcode'\#\pathsuris@oldcatcode@hash\relax%
47   \catcode'\/\pathsuris@oldcatcode@slash\relax%
48   \catcode'\:\pathsuris@oldcatcode@colon\relax%
49   \catcode'\?\pathsuris@oldcatcode@qm\relax%
50 }

```

We define some macros for later comparison.

```

51 \def\@ToTop{..}
52 \def\@Slash{/}
53 \def\@Colon{:}
54 \def\@Space{ }
55 \def\@QuestionMark{?}
56 \def\@Dot{.}
57 \catcode'\&=12
58 \def\@Ampersand{&}
59 \catcode'\&=4
60 \pathsuris@setcatcodes
61 \def\@Fragment{#}
62 \pathsuris@resetcatcodes
63 \catcode'\.=0
64 .catcode'\.=12
65 .let.\@BackSlash\
66 .catcode'\.=0
67 \catcode'\.=12
68 \edef\old@percent@catcode{\the\catcode'\%}
69 \catcode'\%=12
70 \let\@Percent%
71 \catcode'\%=\old@percent@catcode

```

\@cpath Canonicalizes (file) paths:

```

72 \def\@cpath#1{%
73   \edef\pathsuris@cpath@temp{#1}%
74   \def\@CanPath{}%
75   \IfBeginWith\pathsuris@cpath@temp\@Slash{%
76     \@cpath@loop%
77     \edef\@CanPath{\@Slash\@CanPath}%
78   }{%
79     \IfBeginWith\pathsuris@cpath@temp{\@Dot\@Slash}{%
80       \StrGobbleLeft\pathsuris@cpath@temp2[\pathsuris@cpath@temp]%
81       \@cpath@loop%
82     }{%
83       \ifx\pathsuris@cpath@temp\@Dot\else%
84         \@cpath@loop\fi%
85     }%
86   }%
87   \IfEndWith\@CanPath\@Slash{%
88     \ifx\@CanPath\@Slash\else%
89       \StrGobbleRight\@CanPath1[\@CanPath]%
90     \fi%

```

```

91     }{}%
92 }
93
94 \def\@cpath@loop{%
95     \IfSubStr\pathsuris@cpath@temp\@Slash{%
96         \StrCut\pathsuris@cpath@temp\@Slash\pathsuris@cpath@temp@a\pathsuris@cpath@temp%
97         \ifx\pathsuris@cpath@temp@a\@ToTop%
98             \ifx\@CanPath\@empty%
99                 \edef\@CanPath{\@ToTop}%
100             \else%
101                 \edef\@CanPath{\@CanPath\@Slash\@ToTop}%
102             \fi%
103             \@cpath@loop%
104         \else%
105         \ifx\pathsuris@cpath@temp@a\@Dot%
106             \@cpath@loop%
107         \else%
108         \IfBeginWith\pathsuris@cpath@temp\@ToTop{%
109             \StrBehind{\pathsuris@cpath@temp}{\@ToTop}[\pathsuris@cpath@temp]%
110             \IfBeginWith\pathsuris@cpath@temp\@Slash{%
111                 \edef\pathsuris@cpath@temp{\@CanPath\pathsuris@cpath@temp}%
112             }{%
113                 \ifx\@CanPath\@empty\else%
114                     \edef\pathsuris@cpath@temp{\@CanPath\@Slash\pathsuris@cpath@temp}%
115                 \fi%
116             }%
117             \def\@CanPath{}%
118             \@cpath@loop%
119         }{%
120             \ifx\@CanPath\@empty%
121                 \edef\@CanPath{\pathsuris@cpath@temp@a}%
122             \else%
123                 \edef\@CanPath{\@CanPath\@Slash\pathsuris@cpath@temp@a}%
124             \fi%
125             \@cpath@loop%
126         }%
127     \fi\fi%
128 }{
129     \ifx\@CanPath\@empty%
130         \edef\@CanPath{\pathsuris@cpath@temp}%
131     \else%
132         \edef\@CanPath{\@CanPath\@Slash\pathsuris@cpath@temp}%
133     \fi%
134 }%
135 }

```

Test:

| path | canonicalized path | expected |
|---------------|--------------------|--------------|
| aaa | aaa | aaa |
| .././aaa | .././aaa | .././aaa |
| aaa/bbb | aaa/bbb | aaa/bbb |
| aaa/.. | | |
| .././aaa/bbb | .././aaa/bbb | .././aaa/bbb |
| ../aaa/./bbb | ../bbb | ../bbb |
| ../aaa/bbb | ../aaa/bbb | ../aaa/bbb |
| aaa/bbb/./ddd | aaa/ddd | aaa/ddd |
| aaa/bbb/./ddd | aaa/bbb/ddd | aaa/bbb/ddd |
| ./ | | |
| aaa/bbb/./.. | | |

`\cpath` Implement `\cpath` to print the canonicalized path.

```

136 \newcommand\cpath[1]{%
137   \cpath{#1}%
138   \@CanPath%
139 }
```

`\path@filename`

```

140 \def\path@filename#1#2{%
141   \edef\filename@oldpath{#1}%
142   \StrCount\filename@oldpath\@Slash[\filename@lastslash]%
143   \ifnum\filename@lastslash>0%
144     \StrBehind[\filename@lastslash]\filename@oldpath\@Slash[\filename@oldpath]%
145     \edef#2{\filename@oldpath}%
146   \else%
147     \edef#2{\filename@oldpath}%
148   \fi%
149 }
```

Test:

Path: /foo/bar/baz.tex

Filename: baz.tex

3.2.2 Windows

First, a conditional that tells us whether we have to use windows or unix file paths:

```

150 \newif\if@iswindows@\@iswindows@false
151 \IfFileExists{nul:}{\IfFileExists{/dev/null}}{\@iswindows@true}}{}
```

Test:

We are on windows: no.

`\windows@to@path` Converts a windows-style file path to a unix-style file path:

```

152 \newif\if@windowstopath@inpath@
153 \def\windows@to@path#1{
```

```

154 \@windowstopath@inpath@false
155 \def\windows@temp{}
156 \edef\windows@path{#1}
157 \ifx\windows@path\@empty\else
158 \expandafter\windows@path@loop\windows@path\windows@path@end
159 \fi
160 \let#1\windows@temp
161 }
162 \def\windows@path@loop#1#2\windows@path@end{
163 \def\windows@temp@b{#2}
164 \ifx\windows@temp@b\@empty
165 \def\windows@continue{}
166 \else
167 \def\windows@continue{\windows@path@loop#2\windows@path@end}
168 \fi
169 \if@windowstopath@inpath@
170 \ifx#1\@BackSlash
171 \edef\windows@temp{\windows@temp\@Slash}
172 \else
173 \edef\windows@temp{\windows@temp#1}
174 \fi
175 \else
176 \ifx#1:
177 \edef\windows@temp{\@Slash\windows@temp}
178 \@windowstopath@inpath@true
179 \else
180 \edef\windows@temp{\windows@temp#1}
181 \fi
182 \fi
183 \windows@continue
184 }

```

Test:

Input: C:\foo \bar .baz

Output: /C/foo/bar.baz

`\path@to@windows` Converts a unix-style file path to a windows-style file path:

```

185 \def\path@to@windows#1{
186 \@windowstopath@inpath@false
187 \def\windows@temp{}
188 \edef\windows@path{#1}
189 \edef\windows@path{\expandafter\@gobble\windows@path}
190 \ifx\windows@path\@empty\else
191 \expandafter\path@windows@loop\windows@path\windows@path@end
192 \fi
193 \let#1\windows@temp
194 }
195 \def\path@windows@loop#1#2\windows@path@end{
196 \def\windows@temp@b{#2}
197 \ifx\windows@temp@b\@empty

```



```

198     \def\windows@continue{}
199   \else
200     \def\windows@continue{\path@windows@loop#2\windows@path@end}
201   \fi
202   \if@windowstopath@inpath@
203     \ifx#1/
204       \edef\windows@temp{\windows@temp\@BackSlash}
205     \else
206       \edef\windows@temp{\windows@temp#1}
207     \fi
208   \else
209     \ifx#1/
210       \edef\windows@temp{\windows@temp:\@BackSlash}
211       \@windowstopath@inpath@true
212     \else
213       \edef\windows@temp{\windows@temp#1}
214     \fi
215   \fi
216   \windows@continue
217 }

```

Test:

Input: /C/fo0/bar.baz

Output: C:\fo0\bar.baz

3.2.3 Auxiliary methods

`\trimstring` Removes initial and trailing spaces from a string:

```

218 \def\trimstring#1{%
219   \edef\pathsuris@trim@temp{#1}%
220   \IfBeginWith\pathsuris@trim@temp\@Space{%
221     \StrGobbleLeft\pathsuris@trim@temp1[#1]%
222     \trimstring{#1}%
223   }{%
224     \IfEndWith\pathsuris@trim@temp\@Space{%
225       \StrGobbleRight\pathsuris@trim@temp1[#1]%
226       \trimstring{#1}%
227     }{%
228       \edef#1{\pathsuris@trim@temp}%
229     }%
230   }%
231 }

```

Test:

»bla blubb«

`\kpsewhich` Calls `kpsewhich` to get e.g. system variables:

```

232 %\if@latexml\else
233 \def\kpsewhich#1#2{\begingroup%
234   \edef\kpsewhich@cmd{"|kpsewhich #2"}%

```

```

235 \everyeof{\noexpand}%
236 \catcode'\=12%
237 \edef#1{\@@input\kpsewhich@cmd\@Space}%
238 \trimstring#1%
239 \if@iswindows@\windows@to@path#1\fi%
240 \xdef#1{\expandafter\detokenize\expandafter{#1}}%
241 \endgroup}
242 %\fi

```

Test:

</usr/share/texlive/texmf-dist/tex/latex/etoolbox/etoolbox.sty>

3.2.4 sTeX input hooks

We determine the PWD of the current main document:

```

243 \edef\pwd@cmd{\if@iswindows@ -expand-var \@Percent CD\@Percent\else -var-value PWD\fi}
244 \kpsewhich\stex@maindir\pwd@cmd
245 \edef\stex@mainfile{\stex@maindir\@Slash\jobname}
246 \edef\stex@mainfile{\expandafter\detokenize\expandafter{\stex@mainfile}}

```

Test:

</home/jazzpirate/work/Software/ext/sTeX/sty/stex-master>

We keep a stack of \inputed files:

```

247 \def\stex@currfile@stack{}
248
249 \def\stex@currfile@push#1{%
250     \edef\stex@temppath{#1}%
251     \edef\stex@temppath{\expandafter\detokenize\expandafter{\stex@temppath}}%
252     \edef\stex@currfile@stack{\stex@currfile\ifx\stex@currfile@stack\@empty\else,\stex@currfile@stack}
253     \IfBeginWith\stex@temppath\@Slash{\@cpath{\stex@temppath}}{%
254         \@cpath{\stex@maindir\@Slash#1}%
255     }
256     \let\stex@currfile\@CanPath%
257     \path@filename\stex@currfile\stex@currfilename%
258     \StrLen\stex@currfilename[\stex@currfile@tmp]%
259     \StrGobbleRight\stex@currfile{\the\numexpr\stex@currfile@tmp+1 }[\stex@currpath]%
260     \global\let\stex@currfile\stex@currfile%
261     \global\let\stex@currpath\stex@currpath%
262     \global\let\stex@currfilename\stex@currfilename%
263 }
264 \def\stex@currfile@pop{%
265     \ifx\stex@currfile@stack\@empty%
266         \global\let\stex@currfile\stex@mainfile%
267         \global\let\stex@currpath\stex@maindir%
268         \global\let\stex@currfilename\jobname%
269     \else%
270         \StrCut\stex@currfile@stack,\stex@currfile\stex@currfile@stack%
271         \path@filename\stex@currfile\stex@currfilename%
272         \StrLen\stex@currfilename[\stex@currfile@tmp]%
273         \StrGobbleRight\stex@currfile{\the\numexpr\stex@currfile@tmp+1 }[\stex@currpath]%

```

```

274 \global\let\stex@currfile\stex@currfile%
275 \global\let\stex@currpath\stex@currpath%
276 \global\let\stex@currfilename\stex@currfilename%
277 \fi%
278 }

```

`\stexinput` Inputs a file by (if necessary) converting its path to a windows path first, and adding the file path to the input stack above:

```

279 \def\stexinput#1{%
280 \stexiffileexists{#1}{%
281 \stex@currfile@push\stex@temp@path%
282 \input{\stex@currfile}%
283 \stex@currfile@pop%
284 }%
285 {%
286 \PackageError{stex}{File does not exist (#1): \stex@temp@path}{}%
287 }%
288 }
289 \def\stexiffileexists#1#2#3{%
290 \edef\stex@temp@path{#1}%
291 \if@iswindows@\path@to@windows\stex@temp@path\fi%
292 \IfFileExists\stex@temp@path{#2}{#3}%
293 }
294 \stex@currfile@pop

```

Test:

This file: [/home/jazzpirate/work/Software/ext/sTeX/sty/stex-master/stex-master](#)
A test file: [/home/jazzpirate/work/Software/ext/sTeX/sty/stex-master/testfile.tex](#)

3.2.5 MathHub repositories

We read the MATHHUB system variable and set `\MathHub` accordingly:

```

295 \kpsewhich\mathhub@path{--var-value MATHHUB}
296 \if@iswindows@\windows@to@path\mathhub@path\fi
297 \ifx\mathhub@path\@empty%
298 \PackageWarning{stex}{MATHHUB system variable not found or wrongly set}{%
299 \defpath{MathHub}{%
300 \else\defpath{MathHub}\mathhub@path\fi

```

Test:

[/home/jazzpirate/work/MathHub](#)

`\findmanifest` `\findmanifest{<path>}` searches for a file MANIFEST.MF up and over `<path>` in the file system tree.

```

301 \def\findmanifest#1{
302 \cpath{#1}
303 \ifx\@CanPath\@Slash
304 \def\manifest@mf{}
305 \else\ifx\@CanPath\@empty
306 \def\manifest@mf{}

```

```

307 \else
308   \edef\@findmanifest@path{\@CanPath/MANIFEST.MF}
309   \if@iswindows@ \path@to@windows \@findmanifest@path \fi
310   \IfFileExists{\@findmanifest@path}{
311     \%message{MANIFEST.MF found at \@findmanifest@path}
312     \edef\manifest@mf{\@findmanifest@path}
313     \xdef\temp@archive@dir{\expandafter\detokenize\expandafter{\@CanPath}}
314   }{
315     \edef\@findmanifest@path{\@CanPath/META-INF/MANIFEST.MF}
316     \if@iswindows@ \path@to@windows \@findmanifest@path \fi
317     \IfFileExists{\@findmanifest@path}{
318       \%message{MANIFEST.MF found at \@findmanifest@path}
319       \edef\manifest@mf{\@findmanifest@path}
320       \xdef\temp@archive@dir{\expandafter\detokenize\expandafter{\@CanPath}}
321     }{
322       \edef\@findmanifest@path{\@CanPath/meta-inf/MANIFEST.MF}
323       \if@iswindows@ \path@to@windows \@findmanifest@path \fi
324       \IfFileExists{\@findmanifest@path}{
325         \%message{MANIFEST.MF found at \@findmanifest@path}
326         \edef\manifest@mf{\@findmanifest@path}
327         \xdef\temp@archive@dir{\expandafter\detokenize\expandafter{\@CanPath}}
328       }{
329         \findmanifest{\@CanPath/..}
330       }
331     }
332 }

```

Test:

</home/jazzpirate/work/MathHub/smgloom/mv/META-INF/MANIFEST.MF>

the next macro is a helper function for parsing MANIFEST.MF

```

333 \def\split@manifest@key{
334   \IfSubStr{\manifest@line}{\@Colon}{
335     \StrBefore{\manifest@line}{\@Colon}[\manifest@key]
336     \StrBehind{\manifest@line}{\@Colon}[\manifest@line]
337     \trimstring\manifest@line
338     \trimstring\manifest@key
339   }{
340     \def\manifest@key{}
341   }
342 }

```

the next helper function iterates over lines in MANIFEST.MF

```

343 \def\parse@manifest@loop{
344   \ifeof\@manifest
345   \else
346     \read\@manifest to \manifest@line\relax
347     \edef\manifest@line{\expandafter\detokenize\expandafter{\manifest@line}}
348     \split@manifest@key
349     % id

```

```

350 \IfStrEq\manifest@key{\detokenize{id}}{
351 \xdef\manifest@mf@id{\manifest@line}
352 }{
353 % narration-base
354 \IfStrEq\manifest@key{\detokenize{narration-base}}{
355 \xdef\manifest@mf@narr{\manifest@line}
356 }{
357 % namespace
358 \IfStrEq\manifest@key{\detokenize{source-base}}{
359 \xdef\manifest@mf@ns{\manifest@line}
360 }{
361 \IfStrEq\manifest@key{\detokenize{ns}}{
362 \xdef\manifest@mf@ns{\manifest@line}
363 }{
364 % dependencies
365 \IfStrEq\manifest@key{\detokenize{dependencies}}{
366 \xdef\manifest@mf@deps{\manifest@line}
367 }{
368 }}}}
369 \parse@manifest@loop
370 \fi
371 }

```

`\parsemanifest` `\parsemanifest{<macroname>}{<path>}` finds MANIFEST.MF via `\findmanifest{<path>}`, and parses the file, storing the individual fields (id, narr, ns and dependencies) in `<macroname>id`, `<macroname>narr`, etc.

```

372 \newread\@manifest
373 \def\parsemanifest#1#2{%
374 \gdef\temp@archive@dir{}%
375 \findmanifest{#2}%
376 \begingroup%
377 \newlinechar=-1
378 \endlinechar=-1
379 \gdef\manifest@mf@id{}%
380 \gdef\manifest@mf@narr{}%
381 \gdef\manifest@mf@ns{}%
382 \gdef\manifest@mf@deps{}%
383 \openin\@manifest\manifest@mf%
384 \parse@manifest@loop%
385 \closein\@manifest%
386 \endgroup%
387 \if@iswindows@\windows@to@path\manifest@mf\fi%
388 \cslet{#1id}\manifest@mf@id%
389 \cslet{#1narr}\manifest@mf@narr%
390 \cslet{#1ns}\manifest@mf@ns%
391 \cslet{#1deps}\manifest@mf@deps%
392 \ifcvoid\manifest@mf@id{-}%
393 \cslet{#1dir}\temp@archive@dir%
394 }%
395 }

```

Test:

id: FOO/BAR

ns: <http://mathhub.info/FOO/BAR>

dir: FOO

`\setcurrentreposinfo` `\setcurrentreposinfo{⟨id⟩}` sets the current repository to `⟨id⟩`, checks if the MANIFEST.MF of this repository has already been read, and if not, find it, parses it and stores the values in `\currentrepos@⟨key⟩@⟨id⟩` for later retrieval.

```
396 \def\setcurrentreposinfo#1{%
397   \edef\mh@currentrepos{#1}%
398   \ifx\mh@currentrepos\empty%
399     \edef\currentrepos@dir{\@Dot}%
400     \def\currentrepos@narr{}%
401     \def\currentrepos@ns{}%
402     \def\currentrepos@id{}%
403     \def\currentrepos@deps{}%
404   \else%
405   \ifcsdef{mathhub@dir@\mh@currentrepos}{%
406     \@inmhrepostrue
407     \edef\mh@currentrepos{#1}%
408     \expandafter\let\expandafter\currentrepos@dir\csname mathhub@dir@#1\endcsname%
409     \expandafter\let\expandafter\currentrepos@narr\csname mathhub@narr@#1\endcsname%
410     \expandafter\let\expandafter\currentrepos@ns\csname mathhub@ns@#1\endcsname%
411     \expandafter\let\expandafter\currentrepos@deps\csname mathhub@deps@#1\endcsname%
412   }{%
413     \parsemanifest{currentrepos@}{\MathHub{#1}}%
414     \@setcurrentreposinfo%
415     \ifcsvoid{currentrepos@dir}{\PackageError{stex}{No archive with %
416       name #1 found!}{make sure that #1 is directly in your MATHHUB folder %
417       and contains a MANIFEST.MF, either directly in #1 or in a meta-inf %
418       subfolder.}}{\@inmhrepostrue}%
419   }%
420   \fi%
421 }
422
423 \def\@setcurrentreposinfo{%
424   \edef\mh@currentrepos{\currentrepos@id}%
425   \ifcsvoid{currentrepos@dir}{%
426     \csxdef{mathhub@dir@\currentrepos@id}{\currentrepos@dir}%
427     \csxdef{mathhub@narr@\currentrepos@id}{\currentrepos@narr}%
428     \csxdef{mathhub@ns@\currentrepos@id}{\currentrepos@ns}%
429     \csxdef{mathhub@deps@\currentrepos@id}{\currentrepos@deps}%
430   }%
431 }
```

Finally – and that is the ultimate goal of all of the above, we set the current repos.

```
432 \newif\if@inmhrepos\@inmhreposfalse
433 \ifcsvoid{stex@maindir}{%
434   \parsemanifest{currentrepos@}{stex@maindir
```

```

435 \@setcurrentreposinfo
436 \ifcvoid{currentrepos@dir}{\PackageWarning{stex}{Not currently in a MathHub repository}}{\%
437 \message{Current repository: \mh@currentrepos}
438 }
439 }

```

3.3 Modules

```

440 \ifmod@show\if@latexml\else\RequirePackage{mdframed}\fi\fi

Aux:
441 \def\ignorespacesandpars{\begingroup\catcode13=10\ifnextchar\relax{\endgroup}{\endgroup}}

and more adapted from http://tex.stackexchange.com/questions/179016/ignore-spaces-and-pars-after-an-environment
442 \def\ignorespacesandparsafterend#1\ignorespaces\fi{#1\fi\ignorespacesandpars}
443 \def\ignorespacesandpars{\ifhmode\unskip\fi\@ifnextchar\par{\expandafter\ignorespacesandpars\g
Options for the module-environment:
444 \addmetakey*{module}{title}
445 \addmetakey*{module}{name}
446 \addmetakey*{module}{creators}
447 \addmetakey*{module}{contributors}
448 \addmetakey*{module}{srccite}
449 \addmetakey*{module}{ns}
450 \addmetakey*{module}{narr}

```

`module@heading` We make a convenience macro for the module heading. This can be customized.

```

451 \ifdef{\thesection}{\newcounter{module}[section]}{\newcounter{module}}%
452 \newrobustcmd{module@heading}{%
453 \stepcounter{module}%
454 \ifmod@show%
455 \noindent{\textbf{Module}} \thesection.\thetitle [\module@name]}%
456 \sref@label@id{Module \thesection.\thetitle [\module@name]}%
457 \ifx\module@title\empty : \quad\else\quad(\module@title)\hfill\\fi%
458 \fi%
459 }%

```

Test:

Module 3.1[Test]: Foo

`module` Finally, we define the begin module command for the module environment. Much of the work has already been done in the keyval bindings, so this is quite simple.

```

460 \newenvironment{module}[1][\%
461 \begin{@module}[#1]%
462 \module@heading% make the headings
463 \ignorespacesandpars\parsemodule@maybesetcodes}{%
464 \end{@module}%
465 \ignorespacesafterend%
466 }%
467 \ifmod@show\surroundwithmdframed{module@om@common}\fi%

```

Some auxiliary methods:

```

468 \def\g@addto@macro@safe#1#2{\ifx#1\relax\def#1{}\fi\g@addto@macro#1{#2}}
469 \def\addto@thismodule#1{%
470   \@ifundefined{this@module}{}{%
471     \expandafter\g@addto@macro@safe\this@module{#1}%
472   }%
473 }
474 \def\addto@thismodulex#1{%
475   \@ifundefined{this@module}{}{%
476     \edef\addto@thismodule@exp{#1}%
477     \expandafter\expandafter\expandafter\g@addto@macro@safe%
478     \expandafter\this@module\expandafter{\addto@thismodule@exp}%
479 }}

```

@module A variant of the `module` environment that does not create printed representations (in particular no frames).

To compute the $\langle uri \rangle$ of a module, `\set@default@ns` computes the namespace, if none is provided as an optional argument, as follows:

If the file of the module is `/some/path/file.tex` and we are not in a MathHub repository, the namespace is `file:///some/path`.

If the file of the module is `/some/path/in/mathhub/repo/sitory/source/sub/file.tex` and `repo/sitory` is an archive in the MathHub root, and the `MANIFEST.MF` of `repo/sitory` declares a namespace `http://some.namespace/foo`, then the namespace of the module is `http://some.namespace/foo/sub`.

```

480 \newif\ifarchive@ns@empty@\archive@ns@empty@false
481 \def\set@default@ns{%
482   \edef\@module@ns@temp{\stex@currpath}%
483   \if@iswindows@\windows@to@path\@module@ns@temp\fi%
484   \archive@ns@empty@false%
485   \ifcvoid{mh@currentrepos}\@archive@ns@empty@true}%
486   {\expandafter\ifx\cname mathhub@ns@\mh@currentrepos\endcsname\@empty\archive@ns@empty@true\fi%
487   }%
488   \ifarchive@ns@empty%
489     \edef\@module@ns@tempuri{file\@Colon\@Slash\@Slash\@module@ns@temp}%
490   \else%
491     \edef\@module@filepath@temppath{\@module@ns@temp}%
492     \edef\@module@ns@tempuri{\cname mathhub@ns@\mh@currentrepos\endcsname}%
493     \edef\@module@archivedirpath{\cname mathhub@dir@\mh@currentrepos\endcsname\@Slash source}%
494     \edef\@module@archivedirpath{\expandafter\detokenize\expandafter{\@module@archivedirpath}}%
495     \IfBeginWith\@module@filepath@temppath\@module@archivedirpath{%
496       \StrLen\@module@archivedirpath[\ns@temp@length]%
497       \StrGobbleLeft\@module@filepath@temppath[\ns@temp@length]\@module@filepath@temprest}%
498     \edef\@module@ns@tempuri{\@module@ns@tempuri\@module@filepath@temprest}%
499   }{}%
500 \fi%
501 \IfEndWith\@module@ns@tempuri\@Slash{\StrGobbleRight\@module@ns@tempuri1[\@module@ns@tempuri]}%
502 \setkeys{module}{ns=\@module@ns@tempuri}%
503 }

```


Test:

<file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-master>

If the module is not given a name, `\set@next@moduleid` computes one by enumeration, e.g. `module0`, `module1`, etc.

```

504 \def\set@next@moduleid{%
505   \unless\ifcsname namespace@\module@ns @unnamedmodules\endcsname%
506     \csgdef{namespace@\module@ns @unnamedmodules}{0}%
507   \fi%
508   \edef\namespace@currnum{\csname namespace@\module@ns @unnamedmodules\endcsname}%
509   \edef\module@temp@setidname{\noexpand\setkeys{module}{name=module\namespace@currnum}}%
510   \module@temp@setidname%
511   \csxdef{namespace@\module@ns @unnamedmodules}{\the\numexpr\namespace@currnum+1}%
512 }

```

Test:

`module0`

`module1`

Finally, the `@module` environment does the actual work, i.e. setting metakeys, computing namespace/id, defining `\this@module`, etc.

For a module with name `\name` (`\module@name`) and uri `\uri` (`\module@uri`), this defines the following macros:

- `\module@defs@<uri>` that acts as a repository for semantic macros of the current module. It will be called by `\importmodule` to activate them.
- We will add the internal forms of the semantic macros whenever `\symdef` is invoked. To do this, we will need an unexpanded form `\this@module` that expands to `\module@defs@<uri>`; we define it first and then initialize `\module@defs@<uri>` as empty.
- `\module@names@<uri>` will store all symbol names declared in this module.
- `\module@imports@<uri>` will store the URIs of all modules directly included in this module
- `\<uri>` that expands to `\invoke@module{<uri>}` (see below).
- `\stex@module@<name>` that expands to `\<uri>`, if unambiguous, otherwise to `ambiguous`.

If we are currently in a mathhub repository, this information will also be stored in `\module@defs@<uri>`, so we can resolve includes properly when this module is activated.

```

513 \newenvironment{@module}[1][{}]{%
514   \metasetkeys{module}{#1}%
515   \ifcsvoid{module@name}{\let\module@name\module@id}{}% % TODO deprecate
516   \ifx\module@ns\empty\set@default@ns\fi%
517   \ifx\module@narr\empty%
518     \setkeys{module}{narr=\module@ns}%

```

```

519 \fi%
520 \ifcvoid{module@name}{\set@next@moduleid}{}%
521 \let\module@id\module@name% % TODO deprecate
522 \edef\module@uri{\module@ns\@QuestionMark\module@name}%
523 \csgdef{module@names@\module@uri}{}%
524 \csgdef{module@imports@\module@uri}{}%
525 \csxdef{\module@uri}{\noexpand\@invoke@module{\module@uri}}%
526 \ifcvoid{stex@module@\module@name}{
527   \expandafter\global\expandafter\let\csname stex@module@\module@name\expandafter\endcsname\c
528 }{
529   \expandafter\edef\csname stex@module@\module@name\endcsname{\detokenize{ambiguous}}
530 }
531 \edef\this@module{%
532   \expandafter\noexpand\csname module@defs@\module@uri\endcsname%
533 }%
534 \csdef{module@defs@\module@uri}{}%
535 \ifcvoid{mh@currentrepos}{}{%
536   \@inmhrepostrue%
537   \addto@thismodule{\expandafter\edef\expandafter\noexpand\csname mh@old@repos@\module@uri\endcsname{
538     {\noexpand\mh@currentrepos}}%
539   \addto@thismodule{\noexpand\setcurrentreposinfo{\mh@currentrepos}}%
540 }%
541 }{%
542   \if@inmhrepos%
543     \@inmhreposfalse%
544     \addto@thismodule{\noexpand\setcurrentreposinfo{\expandafter\noexpand\csname mh@old@repos@\module@uri\endcsname{
545   \fi%
546 }%

```

Test:

Module 3.2[Foo]:

Name: Foo

URI: file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-master?Foo

this@module: macro:->

Test:

Faking a MathHub archive Foo/Bar with URI <http://foo.bar/baz>:

Module 3.3[Foo2]:

Name: Foo2

URI: <http://foo.bar/baz?Foo2>

this@module: macro:->\edef \mh@old@repos@<http://foo.bar/baz?Foo2> {\mh@currentrepos
}\setcurrentreposinfo {Foo/Bar}

Test:

Removing the /home/jazzpirate/work/MathHub/ system variable first:

Module 3.4[Foo]:

Name: Foo

URI: file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-master?Foo

this@module: macro:->Faking a MathHub archive Foo/Bar with URI <http://foo.bar/baz>:

Module 3.5[Foo2]:

Name: Foo2

URI: <http://foo.bar/baz?Foo2>

```
this@module: macro:->\edef \mh@old@repos@http://foo.bar/baz?Foo2 {\mh@currentrepos
}\setcurrentreposinfo {Foo/Bar}
```

A module with URI $\langle uri \rangle$ and id $\langle id \rangle$ creates two macros $\langle uri \rangle$ and $\backslash\text{stex@module@}\langle id \rangle$, that ultimately expand to $\backslash\text{@invoke@module}\{\langle uri \rangle\}$. Currently, the only functionality is $\backslash\text{@invoke@module}\{\langle uri \rangle\}\backslash\text{@URI}$, which expands to the full uri of a module (i.e. via $\backslash\text{stex@module@}\langle id \rangle\backslash\text{@URI}$). In the future, this macro can be extended with additional functionality, e.g. accessing symbols in a macro for overloaded (macro-)names.

```
547 \def\@URI{uri}
548 \def\@invoke@module#1#2{%
549   \ifx\@URI#2%
550     #1%
551   \else%
552     % TODO something else
553     #2%
554   \fi%
555 }
```

3.4 Inheritance

3.4.1 Selective Inclusion

The next great goal is to establish the $\backslash\text{requiremodules}$ macro, which reads an \LaTeX file and processes all the module signature information in them, but does not produce any output. This is a tricky business, as we need to “parse” the modules and treat the module signature macros specially (we refer to this as “**sms mode**”, since it is equivalent to what the – now deprecated – **sms** utility did).

In the following we introduce a lot of auxiliary functionality before we can define $\backslash\text{requiremodules}$.

$\backslash\text{parsemodule@allow*}$ The first step is setting up a functionality for registering \LaTeX macros and environments as part of a module signature.

```
556 \newif\if@smsmode\@smsmodefalse
557 \def\parsemodule@escapechar@allowed{true}
558 \def\parsemodule@allow#1{
559   \expandafter\let\csname parsemodule@allowedmacro@#1\endcsname\parsemodule@escapechar@allowed
560 }
561 \def\parsemodule@allowenv#1{
562   \expandafter\let\csname parsemodule@allowedenv@#1\endcsname\parsemodule@escapechar@allowed
563 }
564 \def\parsemodule@escapechar@beginstring{begin}
565 \def\parsemodule@escapechar@endstring{end}
```

and now we use that to actually register all the \LaTeX functionality as relevant for **sms** mode.

```
566 \parsemodule@allow{symdef}
567 \parsemodule@allow{abbrdef}
```

```

568 \parsemodule@allow{importmodule}
569 \parsemodule@allowenv{module}
570 \parsemodule@allow{importmhmodule}
571 \parsemodule@allow{gimport}
572 \parsemodule@allowenv{modsig}
573 \parsemodule@allowenv{mhmodsig}
574 \parsemodule@allowenv{mhmodnl}
575 \parsemodule@allowenv{modnl}
576 \parsemodule@allow{symvariant}
577 \parsemodule@allow{symi}
578 \parsemodule@allow{symii}
579 \parsemodule@allow{symiii}
580 \parsemodule@allow{symiv}
581 \parsemodule@allow{notation}
582 \parsemodule@allow{verbalization}
583 \parsemodule@allow{symdecl}
584
585 % to deprecate:
586
587 \parsemodule@allow{defi}
588 \parsemodule@allow{defii}
589 \parsemodule@allow{defiii}
590 \parsemodule@allow{defiv}
591 \parsemodule@allow{adefi}
592 \parsemodule@allow{adefii}
593 \parsemodule@allow{adefiii}
594 \parsemodule@allow{adefiv}
595 \parsemodule@allow{defis}
596 \parsemodule@allow{defiis}
597 \parsemodule@allow{defiiis}
598 \parsemodule@allow{defivs}
599 \parsemodule@allow{Defi}
600 \parsemodule@allow{Defii}
601 \parsemodule@allow{Defiii}
602 \parsemodule@allow{Defiv}
603 \parsemodule@allow{Defis}
604 \parsemodule@allow{Defiis}
605 \parsemodule@allow{Defiiis}
606 \parsemodule@allow{Defivs}

```

To read external modules without producing output, `\requiremodules` redefines the `\`-character to be an *active* character that, instead of executing a macro, checks whether a macro name has been registered using `\parsemodule@allow` before selectively executing the corresponding macro or ignoring it. To produce the relevant code, we therefore define a macro `\@active@slash` that produces a `\`-character with category code 13 (*active*), as well as `\@open@brace` and `\@close@brace`, which produce open and closing braces with category code 12 (*other*).

```

607 \catcode'\.=0

```

```

608 .catcode'\=13
609 .def.@active@slash{\}
610 .catcode'.<=1
611 .catcode'.>=2
612 .catcode'.{=12
613 .catcode'.}=12
614 .def.@open@brace{<{>
615 .def.@close@brace{>}
616 .catcode'\=0
617 \catcode'\.=12
618 \catcode'\{=1
619 \catcode'\}=2
620 \catcode'\<=12
621 \catcode'\>=12

```

The next two macros set and reset the category codes before/after `sms` mode.

`\set@parsemodule@catcodes`

```

622 \def\set@parsemodule@catcodes{%
623   \global\catcode'\=13%
624   \global\catcode'\#=12%
625   \global\catcode'\{=12%
626   \global\catcode'\}=12%
627   \global\catcode'\$=12%$
628   \global\catcode'\^=12%
629   \global\catcode'\_ =12%
630   \global\catcode'\&=12%
631   \expandafter\let\@active@slash\parsemodule@escapechar%
632 }

```

`\reset@parsemodule@catcodes`

```

633 \def\reset@parsemodule@catcodes{%
634   \global\catcode'\=0%
635   \global\catcode'\#=6%
636   \global\catcode'\{=1%
637   \global\catcode'\}=2%
638   \global\catcode'\$=3%$
639   \global\catcode'\^=7%
640   \global\catcode'\_ =8%
641   \global\catcode'\&=4%
642 }

```

`\parsemodule@maybesetcodes`

Before a macro is executed in `sms`-mode, the category codes will be reset to normal, to ensure that all macro arguments are parsed correctly. Consequently, the macros need to set the category codes back to `sms` mode after having read all arguments iff the macro got executed in `sms` mode. `\parsemodule@maybesetcodes` takes care of that.

```

643 \def\parsemodule@maybesetcodes{%
644   \if@smsmode\set@parsemodule@catcodes\fi%
645 }

```

`\parsemodule@escapechar` This macro gets called whenever a `\`-character occurs in `sms` mode. It is split into several macros that parse and store characters in `\parsemodule@escape@currcls` until a character with category code $\neq 11$ occurs (i.e. the macro name is complete), check whether the macro is allowed in `sms` mode, and then either ignore it or execute it after setting category codes back to normal. Special care needs to be taken to make sure that braces have the right category codes (1 and 2 for open and closing braces, respectively) when delimiting macro arguments.

Entry point:

```

646
647 \def\parsemodule@escapechar{%
648   \def\parsemodule@escape@currcls{}%
649   \parsemodule@escape@parse@nextchar%
650 }%

```

The next macro simply reads the next character and checks whether it has category code 11. If so, it stores it in `\parsemodule@escape@currcls`. Otherwise, the macro name is complete, it stores the last character in `\parsemodule@last@char` and calls `\parsemodule@escapechar@checkcls`.

```

651 \long\def\parsemodule@escape@parse@nextchar@#1{%
652   \ifcat a#1\relax%
653     \edef\parsemodule@escape@currcls{\parsemodule@escape@currcls#1}%
654     \let\parsemodule@do@next\parsemodule@escape@parse@nextchar%
655   \else%
656     \def\parsemodule@last@char{#1}%
657     \ifx\parsemodule@escape@currcls\@empty%
658       \def\parsemodule@do@next{}%
659     \else%
660       \def\parsemodule@do@next{\parsemodule@escapechar@checkcls}%
661     \fi%
662   \fi%
663   \parsemodule@do@next%
664 }

```

The next macro checks whether the currently stored macroname is allowed in `sms` mode. There are four cases that need to be considered: `\begin`, `\end`, allowed macros, and others. In the first two cases, we reinsert `\parsemodule@last@char` and continue with `\parsemodule@escapechar@checkbeginenv` or `\parsemodule@escapechar@checkendenv` respectively, to check whether the environment being opened/closed is allowed in `sms` mode. In both cases, `\parsemodule@last@char` is an open brace with category code 12. In the third case, we need to check whether `\parsemodule@last@char` is an open brace, in which case we call `\parsemodule@converttoproperbraces`, otherwise, we set category codes to normal and execute the macro. In the fourth case, we just reinsert `\parsemodule@last@char` and continue.

```

665 \def\parsemodule@escapechar@checkcls{%
666   \ifx\parsemodule@escape@currcls\parsemodule@escapechar@beginstring%
667     \edef\parsemodule@do@next{\noexpand\parsemodule@escapechar@checkbeginenv\parsemodule@last@char}%
668   \else%
669     \ifx\parsemodule@escape@currcls\parsemodule@escapechar@endstring%

```

```

670         \edef\parsemodule@do@next{\noexpand\parsemodule@escapechar@checkendenv\parsemodule@la
671     \else%
672         \expandafter\ifx\csname parsemodule@allowedmacro@\parsemodule@escape@curr\endcsna
673             \parsemodule@escapechar@allowed%
674         \ifx\parsemodule@last@char\@open@brace%
675             \expandafter\let\expandafter\parsemodule@do@next@ii\csname\parsemodule@escape@c
676             \edef\parsemodule@do@next{\noexpand\parsemodule@converttoproperbraces\@open@bra
677         \else%
678             \reset@parsemodule@catcodes%
679             \edef\parsemodule@do@next{\expandafter\noexpand\csname\parsemodule@escape@curr
680         \fi%
681     \else\def\parsemodule@do@next{\relax\parsemodule@last@char}\fi%
682 \fi%
683 \fi%
684 \parsemodule@do@next%
685 }

```

This macro simply takes an argument in braces (with category codes 12), reinserts it with “proper” braces (category codes 1 and 2), sets category codes back to normal and calls `\parsemodule@do@next@ii`, which has been `\let` as the macro to be executed.

```

686 \expandafter\expandafter\expandafter\def%
687 \expandafter\expandafter\expandafter\parsemodule@converttoproperbraces%
688 \expandafter\@open@brace\expandafter#\expandafter1\@close@brace{%
689     \reset@parsemodule@catcodes%
690     \parsemodule@do@next@ii{#1}%
691 }

```

The next two macros apply in the `\begin` and `\end` cases. They check whether the environment is allowed in sms mode, if so, open/close the environment, and otherwise do nothing.

Notably, `\parsemodule@escapechar@checkendenv` does not set category codes back to normal, since `\end{environment}` never takes additional arguments that need to be parsed anyway.

```

692 \expandafter\expandafter\expandafter\def%
693 \expandafter\expandafter\expandafter\parsemodule@escapechar@checkbeginenv%
694 \expandafter\@open@brace\expandafter#\expandafter1\@close@brace{%
695     \expandafter\ifx\csname parsemodule@allowedenv@#1\endcsname\parsemodule@escapechar@allowed%
696         \reset@parsemodule@catcodes%
697         \def\parsemodule@do@next{\begin{#1}}%
698     \else%
699         \def\parsemodule@do@next{#1}%
700     \fi%
701     \parsemodule@do@next%
702 }
703 \expandafter\expandafter\expandafter\def%
704 \expandafter\expandafter\expandafter\parsemodule@escapechar@checkendenv%
705 \expandafter\@open@brace\expandafter#\expandafter1\@close@brace{%
706     \expandafter\ifx\csname parsemodule@allowedenv@#1\endcsname\parsemodule@escapechar@allowed%

```

```

707      %\reset@parsemodule@catcodes%
708      \def\parsemodule@do@next{\end{#1}}%
709  \else%
710      \def\parsemodule@do@next{#1}%
711  \fi%
712  \parsemodule@do@next%
713 }

```

`\@requiremodules` the internal version of `\requiremodules` for use in the `*.aux` file. We disable it at the end of the document, so that when the `aux` file is read again, nothing is loaded.

```

714 \newrobustcmd\@requiremodules[1]{%
715   \if@tempswa\requiremodules{#1}\fi%
716 }%

```

`\requiremodules` This macro loads the module signatures in a file using the `\requiremodules@smsmode` above. We set the flag `\mod@showfalse` in the local group, so that the macros know now to pollute the result.

```

717 \newrobustcmd\requiremodules[1]{%
718   \mod@showfalse%
719   \edef\mod@path{#1}%
720   \edef\mod@path{\expandafter\detokenize\expandafter{\mod@path}}%
721   \requiremodules@smsmode{#1}%
722 }%

```

`\requiremodules@smsmode` this reads `SIEX` modules by setting the category codes for `sms` mode, `\inputting` the required file and wrapping it in a `\vbox` that gets stored away and ignored, in order to not produce any output. It also sets `\hbadness`, `\hfuzz` and friends to values that suppress overfull and underfull hbox messages.

```

723 \newbox\modules@import@tempbox
724 \def\requiremodules@smsmode#1{%
725   \setbox\modules@import@tempbox\vbox{%
726     \@smsmodetrue%
727     \set@parsemodule@catcodes%
728     \hbadness=100000\relax%
729     \hfuzz=10000pt\relax%
730     \vbadness=100000\relax%
731     \vfuzz=10000pt\relax%
732     \stexinput{#1.tex}%
733     \reset@parsemodule@catcodes%
734   }%
735   \parsemodule@maybesetcodes%
736 }

```

Test:

parsing `FOO/testmodule.tex`

macro:->`\@invoke@module {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-master/FOO?testmodule}`

3.4.2 importmodule

`\importmodule@bookkeeping`

```

737 \newif\if@importmodule@switchrepos\@importmodule@switchreposfalse
738 \def\importmodule@bookkeeping#1#2#3{%
739   \@importmodule@switchreposfalse%
740   \metasetkeys{importmodule}{#1}%
741   \ifcvoid{importmodule@mhrepos}{%
742     \ifcvoid{currentrepos@dir}{%
743       \let\importmodule@dir\stex@maindir%
744     }{%
745       \edef\importmodule@dir{\currentrepos@dir\@Slash source}%
746     }%
747   }{%
748     \@importmodule@switchrepostrue%
749     \expandafter\let\csname importmodule@oldrepos@#2\endcsname\mh@currentrepos%
750     \setcurrentreposinfo\importmodule@mhrepos%
751     \edef\importmodule@dir{\currentrepos@dir\@Slash source}%
752   }%
753   \StrCut{#2}\@QuestionMark\importmodule@subdir\importmodule@modulename%
754   \ifx\importmodule@modulename\@empty%
755     \let\importmodule@modulename\importmodule@subdir%
756     \let\importmodule@subdir\@empty%
757   \else%
758     \ifx\importmodule@subdir\@empty\else%
759       \edef\importmodule@dir{\importmodule@dir\@Slash\importmodule@subdir}%
760     \fi%
761   \fi%
762   #3%
763   \if@importmodule@switchrepos%
764     \expandafter\setcurrentreposinfo\csname importmodule@oldrepos@#2\endcsname%
765   \fi%
766   \ignorespacesandpars%
767 }

```

`\importmodule`

```

768 %\srefaddidkey{importmodule}
769 \addmetakey{importmodule}{mhrepos}
770 \newcommand\importmodule[2][\@importmodule{#1}{#2}{export}]
771 \newcommand\@importmodule[3][\@importmodule@bookkeeping{#1}{#2}{%
772   \importmodule@bookkeeping{#1}{#2}{%
773     \@importmodule[\importmodule@dir]\importmodule@modulename{#3}%
774   }%
775 }

```

`\@importmodule` `\@importmodule[\<filepath>]{\<mod>}{\<export?>}` loads `\<filepath>.tex` and activates the module `\<mod>`. If `\<export?>` is `export`, then it also re-exports the `\symdefs` from `\<mod>`.

First `\load` will store the base file name with full path, then check if `\module@<mod>@path` is defined. If this macro is defined, a module of this name

has already been loaded, so we check whether the paths coincide, if they do, all is fine and we do nothing otherwise we give a suitable error. If this macro is undefined we load the path by `\requiremodules`.

```

776 \newcommand\@importmodule[3][\]{%
777 {%
778   \edef\@load{#1}%
779   \edef\@importmodule@name{#2}
780   \if@smsmode\else\ifcsvoid{stex@module@\@importmodule@name}{% TODO check this
781     \stexiffileexists\@load{\requiremodules\@load}{%
782       \requiremodules{\@load\@Slash\@importmodule@name}%
783     }%
784   }\fi%
785   \ifx\@load\@empty\else%
786     {% TODO
787       \edef\@path{csname module@#2@path\endcsname}%
788       \IfStrEq\@load\@path{\relax}% if the known path is the same as the requested one do nothing
789       {\PackageError{stex}{% else signal an error
790         {Module Name Clash\MessageBreak%
791           A module with name #2 was already loaded under the path "\@path"\MessageBreak%
792           The imported path "\@load" is probably a different module with the\MessageBreak%
793           same name; this is dangerous -- not importing}%
794         {Check whether the Module name is correct}%
795       }%
796     }%
797   \fi%
798   \global\let\@importmodule@load\@load%
799 }%
800 \edef\@export{#3}\def\@@export{export}%prepare comparison
801 %\ifx\@export\@@export\export@defs{#2}\fi% export the module
802 \ifx\@export\@@export\addto@thismodulex{%
803   \noexpand\@importmodule[\@importmodule@load]{#2}{noexport}%
804 }%
805 \if@smsmode\else
806 \ifcsvoid{this@module}{\fi%
807   \ifcsvoid{module@imports@\module@uri}{%
808     \csxdef{module@imports@\module@uri}{%
809       \csname stex@module@#2\endcsname\@URI% TODO check this
810     }%
811   }\fi%
812   \csxdef{module@imports@\module@uri}{%
813     \csname stex@module@#2\endcsname\@URI,% TODO check this
814     \csname module@imports@\module@uri\endcsname%
815   }%
816 }%
817 }%
818 \fi\fi%
819 \if@smsmode\else\activate@defs{#2}\fi% activate the module
820 }%

```

Test:

```

\importmodule {testmoduleimporta}:
macro:->\@invoke@module {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-
master?testmoduleimporta}
macro:->\@invoke@symbol {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-
master?testmoduleimporta?foo}
Test:
\importmodule {testmoduleimportb?importb}:
macro:->\@invoke@module {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-
master?importb}
macro:->\@invoke@symbol {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-
master?importb?bar}
Test:
macro:->\@invoke@module {http://mathhub.info/smglob/algebra?band}
macro:->\@invoke@module {http://mathhub.info/smglob/algebra?idempotent}
macro:->\@invoke@symbol {http://mathhub.info/smglob/mv?equal?notequal}
macro:->\@ifstar \@import@star \@gimport@nostar

```

Default document module:

```

821 \AtBeginDocument{%
822   \set@default@ns%
823   \ifx\module@narr\@empty\setkeys{module}{narr=\module@ns}\fi%
824   \let\module@name\jobname%
825   \let\module@id\module@name % TODO deprecate
826   \edef\module@uri{\module@ns\@QuestionMark\module@name}%
827   \csgdef{module@names@\module@uri}{}%
828   \csgdef{module@imports@\module@uri}{}%
829   \csxdef{\module@uri}{\noexpand\@invoke@module{\module@uri}}%
830   \expandafter\global\expandafter\let\csname stex@module@\module@name\expandafter\endcsname\csname
831   \edef\this@module{%
832     \expandafter\noexpand\csname module@defs@\module@uri\endcsname%
833   }%
834   \csdef{module@defs@\module@uri}{}%
835   \ifcvoid{mh@currentrepos}{}%
836     \inmhrepostrue%
837     \addto@thismodule{\expandafter\edef\expandafter\noexpand\csname mh@old@repos@\module@uri\endcsname
838       {\noexpand\mh@currentrepos}}%
839     \addto@thismodule{\noexpand\setcurrentreposinfo{\mh@currentrepos}}%
840   }%
841 }

```

`\activate@defs` To activate the `\symdefs` from a given module $\langle mod \rangle$, we call the macro `\module@defs@ $\langle mod \rangle$` . But to make sure that every module is activated only once, we only activate if the macro `\module@defs@ $\langle mod \rangle$` is undefined, and define it directly afterwards to prohibit further activations.

```

842 \def\activate@defs#1{%
843   \ifcsundef{stex@module@#1}{ % TODO check this
844     \PackageError{stex}{No module with name #1 loaded}{Probably missing an
845       \detokenize{\importmodule} (or variant) somewhere?

```

```

846     }
847   }{%
848     \ifcsundef{module@\csname stex@module@#1\endcsname\@URI @activated}%
849     {\csname module@defs@\csname stex@module@#1\endcsname\@URI\endcsname}{}}%
850     \namedef{module@\csname stex@module@#1\endcsname\@URI @activated}{true}%
851   }%
852 }%

\usemodule \usemodule acts like \importmodule, except that it does not re-export the se-
semantic macros in the modules it loads.
853 \newcommand\usemodule[2] [] {\@importmodule[#1]{#2}{noexport}}

Test:
Module 3.26[Foo]:
Module 3.27[Bar]: macro:->\@invoke@symbol {file:///home/jazzpirate/work/Software/ext/sTeX/sty/
master?Foo?foo}
Module 3.28[Baz]: undefined
macro:->\@invoke@symbol {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-
master?Bar?bar}

\inputref@*skip hooks for spacing customization, they are empty by default.
854 \def\inputref@preskip{}
855 \def\inputref@postskip{}

\inputref \inputref{path to the current file without extension} supports both absolute
path and relative path, meanwhile, records the path and the extension (not for
relative path).
856 \newrobustcmd\inputref[2] [] {%
857   \importmodule@bookkeeping{#1}{#2}{%
858     %\inputreftrue
859     \inputref@preskip%
860     \stexinput{\importmodule@dir\@Slash\importmodule@modulename.tex}%
861     \inputref@postskip%
862   }%
863 }%

```

3.5 Symbols/Notations/Verbalizations

```

\if@symdeflocal A flag whether a symbol declaration is local (i.e. does not get exported) or not.
864 \newif\if@symdeflocal\@symdeflocalfalse

\define@in@module calls \edef\#1{#2} and adds the macro definition to \this@module
865 \def\define@in@module#1#2{
866   \expandafter\edef\csname #1\endcsname{#2}%
867   \edef\define@in@module@temp{%
868     \def\expandafter\noexpand\csname#1\endcsname%
869     {#2}%
870   }%
871   \if@symdeflocal\else%

```

```

872 \expandafter\g@addto@macro@safe\csname module@defs@\module@uri%
873 \expandafter\endcsname\expandafter{\define@in@module@temp}%
874 \fi%
875 }

\symdecl \symdecl[name=foo]{bar} Declares a new symbol in the current module with
URI  $\langle module-uri \rangle ?foo$  and defines new macros  $\langle uri \rangle$  and  $\bar$ . If no optional
name is given,  $\bar$  is used as a name.

876 \addmetakey{symdecl}{name}%
877 \addmetakey{symdecl}{verbalization}%
878
879 % constructs a symbol name and a verbalization by splitting at exclamation
880 % points - e.g. \symdecl{symmetric!group} leads to name=symmetric-group
881 % and verbalization "symmetric group".
882 \def\symdecl@constructname#1{%
883 \def\symdecl@name{}}%
884 \def\symdecl@verbalization{}}%
885 \edef\symdecl@tempname{#1}%
886 \symdecl@constructname@loop%
887 }
888
889 \def\symdecl@constructname@loop{%
890 \ifx\symdecl@tempname\@empty\else%
891 \StrCut\symdecl@tempname!\symdecl@tempfirst\symdecl@tempname%
892 \ifx\symdecl@name\@empty%
893 \let\symdecl@name\symdecl@tempfirst%
894 \let\symdecl@verbalization\symdecl@tempfirst%
895 \symdecl@constructname@loop%
896 \else%
897 \edef\symdecl@name{\symdecl@name-\symdecl@tempfirst}%
898 \edef\symdecl@verbalization{\symdecl@verbalization\@Space\symdecl@tempfirst}%
899 \symdecl@constructname@loop%
900 \fi%
901 \fi%
902 }
903
904 \newcommand\symdecl[2] [] {%
905 \ifcsdef{this@module}{%
906 \metasetkeys{symdecl}{#1}%
907 \ifcsvoid{symdecl@name}{%
908 \ifcsvoid{symdecl@verbalization}{%
909 \symdecl@constructname{#2}%
910 }{%
911 \edef\symdecl@name{#2}%
912 }%
913 }{%
914 \ifcsvoid{symdecl@verbalization}{\edef\symdecl@verbalization{#2}}{}}%
915 }%
916 \edef\symdecl@uri{\module@uri\@QuestionMark\symdecl@name}%

```

```

917 \ifcsvoid{stex@symbol@\symdecl@name}{
918   \expandafter\edef\csname stex@symbol@\symdecl@name\endcsname{\symdecl@uri}
919 }{
920   \expandafter\def\csname stex@symbol@\symdecl@name\endcsname{\detokenize{ambiguous}}
921 }
922 \edef\symdecl@symbolmacro{
923   \noexpand\ifcsvoid{stex@symbol@\symdecl@name}{
924     \expandafter\edef\expandafter\noexpand\csname stex@symbol@\symdecl@name\endcsname{\symdecl@uri}
925   }{
926     \expandafter\def\expandafter\noexpand\csname stex@symbol@\symdecl@name\endcsname{\detokenize{ambiguous}}
927   }
928 }
929 \expandafter\g@addto@macro@safe\csname module@defs@\module@uri%
930 \expandafter\endcsname\expandafter{\symdecl@symbolmacro}%
931 \ifcsvoid{\symdecl@uri}{
932   \ifcsvoid{module@names@\module@uri}{%
933     \csxdef{module@names@\module@uri}{\symdecl@name}%
934   }{%
935     \csxdef{module@names@\module@uri}{\symdecl@name,%
936       \csname module@names@\module@uri\endcsname}%
937   }%
938 }{%
939   % not compatible with circular dependencies, e.g. test/omdoc/07-modules/sms testa.tex
940   \PackageWarning{stex}{symbol already defined: \symdecl@uri}{%
941     You need to pick a fresh name for your symbol%
942   }%
943 }%
944 \define@in@module\symdecl@uri{\noexpand\@invoke@symbol{\symdecl@uri}}%
945 \define@in@module{#2}{\noexpand\@invoke@symbol{\symdecl@uri}}%
946 \global\expandafter\let\csname\symdecl@uri\@Fragment verb\@Fragment\endcsname\symdecl@verb
947 }{%
948   \PackageError{stex}{\detokenize{\symdecl} not in a module}{You need to be in a module%
949     in order to declare a new symbol}
950 }%
951 \ifinsymdef@\else\parsemodule@maybesetcodes\fi%
952 }

```

Test:

Module 3.29[foo]: \symdecl {bar}

Yields: macro:->\@invoke@symbol {file:///home/jazzpirate/work/Software/ext/sTeX/sty/stex-master?foo?bar}

3.5.1 Notations

\modules@getURIfromName This macro searches for the full URI given a symbol name and stores it in \notation@uri. Used by e.g. \notation[...]{foo}{...} to figure out what symbol foo refers to:

```

953 \edef\stex@ambiguous{\detokenize{ambiguous}}
954 \edef\stex@macrostring{\detokenize{macro:->\@invoke@symbol}}
955 \def\modules@getURIfromName#1{%

```

```

956 \def\notation@uri{}%
957 \edef\modules@getURI@name{#1}%
958 \ifcsvoid{\modules@getURI@name}{
959   \edef\modules@temp@meaning{
960 }{
961   \edef\modules@temp@meaning{\expandafter\meaning\csname\modules@getURI@name\endcsname}
962 }
963 \IfBeginWith\modules@temp@meaning\stex@macrostring{
964   % is a \@invoke@symbol macro
965   \StrPosition\modules@temp@meaning\@close@brace[\stex@tempnum]
966   \StrMid\modules@temp@meaning{26}{\the\numexpr\stex@tempnum-1\@Space}{\notation@uri}
967 }{
968   % Check whether full URI or module?symbol or just name
969   \StrCount\modules@getURI@name\@QuestionMark[\isuri@number]
970   \ifnum\isuri@number=2
971     \edef\notation@uri{\modules@getURI@name}
972   \else
973     \ifnum\isuri@number=1
974       % module?name
975       \StrCut\modules@getURI@name\@QuestionMark\isuri@mod\isuri@name
976       \ifcsvoid{stex@module@\isuri@mod}{
977         \PackageError{stex}{No module with name \isuri@mod\@Space loaded}{}
978       }{
979         \expandafter\ifx\csname stex@module@\isuri@mod\endcsname\stex@ambiguous
980         \PackageError{stex}{Module name \isuri@mod\@Space is ambiguous}{}
981       }
982       \edef\notation@uri{\csname stex@module@\isuri@mod\endcsname\@URI\@QuestionMark\isuri@name}
983     \fi
984   }
985   \else
986     %name
987     \ifcsvoid{stex@symbol@\modules@getURI@name}{
988       \PackageError{stex}{No symbol with name \modules@getURI@name\@Space known}{}
989     }{
990       \ifcsvoid{\module@uri\@QuestionMark\modules@getURI@name}{
991         \expandafter\ifx\csname stex@symbol@\modules@getURI@name\endcsname\stex@ambiguous
992         % Symbol name ambiguous and not in current module
993         \PackageError{stex}{Symbol name, URI or macroname \detokenize{#1} found!}{}%
994       }
995       \else
996         % Symbol not in current module, but unambiguous
997         \edef\notation@uri{\csname stex@symbol@\modules@getURI@name\endcsname}
998       \fi
999     }{ % Symbol in current module
1000       \edef\notation@uri{\module@uri\@QuestionMark\modules@getURI@name}
1001     }
1002   \fi
1003 }
1004 }
1005 }

```

```

\notation Adds a new notation to a symbol foo, as in: \notation[lang=en,arity=0,variant=op]{foo}{...}
\notation[variant=bar]{foo}[2]{...} \notation[args=aia,prec=500;50x49x51]{foo}{#1 bla #2
  TODO with brackets, e.g. \notation[withbrackets={\langle,\rangle}]{foo}{...}

1006 \newif@if@inverbalization\@inverbalizationfalse
1007 % parses the first two arguments:
1008 \providerobustcmd\notation[2][ ]{%
1009   \edef\notation@first{#1}%
1010   \edef\notation@second{#2}%
1011   \notation@%
1012 }
1013
1014 \providerobustcmd\verbalization{%
1015   \@inverbalizationtrue%
1016   \notation%
1017 }
1018
1019 % parses the last two arguments
1020 \newcommand\notation@[2][0]{%
1021   \edef\notation@donext{\noexpand\notation@[ \notation@first]%
1022     {\notation@second}[#1]}%
1023   \notation@donext{#2}%
1024 }
1025
1026 % parses the notation arguments and wraps them in
1027 % \notation@assoc and \notation@argprec for flexary arguments and precedences
1028 \def\notation@[#1]#2[#3]#4{%
1029   \modules@getURIfromName{#2}%
1030   \notation@parse@params{#1}{#3}
1031   \let\notation@curr@todo@args\notation@curr@args%
1032   \def\notation@temp@notation{%
1033     \StrLen\notation@curr@args[\notation@temp@arity]%
1034     \expandafter\renewcommand\expandafter\notation@temp@notation%
1035       \expandafter[\notation@temp@arity]{#4}%
1036     % precedence
1037     \IfSubStr\notation@curr@prec;{%
1038       \StrCut\notation@curr@prec;\notation@curr@prec\notation@curr@prec%
1039       \ifx\notation@curr@prec\@empty\def\notation@curr@prec{0}\fi%
1040     }{%
1041       \ifx\notation@curr@prec\@empty%
1042         \ifnum\notation@temp@arity=0\relax%
1043           \edef\notation@curr@prec{\infprec}%
1044         \else%
1045           \def\notation@curr@prec{0}%
1046         \fi%
1047       \else%
1048         \edef\notation@curr@prec{\notation@curr@prec}%
1049         \def\notation@curr@prec{}%
1050       \fi%
1051     }%

```



```

1052 % arguments
1053 \def\notation@curr@extargs{}
1054 \def\notation@nextarg@index{1}%
1055 \notation@do@args%
1056 }
1057
1058 % parses additional notation components for (associative) arguments
1059 \def\notation@do@args{%
1060   \def\notation@nextarg@temp{}%
1061   \ifx\notation@curr@todo@args\@empty%
1062     \notation@after%
1063   \else%
1064     % argument precedence
1065     \IfSubStr\notation@curr@prec{s}{x}{%
1066       \StrCut\notation@curr@prec{s}{x}\notation@curr@argprec\notation@curr@prec%
1067     }{%
1068       \edef\notation@curr@argprec{\notation@curr@prec}%
1069       \def\notation@curr@prec{}%
1070     }%
1071     \ifx\notation@curr@argprec\@empty%
1072       \let\notation@curr@argprec\notation@curr@prec%
1073     \fi%
1074     \StrChar\notation@curr@todo@args1[\notation@argchar]%
1075     \StrGobbleLeft\notation@curr@todo@args1[\notation@curr@todo@args]%
1076     \expandafter\ifx\notation@argchar i%
1077       % normal argument
1078       \edef\notation@nextarg@temp{\noexpand\notation@argprec{\notation@curr@argprec}{#####\
1079       \edef\notation@nextarg@index{\the\numexpr\notation@nextarg@index+1 }
1080       \expandafter\g@addto@macro@safe\expandafter\notation@curr@extargs%
1081       \expandafter{\notation@nextarg@temp}%
1082       \expandafter\expandafter\expandafter\notation@do@args%
1083     \else%
1084       % associative argument
1085       \expandafter\expandafter\expandafter\notation@parse@assocarg%
1086     \fi%
1087   \fi%
1088 }
1089
1090 \def\notation@parse@assocarg#1{%
1091   \edef\notation@nextarg@temp{\noexpand\notation@argprec{\notation@curr@argprec}{\noexpand\not
1092   \edef\notation@nextarg@index{\the\numexpr\notation@nextarg@index+1 }%
1093   \expandafter\g@addto@macro@safe\expandafter\notation@curr@extargs%
1094   \expandafter{\notation@nextarg@temp}%
1095   \notation@do@args%
1096 }
1097
1098 \protected\def\safe@newcommand#1{%
1099   \ifdefined#1\expandafter\renewcommand\else\expandafter\newcommand\fi#1%
1100 }
1101

```

```

1102 % finally creates the actual macros
1103 \def\notation@after{
1104   \let\ex\expandafter%
1105   \ex\ex\ex\def\ex\ex\ex\notation@temp@notation\ex\ex\ex%
1106     {\ex\notation@temp@notation\notation@curr@extargs}%
1107   \edef\notation@temp@notation{\noexpand\notation@symprec{\notation@curr@prec}{\ex\unexpanded\ex%
1108     \def\notation@temp@fragment{}}%
1109   \ifx\notation@curr@arity\@empty\else%
1110     \edef\notation@temp@fragment{arity=\notation@curr@arity}%
1111   \fi%
1112   \ifx\notation@curr@lang\@empty\else%
1113     \ifx\notation@temp@fragment\@empty%
1114       \edef\notation@temp@fragment{lang=\notation@curr@lang}%
1115     \else%
1116       \edef\notation@temp@fragment{\notation@temp@fragment\@Ampersand lang=\notation@curr@lang}%
1117     \fi%
1118   \fi%
1119   \ifx\notation@curr@variant\@empty\else%
1120     \ifx\notation@temp@fragment\@empty%
1121       \edef\notation@temp@fragment{variant=\notation@curr@variant}%
1122     \else%
1123       \edef\notation@temp@fragment{\notation@temp@fragment\@Ampersand variant=\notation@curr@va
1124     \fi%
1125   \fi%
1126   \if@inverbalization\@inverbalizationfalse\verbalization@final%
1127   \else\notation@final\fi%
1128   \parsemodule@maybesetcodes%
1129 }
1130
1131 \def\notation@final{%
1132   \edef\notation@csname{\notation@uri\@Fragment\notation@temp@fragment}%
1133   \ifcsvoid{\notation@csname}{%
1134     \ex\ex\ex\ex\ex\ex\ex\newcommand\ex\ex\ex\csname\ex\ex\ex\notation@csname%
1135       \ex\ex\ex\endcsname\ex\ex\ex[\ex\notation@temp@arity\ex]%
1136     \ex{\notation@temp@notation}%
1137     \edef\symdecl@temps{%
1138       \noexpand\safe@newcommand\ex\noexpand\csname\notation@csname\endcsname[\notation@temp@ari
1139     }%
1140     \ex\g@addto@macro@safe\csname module@defs@\module@uri\ex\endcsname\ex{\symdecl@temps}%
1141     \ex\g@addto@macro@safe\csname module@defs@\module@uri\ex\endcsname\ex{\ex{\notation@temp@no
1142   }{%
1143     \PackageWarning{stex}{notation already defined: \notation@csname}{%
1144       Choose a different set of notation options (variant,lang,arity)%
1145     }%
1146   }%
1147 }
1148
1149 \def\verbalization@final{%
1150   \edef\notation@csname{\notation@uri\@Fragment verb\@Fragment\notation@temp@fragment}%
1151   \ifcsvoid{\notation@csname}{%

```

```

1152 \ex\ex\ex\ex\ex\ex\ex\newcommand\ex\ex\ex\csname\ex\ex\ex\notation@csname%
1153 \ex\ex\ex\endcsname\ex\ex\ex[\ex\notation@temp@arity\ex]%
1154 \ex{\notation@temp@notation}%
1155 \edef\symdecl@temps{%
1156 \noexpand\safe@newcommand\ex\noexpand\csname\notation@csname\endcsname[\notation@temp@ari
1157 }%
1158 \ex@g@addto@macro@safe\csname module@defs@\module@uri\ex\endcsname\ex{\symdecl@temps}%
1159 \ex@g@addto@macro@safe\csname module@defs@\module@uri\ex\endcsname\ex{\ex{\notation@temp@no
1160 }-%
1161 \PackageWarning{stex}{verbalization already defined: \notation@csname}%
1162 Choose a different set of verbalization options (variant,lang,arity)%
1163 }%
1164 }%
1165 }
1166
1167 % parses optional parameters
1168 \def\notation@parse@params#1#2{%
1169 \def\notation@curr@prec{%}%
1170 \def\notation@curr@args{%}%
1171 \def\notation@curr@variant{%}%
1172 \def\notation@curr@arity{%}%
1173 \def\notation@curr@provided@arity#{#2}%
1174 \def\notation@curr@lang{%}%
1175 \def\notation@options@temp#{#1}%
1176 \notation@parse@params@%
1177 \ifx\notation@curr@args\@empty%
1178 \ifx\notation@curr@provided@arity\@empty%
1179 \notation@num@to@ia\notation@curr@arity%
1180 \else%
1181 \notation@num@to@ia\notation@curr@provided@arity%
1182 \fi%
1183 \fi%
1184 }
1185 \def\notation@parse@params@{%
1186 \IfSubStr\notation@options@temp,{%
1187 \StrCut\notation@options@temp,\notation@option@temp\notation@options@temp%
1188 \notation@parse@param%
1189 \notation@parse@params@%
1190 }{\ifx\notation@options@temp\@empty\else%
1191 \let\notation@option@temp\notation@options@temp%
1192 \notation@parse@param%
1193 \fi}%
1194 }
1195
1196 %parses an individual optional argument/key-value-pair
1197 \def\notation@parse@param{%
1198 \trimstring\notation@option@temp%
1199 \ifx\notation@option@temp\@empty\else%
1200 \IfSubStr\notation@option@temp=%{%
1201 \StrCut\notation@option@temp=\notation@key\notation@value%

```

```

1202     \trimstring\notation@key%
1203     \trimstring\notation@value%
1204     \IfStrEq\notation@key{prec}{%
1205         \edef\notation@curr@prec{\notation@value}%
1206     }{%
1207     \IfStrEq\notation@key{args}{%
1208         \edef\notation@curr@args{\notation@value}%
1209     }{%
1210     \IfStrEq\notation@key{lang}{%
1211         \edef\notation@curr@lang{\notation@value}%
1212     }{%
1213     \IfStrEq\notation@key{variant}{%
1214         \edef\notation@curr@variant{\notation@value}%
1215     }{%
1216     \IfStrEq\notation@key{arity}{%
1217         \edef\notation@curr@arity{\notation@value}%
1218     }{%
1219     }}}}%
1220 }{%
1221     \edef\notation@curr@variant{\notation@option@temp}%
1222 }%
1223 \fi%
1224 }
1225
1226 % converts an integer to a string of 'i's, e.g. 3 => iii,
1227 % and stores the result in \notation@curr@args
1228 \def\notation@num@to@ia#1{%
1229     \IfInteger{#1}{
1230         \notation@num@to@ia@#1%
1231     }{%
1232         %
1233     }%
1234 }
1235 \def\notation@num@to@ia@#1{%
1236     \ifnum#1>0%
1237         \edef\notation@curr@args{\notation@curr@args i}%
1238         \expandafter\notation@num@to@ia@\expandafter{\the\numexpr#1-1\@Space}%
1239     \fi%
1240 }

```

The following macros take care of precedences, parentheses/bracketing, associative (flexary) arguments etc. in presentation:

```

1241 \def\notation@assoc#1#2{% function, argv
1242     \let\@tmpop=\relax% do not print the function the first time round
1243     \@for\@I:=#2\do{\@tmpop% print the function
1244         % write the i-th argument with locally updated precedence
1245         \@I%
1246     \def\@tmpop{#1}%
1247     }%
1248 }%

```

```

1249
1250 \def\notation@lparen{()
1251 \def\notation@rparen{)}
1252 \def\infprec{1000000}
1253 \def\neginfprec{-\infprec}
1254
1255 \newcount\notation@downprec
1256 \notation@downprec=\neginfprec
1257
1258 % patching displaymode
1259 \newif\if@displaymode\@displaymodefalse
1260 \expandafter\everydisplay\expandafter{\the\everydisplay\@displaymodetrue}
1261 \let\old@displaystyle\displaystyle
1262 \def\displaystyle{\old@displaystyle\@displaymodetrue}
1263
1264 \def\dobrackets#1{% avoiding groups at all costs to ensure \parray still works!
1265   \def\notation@innertmp{#1}%
1266   \let\ex\expandafter%
1267   \if@displaymode%
1268     \ex\ex\ex\left\ex\ex\ex\notation@lparen%
1269     \ex\notation@resetbrackets\ex\notation@innertmp%
1270     \ex\right\notation@rparen%
1271   \else%
1272     \ex\ex\ex\notation@lparen%
1273     \ex\notation@resetbrackets\ex\notation@innertmp%
1274     \notation@rparen%
1275   \fi%
1276 }
1277
1278 \def\withbrackets#1#2#3{%
1279   \edef\notation@lparen{#1}%
1280   \edef\notation@rparen{#2}%
1281   #3%
1282   \notation@resetbrackets%
1283 }
1284
1285 \def\notation@resetbrackets{%
1286   \def\notation@lparen{()%
1287   \def\notation@rparen{)%}
1288 }
1289
1290 \def\notation@symprec#1#2{%
1291   \ifnum#1>\notation@downprec\relax%
1292     \notation@resetbrackets#2%
1293   \else%
1294     \ifnum\notation@downprec=\infprec\relax%
1295       \notation@resetbrackets#2%
1296     \else
1297       \if@inarray@
1298         \notation@resetbrackets#2

```

```

1299     \else\dobrackets{#2}\fi%
1300 \fi\fi%
1301 }
1302
1303 \newif\if@inarray@\@inarray@false
1304
1305 \def\notation@argprec#1#2{%
1306   \def\notation@innertmp{#2}
1307   \edef\notation@downprec@temp{\number#1}%
1308   \notation@downprec=\expandafter\notation@downprec@temp%
1309   \expandafter\relax\expandafter\notation@innertmp%
1310   \expandafter\notation@downprec\expandafter=\number\notation@downprec\relax%
1311 }

```

\@invoke@symbol after \symdecl{foo}, \foo expands to \@invoke@symbol{<uri>}:

```

1312 \protected\def\@invoke@symbol#1{%
1313   \def\@invoke@symbol@first{#1}%
1314   \symbol@args%
1315 }

```

takes care of the optional notation-option-argument, and either invokes \@invoke@symbol@math for symbolic presentation or \@invoke@symbol@text for verbalization (TODO)

```

1316 \newcommand\symbol@args[1][]{%
1317   \notation@parse@params{#1}{}%
1318   \def\notation@temp@fragment{}%
1319   \ifx\notation@curr@arity\@empty\else%
1320     \edef\notation@temp@fragment{arity=\notation@curr@arity}%
1321   \fi%
1322   \ifx\notation@curr@lang\@empty\else%
1323     \ifx\notation@temp@fragment\@empty%
1324       \edef\notation@temp@fragment{lang=\notation@curr@lang}%
1325     \else%
1326       \edef\notation@temp@fragment{\notation@temp@fragment\@Ampersand lang=\notation@curr@lang}%
1327     \fi%
1328   \fi%
1329   \ifx\notation@curr@variant\@empty\else%
1330     \ifx\notation@temp@fragment\@empty%
1331       \edef\notation@temp@fragment{variant=\notation@curr@variant}%
1332     \else%
1333       \edef\notation@temp@fragment{\notation@temp@fragment\@Ampersand variant=\notation@curr@va
1334     \fi%
1335   \fi%
1336   %
1337   \ifmmode\def\invoke@symbol@next{\@invoke@symbol@math\@invoke@symbol@first\notation@temp@fragm
1338   \else\def\invoke@symbol@next{\@invoke@symbol@text\@invoke@symbol@first\notation@temp@fragment
1339   \invoke@symbol@next%
1340 }

```

This finally gets called with both uri and notation-option, convenient for e.g.

a LaTeXML binding:

```
1341 \def\@invoke@symbol@math#1#2{%
1342   \csname #1\@Fragment#2\endcsname%
1343 }
```

TODO:

```
1344 \def\@invoke@symbol@text#1#2{%
1345   \@termref{#1}{\csname #1\@Fragment verb\@Fragment#2\endcsname}%
1346 }
```

TODO: To set notational options (globally or locally) generically:

```
1347 \def\setstexlang#1{%
1348   \def\stex@lang{#1}%
1349 }%
1350 \setstexlang{en}
1351 \def\setstexvariant#1#2{%
1352   % TODO
1353 }
1354 \def\setstexvariants#1{%
1355   \def\stex@variants{#1}%
1356 }
```

Test:

```
Module 3.30[FooBar]: \symdecl {barbar}
\notation [arity=0]{barbar}{\psi }
\notation [prec=50;\infprec ]{barbar}[1]{\barbar [arity=0]\dobrackets {##1}}

\notation [arity=0,variant=cap]{barbar}{\Psi }
\notation [variant=cap]{barbar}[1]{\barbar [arity=0,variant=cap]\dobrackets {##1}}
```

```
$\barbar {A}$:  $\psi(A)$ 
$\barbar [variant=cap]{A}$:  $\Psi(A)$ 
```

```
\symdecl {plus}
\symdecl {times}
\symdecl {vara}
\symdecl {varb}
\symdecl {varc}
\symdecl {vard}
\symdecl {vare}
\notation {vara}{a}
\notation {varb}{b}
\notation {varc}{c}
\notation {vard}{d}
\notation {vare}{e}
\notation [prec=500;500,args=a]{plus}{\withbrackets \langle \rangle {##1}}{+}
```

`\notation [prec=600;600,args=a]{times}{##1}{\cdot }`

`$\times {\frac {\mathrm {a} }{\mathrm {b} }},\mathrm {+} {\frac {\mathrm {a} }{\mathrm {b} }}{\frac {\mathrm {a} }{\mathrm {b} }},\times {\mathrm {c} } ,\mathrm {+} {\mathrm {d} },\mathrm {e} }$:`

$$\frac{a}{b} \cdot \left(\frac{a}{b} + c \cdot (d + e) \right)$$

`\[\times {\frac {\mathrm {a} }{\mathrm {b} }},\mathrm {+} {\frac {\mathrm {a} }{\mathrm {b} }}{\frac {\mathrm {a} }{\mathrm {b} }},\times {\mathrm {c} } ,\mathrm {+} {\mathrm {d} },\mathrm {e} }\]`:

$$\frac{a}{b} \cdot \left(\frac{a}{b} + c \cdot (d + e) \right)$$

`\symdecl {foo!bar}`

`\foo !bar: foo bar`

`\symdecl [verbalization={finite group}]{finitigroup}`

`\verbalization [variant=oforder]{finitigroup}[1]{finite group of order ##1}`

`\finitigroup [oforder]{n}: finite group of order n`

3.6 Term References

`\ifhref`

```
1357 \newif\ifhref\hreffalse%
1358 \AtBeginDocument{%
1359   \ifpackageloaded{hyperref}{%
1360     \hreftrue%
1361   }{%
1362     \hreffalse%
1363   }%
1364 }
```

`\termref@maketarget` This macro creates a hypertarget `sref@(symbol URI)@target` and defines `\sref@(symbol URI)#1` to create a hyperlink to here on the text #1.

```
1365 \newbox\stex@targetbox
1366 \def\termref@maketarget#1#2{%
1367   % #1: symbol URI
1368   % #2: text
1369   \message{^^JHere: #1 <> #2^^J}%
1370   \ifhref\if@smsmode\else%
1371     \hypertarget{sref@#1@target}{#2}%
1372   \fi\fi%
1373   \message{^^JHere!^^J}%
1374   \expandafter\edef\csname sref@#1\endcsname##1{%
1375     \ifhref\if@smsmode\else\noexpand\hyperlink{sref@#1@target}{##1}\fi\fi%
1376   }%
1377 }
```

`\@termref`

```
1378 \def\@termref#1#2{%
```



```

1379 % #1: symbol URI
1380 % #2: text
1381 \ifcsvoid{#1}{%
1382   \StrCut[2]{#1}\@QuestionMark\termref@mod\termref@name%
1383   \ifcsvoid{\termref@mod}{%
1384     \PackageError{stex}{Term reference: Module with URI \termref@mod\ not found}{}%
1385   }{%
1386     \PackageError{stex}{Term reference: Module \termref@mod\ exists, but %
1387       contains no symbol with name \termref@name.%
1388     }{}%
1389   }%
1390 }{%
1391   \ifcsvoid{sref@#1}{%
1392     #2% TODO: No reference point exists!
1393   }{%
1394     \csname sref@#1\endcsname{#2}%
1395   }%
1396 }%
1397 }

\tref

1398
1399 \def\@capitalize#1{\uppercase{#1}}%
1400 \newrobustcmd\capitalize[1]{\expandafter\@capitalize #1}%
1401
1402 \newcommand\tref[2][]{%
1403   \edef\tref@name{#1}%
1404   \ifx\tref@name\@empty
1405     \symdecl@constructname{#2}%
1406     \edef\tref@name{\symdecl@name}%
1407   \else%
1408     \edef\symdecl@verbalization{#2}%
1409   \fi%
1410   \expandafter\modules@getURIfromName\expandafter{\tref@name}%
1411   \expandafter\@termref\expandafter{\notation@uri}\symdecl@verbalization}%
1412 }
1413 \def\trefs#1{%
1414   \modules@getURIfromName{#1}%
1415   \expandafter\@termref\expandafter{\notation@uri}\csname\notation@uri\@Fragment verb\@Fragment
1416 }
1417 \def\Tref#1{%
1418   \modules@getURIfromName{#1}%
1419   \expandafter\@termref\expandafter{\notation@uri}\expandafter\capitalize\csname\notation@uri\
1420 }
1421 \def\Trefs#1{%
1422   \modules@getURIfromName{#1}%
1423   \expandafter\@termref\expandafter{\notation@uri}\expandafter\capitalize\csname\notation@uri\
1424 }

```

[Test:](#)

foo bar
foo-bar
finite group

```
\defi
1425 \addmetakey{defi}{name}
1426 \def\@definiendum#1#2{%
1427   \parsemodule@maybesetcodes%
1428   \message{^^JHere: #1 | #2^^J}%
1429   \termref@maketarget{#1}{#2}\termref@maketarget{#1}{\defemph{#2}}%
1430 }
1431
1432 \newcommand\defi[2][]{%
1433   \metasetkeys{defi}{#1}%
1434   \ifx\defi@name\@empty%
1435     \symdecl@constructname{#2}%
1436     \let\defi@name\symdecl@name%
1437     \let\defi@verbalization\symdecl@verbalization%
1438   \else%
1439     \edef\defi@verbalization{#2}%
1440   \fi%
1441   \ifcvoid{\module@uri\@QuestionMark\defi@name}{%
1442     \symdecl\defi@name%
1443   }{\edef\symdecl@uri{\module@uri\@QuestionMark\defi@name}}%
1444   \@definiendum\symdecl@uri\defi@verbalization%
1445 }
1446 \def\Defi#1{%
1447   \symdecl{#1}%
1448   \@definiendum\symdecl@uri{\capitalize\symdecl@verbalization}%
1449 }
1450 \def\defis#1{%
1451   \symdecl{#1}%
1452   \@definiendum\symdecl@uri{\symdecl@verbalization s}%
1453 }
1454 \def\Defis#1{%
1455   \symdecl{#1}%
1456   \@definiendum\symdecl@uri{\capitalize\symdecl@verbalization s}%
1457 }
```

Test:
a simple group
simple group

3.7 sref

We find out whether the `hyperref` package is loaded, since we may want to use it for cross-references, for which we set up some internal macros that gracefully degrade if `hyperref` is not loaded.

```
\sref*@ifh
```

```

1458 \newif\ifhref\hreffalse%
1459 \AtBeginDocument{%
1460   \ifpackageloaded{hyperref}{%
1461     \hreftrue%
1462   }{%
1463     \hreffalse%
1464   }%
1465 }%
1466 \newcommand\sref@href@ifh[2]{%
1467   \ifhref%
1468     \href{#1}{#2}%
1469   \else%
1470     #2%
1471   \fi%
1472 }%
1473 \newcommand\sref@hlink@ifh[2]{%
1474   \ifhref%
1475     \hyperlink{#1}{#2}%
1476   \else%
1477     #2%
1478   \fi%
1479 }%
1480 \newcommand\sref@target@ifh[2]{%
1481   \ifhref%
1482     \hypertarget{#1}{#2}%
1483   \else%
1484     #2%
1485   \fi%
1486 }%

```

Then we provide some macros for \TeX -specific crossreferencing

\sref@target The next macro uses this and makes an target from the current **sref@id** declared by a **id** key.

```

1487 \def\sref@target{%
1488   \ifx\sref@id\@empty%
1489     \relax%
1490   \else%
1491     \edef\@target{\sref@ifcsundef{sref@part}}{\sref@part @}\sref@id @target}%
1492     \sref@target@ifh\@target{}%
1493   \fi%
1494 }%

```

\srefaddidkey **\srefaddidkey**[*keyval*]{*group*} extends the metadata keys of the *group* with an **id** key. In the optional key/value pairs in *keyval* the **prefix** key can be used to specify a prefix. Note that the **id** key defined by **\srefaddidkey**[*keyval*]{*group*} not only defines **\sref@id**, which is used for referencing by the **sref** package, but also **\(group)@id**, which is used for showing metadata via the **showmeta** option of the **metakeys** package.

```

1495 \addmetakey{srefaddidkey}{prefix}
1496 \newcommand\srefaddidkey[2][]{%
1497   \metasetkeys{srefaddidkey}{#1}%
1498   \@metakeys@ext@clear@keys{#2}{sref@id}{}% id cannot have a default
1499   \metakeys@ext@clear@keys{#2}{id}{}%
1500   \metakeys@ext@showkeys{#2}{id}%
1501   \define@key{#2}{id}{%
1502     \edef\sref@id{\srefaddidkey@prefix ##1}%
1503     %\expandafter\edef\csname #2@id\endcsname{\srefaddidkey@prefix ##1}%
1504     \csedef{#2@id}{\srefaddidkey@prefix ##1}%
1505   }%
1506 }%

\sref@def This macro stores the value of its last argument in a custom macro for reference.
1507 \newcommand\sref@def[3]{\csgdef{sref@#1@#2}{#3}}

The next step is to set up a file to which the references are written, this is
normally the .aux file, but if the extref option is set, we have to use an .ref file.
1508 \ifextrefs%
1509   \newwrite\refs@file%
1510 \else%
1511   \def\refs@file{\auxout}%
1512 \fi%

\sref@def This macro writes an \sref@def command to the current aux file and also exe-
cutes it.
1513 \newcommand\sref@def[3]{%
1514   \protected@write\refs@file{}\string\sref@def{#1}{#2}{#3}%
1515 }%

\sref@label The \sref@label macro writes a label definition to the auxfile.
1516 \newcommand\sref@label[2]{%
1517   \sref@def{\ifcsundef{sref@part}{}\sref@part @}{#2}{page}{\thepage}%
1518   \sref@def{\ifcsundef{sref@part}{}\sref@part @}{#2}{label}{#1}%
1519 }%

\sreflabel The \sreflabel macro is a semantic version of \label, it combines the catego-
rization given in the first argument with LATEX's \currentlabel.
1520 \newcommand\sreflabel[2]{\sref@label{#1 \currentlabel}{#2}}

\sref@label@id The \sref@label@id writes a label definition for the current \sref@id if it is
defined.
1521 \def\sref@id{} % make sure that defined
1522 \newcommand\sref@label@id[1]{%
1523   \ifx\sref@id\@empty%
1524     \relax%
1525   \else%
1526     \sref@label{#1}{\sref@id}%
1527   \fi%
1528 }%

```

`\sref@label@id@arg` The `\sref@label@id@arg` writes a label definition for the second argument if it is defined.

```

1529 \newcommand\sref@label@id@arg[2]{%
1530   \def\@@id{#2}
1531   \ifx\@@id\@empty%
1532     \relax%
1533   \else%
1534     \sref@label{#1}{\@@id}%
1535   \fi%
1536 }%
```

3.8 smultiling

`modsig` The `modsig` environment is just a layer over the `module` environment. We also redefine macros that may occur in module signatures so that they do not create markup. Finally, we set the flag `\mod@<mod>\@multiling` to `true`.

```

1537 \newenvironment{modsig}[2][]{\def\@test{#1}%
1538 \ifx\@test\@empty\begin{module}[name=#2]\else\begin{module}[name=#2,#1]\fi%
1539 \expandafter\gdef\csname mod@#2\multiling\endcsname{true}%
1540 \ignorespacesandpars}
1541 {\end{module}\ignorespacesandpars}
```

3.9 smglom

`\gimport` Just a shortcut, we have a starred and unstarred version, the first one is conservative. For example, if we execute:

```
\gimport[smglom/numberfields]{naturalnumbers}
```

First we are redirected to `\@gimport@nostar`, we store the `smglom/numberfields` (*the repo's path*) in `\@test`, then store `\mh@currentrepos` (*current directory*) in `\mh@repos`. If no repo's path is offered, that means the module to import is under the same directory, so we let `\mhrepos=\mh@repos` and pass bunch of parameters to `\importmhmodule`, which is defined in `module.sty`. If there's a repo's path, then we let `\mhrepos=<the repo's path>`. Finally we use `\mhcurrentrepos` (defined in `module.sty`) to change the `\mh@currentrepos`.

```

1542 \def\gimport{\@ifstar\@gimport@star\@gimport@nostar}%
1543 \newrobustcmd\@gimport@star[2][]{\def\@test{#1}%
1544 \edef\mh@repos{\mh@currentrepos}%
1545 \ifx\@test\@empty%
1546   \importmhmodule[conservative,mhrepos=\mh@repos,path=#2]{#2}%
1547 \else\importmhmodule[conservative,mhrepos=#1,path=#2]{#2}\fi%
1548 \setcurrentreposinfo{\mh@repos}%
1549 \ignorespacesandpars\parsemodule@maybesetcodes}
1550 \newrobustcmd\@gimport@nostar[2][]{\def\@test{#1}%
1551 \edef\mh@repos{\mh@currentrepos}%
```

```

1552 \ifx\@test\@empty%
1553 \importmhmodule[mhrepos=\mh@repos,path=#2]{#2}%
1554 \else\importmhmodule[mhrepos=#1,path=#2]{#2}\fi%
1555 \setcurrentreposinfo{\mh@repos}%
1556 \ignorespacesandpars\parsemodule@maybesetcodes}

```

3.10 mathhub

`\libinput` the `\libinput` macro inputs from the `lib` directory of the MathHub repository and then the `meta-inf/lib` repository of the group, if they exist. Since in practice nested libinputs may occur, we make sure that we stash the old values of `\mh@infile` and `\mh@libfile` and restore them at the end.

```

1557 \def\modules@@first#1/#2;{#1}
1558 \newcommand\libinput[1]{%
1559 \ifcsvoid{mh@currentrepos}{%
1560   \PackageError{stex}{current MathHub repository not found}{}}%
1561   {}
1562 \edef\@mh@group{\expandafter\modules@@first\mh@currentrepos;}
1563 \let\orig@infile\mh@infile\let\orig@libfile\mh@libfile
1564 \def\mh@infile{\MathHub{\@mh@group/meta-inf/lib/#1}}
1565 \def\mh@libfile{\MathHub{\mh@currentrepos/lib/#1}}%
1566 \IfFileExists\mh@infile{\stexinput\mh@infile}{}%
1567 \IfFileExists\mh@infile{}{\IfFileExists\mh@libfile{}{%
1568   {\PackageError{stex}
1569     {Library file missing; cannot input #1.tex\MessageBreak%
1570     Both \mh@libfile.tex\MessageBreak and \mh@infile.tex\MessageBreak%
1571     do not exist}%
1572   {Check whether the file name is correct}}}}
1573 \IfFileExists\mh@libfile{\stexinput\mh@libfile\relax}{}
1574 \let\mh@infile\orig@infile\let\mh@libfile\orig@libfile}

```

3.11 omdoc/omgroup

```

1575 \newcount\section@level
1576
1577 \section@level=2
1578 \ifdefstring{\omdoc@sty@class}{book}{\section@level=0}{}
1579 \ifdefstring{\omdoc@sty@class}{report}{\section@level=0}{}
1580 \ifdefstring{\omdoc@sty@topsect}{part}{\section@level=0}{}
1581 \ifdefstring{\omdoc@sty@topsect}{chapter}{\section@level=1}{}

```

`\omgroup@nonum` convenience macro: `\omgroup@nonum{<level>}{<title>}` makes an unnumbered sectioning with title *<title>* at level *<level>*.

```

1582 \newcommand\omgroup@nonum[2]{%
1583 \ifx\hyper@anchor\@undefined\else\phantomsection\fi%
1584 \addcontentsline{toc}{#1}{#2}\@nameuse{#1}*{#2}}

```

`\omgroup@num` convenience macro: `\omgroup@num{<level>}{<title>}` makes numbered sectioning with title *<title>* at level *<level>*. We have to check the `short` key was given in the

omgroup environment and – if it is use it. But how to do that depends on whether the rdfmeta package has been loaded. In the end we call \sref@label@id to enable crossreferencing.

```

1585 \newcommand\omgroup@num[2]{%
1586 \edef\@@ID{\sref@id}
1587 \ifx\omgroup@short\empty% no short title
1588 \@nameuse{#1}{#2}%
1589 \else% we have a short title
1590 \@ifundefined{rdfmeta@sectioning}%
1591   {\@nameuse{#1}[\omgroup@short]{#2}}%
1592   {\@nameuse{rdfmeta@#1@old}[\omgroup@short]{#2}}%
1593 \fi%
1594 \sref@label@id@arg{\omdoc@sect@name~\@nameuse{the#1}}\@@ID}

```

omgroup

```

1595 \def\@true{true}
1596 \def\@false{false}
1597 \srefaddidkey{omgroup}
1598 \addmetakey{omgroup}{date}
1599 \addmetakey{omgroup}{creators}
1600 \addmetakey{omgroup}{contributors}
1601 \addmetakey{omgroup}{srccite}
1602 \addmetakey{omgroup}{type}
1603 \addmetakey*{omgroup}{short}
1604 \addmetakey*{omgroup}{display}
1605 \addmetakey[false]{omgroup}{loadmodules}[true]

```

we define a switch for numbering lines and a hook for the beginning of groups:

\at@begin@omgroup The \at@begin@omgroup macro allows customization. It is run at the beginning of the omgrou, i.e. after the section heading.

```

1606 \newif\if@mainmatter\@mainmattertrue
1607 \newcommand\at@begin@omgroup[3][]{\}

```

Then we define a helper macro that takes care of the sectioning magic. It comes with its own key/value interface for customization.

```

1608 \addmetakey{omdoc@sect}{name}
1609 \addmetakey[false]{omdoc@sect}{clear}[true]
1610 \addmetakey{omdoc@sect}{ref}
1611 \addmetakey[false]{omdoc@sect}{num}[true]
1612 \newcommand\omdoc@sectioning[3][]{\metasetkeys{omdoc@sect}{#1}%
1613 \ifx\omdoc@sect@clear\@true\cleardoublepage\fi%
1614 \if@mainmatter% numbering not overridden by frontmatter, etc.
1615 \ifx\omdoc@sect@num\@true\omgroup@num{#2}{#3}\else\omgroup@nonum{#2}{#3}\fi%
1616 \def\current@section@level{\omdoc@sect@name}%
1617 \else\omgroup@nonum{#2}{#3}%
1618 \fi}% if@mainmatter

```

and another one, if redefines the \addtocontentsline macro of L^AT_EX to import the respective macros. It takes as an argument a list of module names.

```

1619 \newcommand\omgroup@redefine@addtocontents[1]{%

```

```

1620 %\edef\@import{#1}%
1621 %\@for\@I:=\@import\do{%
1622 %\edef\@path{\csname module@\@I @path\endcsname}%
1623 %\@ifundefined{tf@toc}\relax%
1624 %    {\protected@write\tf@toc}{\string\@requiremodules{\@path}}}%
1625 %\ifx\hyper@anchor\@undefined% hyperref.sty loaded?
1626 %\def\addcontentsline##1##2##3{%
1627 %\addtocontents{##1}{\protect\contentsline{##2}{\string\withusedmodules{#1}{##3}}{\thepage}}}%
1628 %\else% hyperref.sty not loaded
1629 %\def\addcontentsline##1##2##3{%
1630 %\addtocontents{##1}{\protect\contentsline{##2}{\string\withusedmodules{#1}{##3}}{\thepage}}{\@c
1631 %\fi
1632 }% hypreref.sty loaded?

    now the omgroup environment itself. This takes care of the table of contents
    via the helper macro above and then selects the appropriate sectioning com-
    mand from article.cls. It also registers the current level of omgroups in the
    \omgroup@level counter.

1633 \newcount\omgroup@level
1634 \newenvironment{omgroup}[2][ ]% keys, title
1635 {\metasetkeys{omgroup}{#1}\sref@target%
1636 \advance\omgroup@level by 1\relax%

    If the loadmodules key is set on \begin{omgroup}, we redefine the \addcontetsline
    macro that determines how the sectioning commands below construct the entries
    for the table of contents.

1637 \ifx\omgroup@loadmodules\@true%
1638 \omgroup@redefine@addtocontents{\@ifundefined{module@id}\used@modules%
1639 {\@ifundefined{module@\module@id @path}{\used@modules}\module@id}}\fi%

    now we only need to construct the right sectioning depending on the value of
    \section@level.

1640 \advance\section@level by 1\relax%
1641 \ifcase\section@level%
1642 \or\omdoc@sectioning[name=\omdoc@part@kw,clear,num]{part}{#2}%
1643 \or\omdoc@sectioning[name=\omdoc@chapter@kw,clear,num]{chapter}{#2}%
1644 \or\omdoc@sectioning[name=\omdoc@section@kw,num]{section}{#2}%
1645 \or\omdoc@sectioning[name=\omdoc@subsection@kw,num]{subsection}{#2}%
1646 \or\omdoc@sectioning[name=\omdoc@subsubsection@kw,num]{subsubsection}{#2}%
1647 \or\omdoc@sectioning[name=\omdoc@paragraph@kw,ref=this \omdoc@paragraph@kw]{paragraph}{#2}%
1648 \or\omdoc@sectioning[name=\omdoc@subparagraph@kw,ref=this \omdoc@subparagraph@kw]{paragraph}{#2}%
1649 \fi% \ifcase
1650 \at@begin{omgroup}[#1]\section@level{#2}}% for customization
1651 {\advance\section@level by -1\advance\omgroup@level by -1}

    and finally, we localize the sections

1652 \newcommand\omdoc@part@kw{Part}
1653 \newcommand\omdoc@chapter@kw{Chapter}
1654 \newcommand\omdoc@section@kw{Section}
1655 \newcommand\omdoc@subsection@kw{Subsection}

```



```

1656 \newcommand\omdoc@subsubsection@kw{Subsubsection}
1657 \newcommand\omdoc@paragraph@kw{paragraph}
1658 \newcommand\omdoc@subparagraph@kw{subparagraph}

\setSGvar set a global variable
1659 \newcommand\setSGvar[1]{\@namedef{sTeX@Gvar@#1}}

\useSGvar use a global variable
1660 \newrobustcmd\useSGvar[1]{%
1661   \ifundefined{sTeX@Gvar@#1}
1662   {\PackageError{omdoc}
1663     {The sTeX Global variable #1 is undefined}
1664     {set it with \protect\setSGvar}}
1665 \@nameuse{sTeX@Gvar@#1}}

blindomgroup
1666 \newcommand\at@begin@blindomgroup[1]{%
1667 \newenvironment{blindomgroup}
1668 {\advance\section@level by 1\at@begin@blindomgroup\setion@level}
1669 {\advance\section@level by -1}

```

3.12 omtext

3.12.1 Mathematical Text

We define the actions that are undertaken, when the keys are encountered. The first set just records metadata; this is very simple via the `\addmetakey` infrastructure [Koh20]. Note that we allow math in the `title` field, so we do not declare it to be `Semiverbatim` (indeed not at all, which allows it by default).

```

1670 \srefaddidkey{omtext}
1671 \addmetakey[]{omtext}{functions}
1672 \addmetakey*{omtext}{display}
1673 \addmetakey{omtext}{for}
1674 \addmetakey{omtext}{from}
1675 \addmetakey{omtext}{type}
1676 \addmetakey*{omtext}{title}
1677 \addmetakey*{omtext}{start}
1678 \addmetakey{omtext}{theory}
1679 \addmetakey{omtext}{continues}
1680 \addmetakey{omtext}{verbalizes}
1681 \addmetakey{omtext}{subject}

\st@flow We define this macro, so that we can test whether the display key has the value
flow
1682 \def\st@flow{flow}

```

We define a switch that allows us to see whether we are inside an `omtext` environment or a statement. It will be used to give better error messages for inline statements.

```

1683 \newif\if@in@omtext\@in@omtextfalse

omtext The omtext environment can have a title, which is used in a similar way. We
      redefine the \lec macro so the trailing \par does not get into the way.
1684 \def\omtext@pre@skip{\smallskip}
1685 \def\omtext@post@skip{}
1686 \newenvironment{omtext}[1][\@in@omtexttrue%
1687   \bgroup\metasetkeys{omtext}{#1}\sref@label{id{this paragraph}}%
1688   \def\lec##1{\@lec{##1}}}%
1689   \omtext@pre@skip\par\noindent%
1690   \ifx\omtext@title\@empty%
1691     \ifx\omtext@start\@empty\else%
1692       \ifx\omtext@display\st@flow\omtext@start\else\stDMemph{\omtext@start}\fi\enspace%
1693     \fi% end omtext@start empty
1694   \else\stDMemph{\omtext@title}:\enspace%
1695     \ifx\omtext@start\@empty\else\omtext@start\enspace\fi%
1696   \fi% end omtext@title empty
1697   \ignorespacesandpars}
1698 {\egroup\omtext@post@skip\@in@omtextfalse\ignorespacesandpars}

```

3.12.2 Phrase-level Markup

\phrase For the moment, we do disregard the most of the keys

```

1699 \srefaddidkey{phrase}
1700 \addmetakey{phrase}{style}
1701 \addmetakey{phrase}{class}
1702 \addmetakey{phrase}{index}
1703 \addmetakey{phrase}{verbalizes}
1704 \addmetakey{phrase}{type}
1705 \addmetakey{phrase}{only}
1706 \newcommand\phrase[2][\metasetkeys{phrase}{#1}%
1707 \ifx\phrase@only\@empty\only<\phrase@only>{#2}\else #2\fi}

```

\coref*

```

1708 \providecommand\textsubscript[1]{\ensuremath{_{#1}}}
1709 \newcommand\corefs[2]{#1\textsubscript{#2}}
1710 \newcommand\coreft[2]{#1\textsuperscript{#2}}

```

\n*lex

```

1711 \newcommand\nlex[1]{\green{\sl{#1}}}
1712 \newcommand\nlcex[1]{*\green{\sl{#1}}}

```

sinlinequote

```

1713 \def\@sinlinequote#1{‘‘{\sl{#1}}’’}
1714 \def\@sinlinequote#1#2{\@sinlinequote{#2}~#1}
1715 \newcommand\sinlinequote[2][
1716 {\def\@opt{#1}\ifx\@opt\@empty\@sinlinequote{#2}\else\@sinlinequote\@opt{#2}\fi}

```

3.12.3 Declarations (under development)

The declaration macros are still under development (i.e. the macros) are still under development and may change at any time. Currently they are completely empty.

```
1717 \newcommand\vdec[2] [] {#2}
1718 \newcommand\vrest[2] [] {#2}
1719 \newcommand\vcond[2] [] {#2}
```

```
EdN:1 \strucdec 1
1720 \newcommand\strucdec[2] [] {#2}
```

```
EdN:2 \impdec 2
1721 \newcommand\impdec[2] [] {#2}
```

3.12.4 Block-Level Markup

sblockquote

```
1722 \def\begin@sblockquote{\begin{quote}}\s1}
1723 \def\end@sblockquote{\end{quote}}
1724 \def\begin@@sblockquote#1{\begin@sblockquote}
1725 \def\end@@sblockquote#1{\def\@lec#1{\textrm{##1}}\@lec{#1}\end@sblockquote}
1726 \newenvironment{sblockquote}[1] []
1727 {\def\@opt{#1}\ifx\@opt\@empty\begin@sblockquote\else\begin@@sblockquote\@opt\fi}
1728 {\ifx\@opt\@empty\end@sblockquote\else\end@@sblockquote\@opt\fi}
```

sboxquote

```
1729 \newenvironment{sboxquote}[1] []
1730 {\def\@src{#1}\begin{mdframed}[leftmargin=.5cm,rightmargin=.5cm]}
1731 {\@lec{\textrm{\@src}}\end{mdframed}}
```

The line end comment macro makes sure that it will not be forced on the next line unless necessary.

\lec The actual appearance of the line end comment is determined by the **\@lec** macro, which can be customized in the document class. The basic one here is provided so that it is not missing.

```
1732 \providecommand{\@lec}[1]{(##1)}
1733 \def\@lec#1{\strut\hfil\strut\null\nobreak\hfill\@lec{#1}}
1734 \def\lec#1{\@lec{#1}\par}
```

¹EdNOTE: document above

²EdNOTE: document above

3.12.5 Index Markup

`\omdoc@index*` These are the main internal indexing commands – dividing them into four macros is awful, but I did not get list processing running. It makes sure that the modules necessary for interpreting the math in the index entries are loaded. If the `loadmodules` key is given, we import the module we are in otherwise all the currently imported modules. We do not have to require the module files, since the index is at the end of the document. If the `at` key is given, then we use that for sorting in the index.

```

1735 \addmetakey{omdoc@index}{at}
1736 \addmetakey[false]{omdoc@index}{loadmodules}[true]
1737 \newcommand\omdoc@indexi[2][\ifindex%
1738 \metasetkeys{omdoc@index}{#1}%
1739 \@bsphack\begingroup\@sanitize%
1740 \protected@write\@indexfile{}\string\indexentry%
1741 {\ifx\omdoc@index@at\@empty\else\omdoc@index@at @\fi%
1742 \ifx\omdoc@index@loadmodules\@true%
1743 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#2}%
1744 \else #2\fi% loadmodules
1745 }\the page}}%
1746 \endgroup\@esphack\fi}%ifindex
1747 \newcommand\omdoc@indexii[3][\ifindex%
1748 \metasetkeys{omdoc@index}{#1}%
1749 \@bsphack\begingroup\@sanitize%
1750 \protected@write\@indexfile{}\string\indexentry%
1751 {\ifx\omdoc@index@at\@empty\else\omdoc@index@at @\fi%
1752 \ifx\omdoc@index@loadmodules\@true%
1753 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#2}!%
1754 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#3}!%
1755 \else #2!#3\fi% loadmodules
1756 }\the page}}%
1757 \endgroup\@esphack\fi}%ifindex
1758 \newcommand\omdoc@indexiii[4][\ifindex%
1759 \metasetkeys{omdoc@index}{#1}%
1760 \@bsphack\begingroup\@sanitize%
1761 \protected@write\@indexfile{}\string\indexentry%
1762 {\ifx\omdoc@index@at\@empty\else\omdoc@index@at @\fi%
1763 \ifx\omdoc@index@loadmodules\@true%
1764 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#2}!%
1765 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#3}!%
1766 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#4}!%
1767 \else #2!#3!#4\fi% loadmodules
1768 }\the page}}%
1769 \endgroup\@esphack\fi}%ifindex
1770 \newcommand\omdoc@indexiv[5][\ifindex%
1771 \metasetkeys{omdoc@index}{#1}%
1772 \@bsphack\begingroup\@sanitize%
1773 \protected@write\@indexfile{}\string\indexentry%
1774 {\ifx\omdoc@index@at\@empty\else\omdoc@index@at @\fi%

```

```

1775 \ifx\omdoc@index@loadmodules \@true%
1776 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#2}!%
1777 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#3}!%
1778 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#4}%
1779 \string\withusedmodules{\@ifundefined{module@id}\used@modules\module@id}{#5}%
1780 \else #2!#3!#4!#5\fi% loadmodules
1781 }\the page}}%
1782 \endgroup\@esphack\fi}%ifindex

```

Now, we make two interface macros that make use of this:

`*indi*`

```

1783 \newcommand\aindi[3] []{{#2}\omdoc@indexi[#1]{#3}}
1784 \newcommand\indi[2] []{{#2}\omdoc@indexi[#1]{#2}}
1785 \newcommand\indis[2] []{{#2}\omdoc@indexi[#1]{#2s}}
1786 \newcommand\Indi[2] []{{\captitalize{#2}}\omdoc@indexi[#1]{#2}}
1787 \newcommand\Indis[2] []{{\capitalize{#2}}\omdoc@indexi[#1]{#2s}}
1788
1789 \newcommand\@indii[3] []{\omdoc@indexii[#1]{#2}{#3}\omdoc@indexii[#1]{#3}{#2}}
1790 \newcommand\aindii[4] []{{#2}\@indii[#1]{#3}{#4}}
1791 \newcommand\indii[3] []{{#2 #3}\@indii[#1]{#2}{#3}}
1792 \newcommand\indiis[3] []{{#2 #3s}\@indii[#1]{#2}{#3}}
1793 \newcommand\Indii[3] []{{\captitalize{#2 #3}}\@indii[#1]{#2}{#3}}
1794 \newcommand\Indiis[3] []{{\capitalize{#2 #3}}\@indii[#1]{#2}{#3}}
1795
1796 \newcommand\@indiii[4] []{\omdoc@indexiii[#1]{#2}{#3}{#4}\omdoc@indexiii[#1]{#3}{#2 (#4)}}
1797 \newcommand\aindiii[5] []{{#2}\@indiii[#1]{#3}{#4}{#5}}
1798 \newcommand\indiii[4] []{{#2 #3 #4}\@indiii[#1]{#2}{#3}{#4}}
1799 \newcommand\indiis[4] []{{#2 #3 #4s}\@indiii[#1]{#2}{#3}{#4}}
1800 \newcommand\Indiii[4] []{{\captitalize{#2 #3 #4}}\@indiii[#1]{#2}{#3}{#4}}
1801 \newcommand\Indiis[4] []{{\capitalize{#2 #3 #4s}}\@indiii[#1]{#2}{#3}{#4}}
1802
1803 \newcommand\@indiv[5] []{\omdoc@indexiv[#1]{#2}{#3}{#4}{#5}}
1804 \newcommand\aindiv[6] []{{#2}\@indiv[#1]{#3}{#4}{#5}{#6}}
1805 \newcommand\indiv[5] []{{#2 #3 #4 #5}\@indiv[#1]{#2}{#3}{#4}{#5}}
1806 \newcommand\indivs[5] []{{#2 #3 #4 #5s}\@indiv[#1]{#2}{#3}{#4}{#5}}
1807 \newcommand\Indiv[5] []{{\capitalize{#2 #3 #4 #5s}}\@indiv[#1]{#2}{#3}{#4}{#5}}
1808 \newcommand\Indivs[5] []{{\capitalize{#2 #3 #4 #5s}}\@indiv[#1]{#2}{#3}{#4}{#5}}

```

3.12.6 Miscellaneous

Some shortcuts that use math symbols but are not mathematical at all; in particular, they should not be translated by L^AT_EX_ML.

```

1809 \newcommand\hateq{\ensuremath{\widehat{=}}\xspace}
1810 \newcommand\hatequiv{\ensuremath{\widehat{\equiv}}\xspace}
1811 \@ifundefined{ergo}%
1812 {\newcommand\ergo{\ensuremath{\leadsto}\xspace}}%
1813 {\renewcommand\ergo{\ensuremath{\leadsto}\xspace}}%
1814 \newcommand{\reflectsquig}[2]{\reflectbox{$\m@th#1\rightsquigarrow$}}%

```

```

1815 \newcommand\ogre{\ensuremath{\mathrel{\mathpalette\reflect@squig\relax}}\xspace}%
1816 \newcommand\notergo{\ensuremath{\not\leadsto}}
1817 \newcommand\notogre{\ensuremath{\not\mathrel{\mathpalette\reflect@squig\relax}}\xspace}%

```

3.12.7 Deprecated Functionality

In this section we centralize old interfaces that are only partially supported any more.

`*def*`

```

1818 \newcommand\indextoo[2] [] {\indi[#1]{#2}}%
1819 \PackageWarning{omtext}{\protect\indextoo\space is deprecated, use \protect\indi\space instead}%
1820 \newcommand\indexalt[2] [] {\aindi[#1]{#2}}%
1821 \PackageWarning{omtext}{\protect\indextoo\space is deprecated, use \protect\aindi\space instead}%
1822 \newcommand\twintoo[3] [] {\indii[#1]{#2}{#3}}%
1823 \PackageWarning{omtext}{\protect\twintoo\space is deprecated, use \protect\indii\space instead}%
1824 \newcommand\twinalt[3] [] {\aindii[#1]{#2}{#3}}%
1825 \PackageWarning{omtext}{\protect\twinalt\space is deprecated, use \protect\aindii\space instead}%
1826 \newcommand\atwintoo[4] [] {\indiii[#1]{#2}{#3}{#4}}%
1827 \PackageWarning{omtext}{\protect\atwintoo\space is deprecated, use \protect\indiii\space instead}%
1828 \newcommand\atwinalt[4] [] {\aindiii[#1]{#2}{#3}{#4}}%
1829 \PackageWarning{omtext}{\protect\atwinalt\space is deprecated, use \protect\aindiii\space instead}%
1830 \</package>

```

`\my*graphics`

```

1831 \newcommand\mygraphics[2] [] {\includegraphics[#1]{#2}}%
1832 \PackageWarning{omtext}{\protect\mygraphics\space is deprecated, use \protect\includegraphics\space instead}%
1833 \newcommand\mycgraphics[2] [] {\begin{center}\mygraphics[#1]{#2}\end{center}}%
1834 \PackageWarning{omtext}{\protect\mycgraphics\space is deprecated, use \protect\includegraphics\space instead}%
1835 \newcommand\mybgraphics[2] [] {\fbox{\mygraphics[#1]{#2}}}%
1836 \PackageWarning{omtext}{\protect\mybgraphics\space is deprecated, use \protect\includegraphics\space instead}%
1837 \newcommand\mycbgraphics[2] [] {\begin{center}\fbox{\mygraphics[#1]{#2}}\end{center}}%
1838 \PackageWarning{omtext}{\protect\mycbgraphics\space is deprecated, use \protect\includegraphics\space instead}%

```

4 Things to deprecate

Module options:

```

1839 \addmetakey*{module}{id} % TODO: deprecate properly
1840 \addmetakey*{module}{load}
1841 \addmetakey*{module}{path}
1842 \addmetakey*{module}{dir}
1843 \addmetakey*{module}{align}[WithTheModuleOfTheSameName]
1844 \addmetakey*{module}{noalign}[true]
1845
1846 \newif\if@insymdef@%
1847 \if@insymdef@

```

`symdef:keys` The optional argument `local` specifies the scope of the function to be defined. If `local` is not present as an optional argument then `\symdef` assumes the scope of

the function is global and it will include it in the pool of macros of the current module. Otherwise, if local is present then the function will be defined only locally and it will not be added to the current module (i.e. we cannot inherit a local function). Note, the optional key local does not need a value: we write `\symdef[local]{somefunction}[0]{some expansion}`. The other keys are not used in the L^AT_EX part.

```

1847 %\srefaddidkey{symdef}% what does this do?
1848 \define@key{symdef}{local}[true]{\@symdeflocaltrue}%
1849 \define@key{symdef}{noverb}[all]{}%
1850 \define@key{symdef}{align}[WithTheSymbolOfTheSameName]{}%
1851 \define@key{symdef}{specializes}{}%
1852 \addmetakey*{symdef}{noalign}[true]
1853 \define@key{symdef}{primary}[true]{}%
1854 \define@key{symdef}{assocarg}{}%
1855 \define@key{symdef}{bvars}{}%
1856 \define@key{symdef}{bargs}{}%
1857 \addmetakey{symdef}{lang}%
1858 \addmetakey{symdef}{prec}%
1859 \addmetakey{symdef}{arity}%
1860 \addmetakey{symdef}{variant}%
1861 \addmetakey{symdef}{ns}%
1862 \addmetakey{symdef}{args}%
1863 \addmetakey{symdef}{name}%
1864 \addmetakey*{symdef}{title}%
1865 \addmetakey*{symdef}{description}%
1866 \addmetakey{symdef}{subject}%
1867 \addmetakey*{symdef}{display}%
1868 \addmetakey*{symdef}{gfc}%

```

EdN:3

3

`\symdef` The the `\symdef`, and `\@symdef` macros just handle optional arguments.

```

1869 \def\symdef{\@ifnextchar[{\@symdef}{\@symdef[]}}%
1870 \def\@symdef[#1]#2{\@ifnextchar[{\@@symdef[#1]{#2}}{\@@symdef[#1]{#2}[0]}}%

```

`\@@symdef` now comes the real meat: the `\@@symdef` macro does two things, it adds the macro definition to the macro definition pool of the current module and also provides it.

```

1871 \def\@@symdef[#1]#2[#3]{%
1872   \@insymdef@true%
1873   \metasetkeys{symdef}{#1}%
1874   \edef\symdef@tmp@optpars{\ifcsvoid{symdef@name}{[]}{[name=\symdef@name]}}%
1875   \expandafter\symdecl\symdef@tmp@optpars{#2}%
1876   \@insymdef@false%
1877   \notation[#1]{#2}[#3]%
1878 }% mod@show
1879 \def\symdef@type{Symbol}%
1880 \providecommand{\stDMemph}[1]{\textbf{#1}}

```

³EDNOTE: MK@MK: we need to document the binder keys above.

`\symvariant` `\symvariant{<sym>}[<args>]{<var>}{<cseq>}` just extends the internal macro `\modules@<sym>@pres@` defined by `\symdef{<sym>}[<args>]{...}` with a variant `\modules@<sym>@pres@<var>` which expands to `<cseq>`. Recall that this is called by the macro `\<sym>[<var>]` induced by the `\symdef`.

```
1881 \def\symvariant#1{%
1882   \ifnextchar[{\@symvariant{#1}}{\@symvariant{#1}[0]}%
1883 }%
1884 \def\@symvariant#1[#2]#3#4{%
1885   \notation[#3]{#1}[#2]{#4}%
1886 \ignorespacesandpars}%

```

`\abbrdef` The `\abbrdef` macro is a variant of `\symdef` that does the same on the L^AT_EX level.

```
1887 \let\abbrdef\symdef%
```

`\@sym*` has a starred form for primary symbols. The key/value interface has no effect on the L^AT_EX side. We read the to check whether only allowed ones are used.

```
1888 \newif\if@importing\@importingfalse
1889 \define@key{symi}{noverb}[all]{}%
1890 \define@key{symi}{align}[WithTheSymbolOfTheSameName]{}%
1891 \define@key{symi}{specializes}{}%
1892 \define@key{symi}{gfc}{}%
1893 \define@key{symi}{noalign}[true]{}%
1894 \newcommand\symi{\@ifstar\@symi@star\symi}
1895 \newcommand\@symi[2][]{\metasetkeys{symi}{#1}%
1896   \parsemodule@maybesetcodes\if@importing\else\par\noindent Symbol: \textsf{#2}\fi\ignorespaces}
1897 \newcommand\@symi@star[2][]{\metasetkeys{symi}{#1}%
1898   \parsemodule@maybesetcodes\if@importing\else\par\noindent Primary Symbol: \textsf{#2}\fi\ignorespaces}
1899 \newcommand\symii{\@ifstar\@symii@star\symii}
1900 \newcommand\@symii[3][]{\metasetkeys{symi}{#1}%
1901   \parsemodule@maybesetcodes\if@importing\else\par\noindent Symbol: \textsf{#2-#3}\fi\ignorespaces}
1902 \newcommand\@symii@star[3][]{\metasetkeys{symi}{#1}%
1903   \parsemodule@maybesetcodes\if@importing\else\par\noindent Primary Symbol: \textsf{#2-#3}\fi\ignorespaces}
1904 \newcommand\symiii{\@ifstar\@symiii@star\symiii}
1905 \newcommand\@symiii[4][]{\metasetkeys{symi}{#1}%
1906   \parsemodule@maybesetcodes\if@importing\else\par\noindent Symbol: \textsf{#2-#3-#4}\fi\ignorespaces}
1907 \newcommand\@symiii@star[4][]{\metasetkeys{symi}{#1}%
1908   \parsemodule@maybesetcodes\if@importing\else\par\noindent Primary Symbol: \textsf{#2-#3-#4}\fi\ignorespaces}
1909 \newcommand\symiv{\@ifstar\@symiv@star\symiv}
1910 \newcommand\@symiv[5][]{\metasetkeys{symi}{#1}%
1911   \parsemodule@maybesetcodes\if@importing\else\par\noindent Symbol: \textsf{#2-#3-#4-#5}\fi\ignorespaces}
1912 \newcommand\@symiv@star[5][]{\metasetkeys{symi}{#1}%
1913   \parsemodule@maybesetcodes\if@importing\else\par\noindent Primary Symbol: \textsf{#2-#3-#4-#5}\fi\ignorespaces}

```

`\importmhmodule` The `\importmhmodule[<key=value list>]{module}` saves the current value of `\mh@currentrepos` in a local macro `\mh@@repos`, resets `\mh@currentrepos` to the new value if one is given in the optional argument, and after importing resets `\mh@currentrepos` to the old value in `\mh@@repos`. We do all the `\ifx` compar-

ison with an `\expandafter`, since the values may be passed on from other key bindings. Parameters will be passed to `\importmodule`.

```

1914 %\srefaddidkey{importmhmodule}%
1915 \addmetakey{importmhmodule}{mhrepos}%
1916 \addmetakey{importmhmodule}{path}%
1917 \addmetakey{importmhmodule}{ext}% why does this exist?
1918 \addmetakey{importmhmodule}{dir}%
1919 \addmetakey[false]{importmhmodule}{conservative}[true]%
1920 \newcommand\importmhmodule[2][]{%
1921   \parsemodule@maybesetcodes
1922   \metasetkeys{importmhmodule}{#1}%
1923   \ifx\importmhmodule@dir\empty%
1924     \edef\@path{\importmhmodule@path}%
1925   \else\edef\@path{\importmhmodule@dir/#2}\fi%
1926   \ifx\@path\empty% if module name is not set
1927     \@importmodule[]{#2}{export}%
1928   \else%
1929     \edef\mh@@repos{\mh@currentrepos}% remember so that we can reset it.
1930     \ifx\importmhmodule@mhrepos\empty% if in the same repos
1931       \relax% no need to change mh@currentrepos, i.e, current directory.
1932     \else%
1933       \setcurrentreposinfo\importmhmodule@mhrepos% change it.
1934       \addto@thismodule{x\noexpand\setcurrentreposinfo{\importmhmodule@mhrepos}}%
1935     \fi%
1936     \@importmodule[\MathHub{\mh@currentrepos/source/\@path}]{#2}{export}%
1937     \setcurrentreposinfo\mh@@repos% after importing, reset to old value
1938     \addto@thismodule{x\noexpand\setcurrentreposinfo{\mh@@repos}}%
1939   \fi%
1940   \ignorespacesandpars%
1941 }

```

`\usemhmodule`

```

1942 \addmetakey{importmhmodule}{load}
1943 \addmetakey{importmhmodule}{id}
1944 \addmetakey{importmhmodule}{dir}
1945 \addmetakey{importmhmodule}{mhrepos}
1946
1947 \addmetakey{importmodule}{load}
1948 \addmetakey{importmodule}{id}
1949
1950 \newcommand\usemhmodule[2][]{%
1951   \metasetkeys{importmhmodule}{#1}%
1952   \ifx\importmhmodule@dir\empty%
1953     \edef\@path{\importmhmodule@path}%
1954   \else\edef\@path{\importmhmodule@dir/#2}\fi%
1955   \ifx\@path\empty%
1956     \usemodule[id=\importmhmodule@id]{#2}%
1957   \else%
1958     \edef\mh@@repos{\mh@currentrepos}%

```

```

1959 \ifx\importmhmodule@mhrepos\@empty%
1960 \else\setcurrentreposinfo{\importmhmodule@mhrepos}\fi%
1961 \usemodule{\@path\@QuestionMark#2}%
1962 %\usemodule[load=MathHub{\mh@currentrepos/source/\@path},
1963 %                                id=\importmhmodule@id]{#2}%
1964 \setcurrentreposinfo\mh@trepos%
1965 \fi%
1966 \ignorespacesandpars}

\mhinputref
1967 \newcommand\mhinputref[2][]{%
1968   \edef\mhinputref@first{#1}%
1969   \ifx\mhinputref@first\@empty%
1970     \inputref{#2}%
1971   \else%
1972     \inputref[mhrepos=\mhinputref@first]{#2}%
1973   \fi%
1974 }

\trefi*
1975 \newcommand\trefi[2][]{%
1976   \edef\trefi@mod{#1}%
1977   \ifx\trefi@mod\@empty\tref{#2}\else\tref{#1\@QuestionMark#2}\fi%
1978 }
1979 \newcommand\trefii[3][]{%
1980   \edef\trefi@mod{#1}%
1981   \ifx\trefi@mod\@empty\tref{#2-#3}\else\tref{#1\@QuestionMark#2-#3}\fi%
1982 }

\defi*
1983 \def\defii#1#2{\defi{#1!#2}}
1984 \def\Defii#1#2{\Defi{#1!#2}}
1985 \def\defiis#1#2{\defis{#1!#2}}
1986 \def\Defiis#1#2{\Defis{#1!#2}}
1987 \def\defiii#1#2#3{\defi{#1!#2!#3}}
1988 \def\Defiii#1#2#3{\Defi{#1!#2!#3}}
1989 \def\defiiis#1#2#3{\defis{#1!#2!#3}}
1990 \def\Defiiis#1#2#3{\Defis{#1!#2!#3}}
1991 \def\defiv#1#2#3#4{\defi{#1!#2!#3!#4}}
1992 \def\Defiv#1#2#3#4{\Defi{#1!#2!#3!#4}}
1993 \def\defivs#1#2#3#4{\defis{#1!#2!#3!#4}}
1994 \def\Defivs#1#2#3#4{\Defis{#1!#2!#3!#4}}
1995 \def\adefi#1#2{\defi[name=#2]{#1}}
1996 \def\adefii#1#2#3{\defi[name=#2-#3]{#1}}
1997 \def\adefiii#1#2#3#4{\defi[name=#2-#3-#4]{#1}}
1998 \def\adefiv#1#2#3#4#5{\defi[name=#2-#3-#4-#5]{#1}}

1999 \newlinechar=\old@newlinechar

```