

fmocdmac — FM's OCD L^AT_EX Macro*

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Abstract

This package contains almost all the latex macros I heavily use in my tcs research activity and, in particular, in the writing of conference and journal articles. As few of my co-authors have kindly pointed out, and probably many have thought, they are somehow a clear expression of an underlying ocd-like behavior... hence the name!

1 Implementation & Usage

```
1 <*package>
  Required external packages:
2
3 \RequirePackage{etoolbox}
4
5 \RequirePackage{xargs}
6 \RequirePackage{xspace}
7 \RequirePackage{stringstrings}
8
  Package options:
9
10 %% Auxiliary packages
11 \newif\ifaux@ \aux@false
12 \DeclareOption{aux}{\aux@true}
13 \DeclareOption{noaux}{\aux@false}
14
15 %% AMS defaults
16 \newif\ifamsdef@ \amsdef@true
17 \DeclareOption{noamsdef}{\amsdef@false}
18
19 %% AMS theorem tools
20 \newif\ifamsthm@ \amsthm@true
21 \DeclareOption{noamsthm}{\amsthm@false}
22
23 %% Extended Theorem tools
24 \newif\ifthmtls@ \thmtls@true
25 \DeclareOption{nothmtls}{\thmtls@false}
26
27 %% Enumeration tools
28 \newif\ifenmtls@ \enmtls@true
29 \DeclareOption{noenmtls}{\enmtls@false}
30
31 %% Hyper reference
32 \newif\ifhympref@ \hympref@true
33 \DeclareOption{nohympref}{\hympref@false}
34
35 %% Font tools
36 \newif\iffnttls@ \fnttls@true
```

*This document describes version v0.7 of the fmocdmac package, last revised 2022/02/06.

```

37 \DeclareOption{nofnttts}{\fnttts@false}
38
39 %% Camera-ready version
40 \newif\ifcrv@ \crv@false
41 \DeclareOption{crv}{\crv@true}
42
43 %% Change bars
44 \newif\ifchgbar@ \chgbar@false
45 \DeclareOption{chgbar}{\chgbar@true}
46
47 %% Line numbers
48 \newif\iflinnum@ \linnum@false
49 \DeclareOption{linnum}{\linnum@true}
50
51
52 %% Text macro generation
53 \newif\iftxtgen@ \txtgen@false
54 \DeclareOption{txtgen}{\txtgen@true}
55 \DeclareOption{notxtgen}
56   {\txtgen@false\text@false\com@false\gam@false\log@false\aut@false}
57
58 %% Math macro generation
59 \newif\ifmthgen@ \mthgen@false
60 \DeclareOption{mthgen}{\mthgen@true}
61 \DeclareOption{nomthgen}
62   {\mthgen@false\math@false\gam@false\log@false\aut@false}
63
64
65 %% Elementary macros for text
66 \newif\iftext@ \text@false
67 \DeclareOption{text}{\text@true\txtgen@true}
68 \DeclareOption{notext}{\text@false}
69
70 %% Elementary macros for math
71 \newif\ifmath@ \math@false
72 \DeclareOption{math}{\math@true\mthgen@true}
73 \DeclareOption{nomath}{\math@false}
74
75
76 %% Macros for computational-complexity classes
77 \newif\ifcom@ \com@false
78 \DeclareOption{com}{\com@true\txtgen@true}
79 \DeclareOption{nocom}{\com@false}
80
81
82 %% Macros for games
83 \newif\ifgam@ \gam@false
84 \DeclareOption{gam}{\gam@true\txtgen@true\mthgen@true}
85 \DeclareOption{nogam}{\gam@false}
86
87 %% Macros for logics
88 \newif\iflog@ \log@false
89 \DeclareOption{log}{\log@true\txtgen@true\mthgen@true}
90 \DeclareOption{nolog}{\log@false}
91
92 %% Macros for automata
93 \newif\ifaut@ \aut@false
94 \DeclareOption{aut}{\aut@true\txtgen@true\mthgen@true}
95 \DeclareOption{noaut}{\aut@false}
96
97
98 %% Format-related tricks
99 \newif\iffirm@ \firm@false

```

```

100 \DeclareOption{frm}{\frm@true}
101 \DeclareOption{nofrm}{\frm@false}
102
103
104 %% Figure-related tricks
105 \newif\iffig@ \fig@false
106 \DeclareOption{fig}{\fig@true}
107 \DeclareOption{nofig}{\fig@false}
108
109 %% Wrapfig package
110 \newif\ifwrpfig@ \wrpfig@true
111 \DeclareOption{nowrpfig}{\wrpfig@false}
112
113
114 %% Table-related tricks
115 \newif\iftab@ \tab@false
116 \DeclareOption{tab}{\tab@true}
117 \DeclareOption{notab}{\tab@false}
118
119
120 %% Algorithm-related tricks
121 \newif\ifalg@ \alg@false
122 \DeclareOption{alg}{\alg@true}
123 \DeclareOption{noalg}{\alg@false}
124

```

Option-processing code:

```

125
126 \DeclareOption*{\PackageWarning{fmodcmac}{Unknown~'\CurrentOption'}}%
127
128 \ExecuteOptions{aux,txtgen,mthgen,text,math,com,gam,log,aut}%
129
130 \ProcessOptions\relax%
131
132 \ifcsdef{if@twocolumn}{\newif\if@twocolumn}
133
134 %%*****
135 %%** Auxiliary Tricks *****
136 %%*****
137 \ifaux@
138
139 \ifamsdef@
140   % AMS Packages
141   \RequirePackage{amsmath}
142   \RequirePackage{amssymb}
143   \interdisplaylinepenalty=2500
144 \fi
145
146 \ifamsthm@
147   % AMS Theorem Tools
148   \RequirePackage{amsthm}
149 \fi
150
151 \ifthmtls@
152   % Extended Theorem Tools
153   \RequirePackage{thmtools, thm-restate}
154 \fi
155
156 \ifenmtls@
157   % Enumeration Tools
158   \RequirePackage{paralist}
159 \fi
160
161 \ifhympref@

```

```

162 % Hyper References
163 \RequirePackage{hyperref}
164
165 \hypersetup
166 {
167     pdfsubject      = {},
168     pdfkeywords     = {},
169     pdfproducer     = {},
170     pdfcreator      = {},
171     pdfpagemode     = {UseNone},
172     pdfstartview    = {FitH},
173     urlcolor        = {blue},
174     colorlinks
175 }
176 \fi
177
178 \iffnttls@
179 % Font Tools
180 \RequirePackage[final]{microtype}
181 \fi
182
183 \ifcrv@
184 % Camera-Ready Version
185
186 %%...
187
188 \else
189 % Draft Version
190
191 %%...
192
193 \ifchgbar@
194 % Change Bars
195 \RequirePackage{changebar}
196 \fi
197
198 \iflinnum@
199 % Line Numbers
200 \if@twocolumn
201     \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
202 \else
203     \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
204 \fi
205 \fi
206
207 %%...
208
209 \fi
210
211 \fi
212 %%*****%
213 %%*****%
214 %%** Auxiliary Font Declarations *****%
215 %%*****%

```

\mathbbo Bbo Math Font: ... to do!

```
216 \ifdef{\mathbbo}{\DeclareMathAlphabet{\mathbbo}{U}{bbold}{m}{n}}
```

\matheus Eus Math Font: ... to do!

```
217 \ifdef{\matheus}{\DeclareMathAlphabet{\matheus}{U}{eus}{m}{n}}
```

\mathpzc Pzc Math Font: ... to do!

```
218 \ifdef{\mathpzc}{\DeclareMathAlphabet{\mathpzc}{T1}{pzc}{m}{it}}
```

`\mathscr` **Scr Math Font:** ... to do!

```

219 \ifdef{\mathscr}{\DeclareMathAlphabet{\mathscr}{U}{rsfs}{m}{n}}

220 %*****%
221 %*****%
222 %** Auxiliary Alphabet Letters *****%
223 %*****%

```

`\omicron` **Auxiliary Greek lowercase letter:** ... to do!

```

224 \csdef{omicron}{o}

```

`\Alpha`, ... **Auxiliary Greek uppercase letters:** ... to do!

```

225 \csdef{Alpha}{A} \csdef{Beta}{B} \csdef{Epsilon}{E} \csdef{varEpsilon}{E}
226 \csdef{Zeta}{Z} \csdef{Eta}{H} \csdef{Iota}{I} \csdef{Kappa}{K}
227 \csdef{varKappa}{K} \csdef{Mu}{M} \csdef{Nu}{N} \csdef{Omicron}{O}
228 \csdef{Rho}{P} \csdef{varRho}{P} \csdef{Tau}{T} \csdef{Chi}{X}

229 %*****%
230 %*****%
231 %** Tools *****%
232 %*****%

```

`\empchk` **Emptiness check:** `\empchk{⟨A⟩}{⟨B⟩}` evaluates to the empty string, if Argument $\langle A \rangle$ is empty, and to Argument $\langle B \rangle$, otherwise.

- `\empchk{}{B}` = “”
- `\empchk{A}{B}` = “B”

```

233 \newcommand{\empchk}[2]
234   {\if#1&\else#2\fi}

```

`\defval` **Default value:** `\defval{⟨A⟩}{⟨B⟩}` evaluates to Argument $\langle B \rangle$, if Argument $\langle A \rangle$ is empty, and to Argument $\langle A \rangle$ itself, otherwise.

- `\defval{}{B}` = “B”
- `\defval{A}{B}` = “A”

```

235 \newcommand{\defval}[2]
236   {\if#1&#2\else#1\fi}

237 %*****%

```

`\arglef` **Left extension:** `\arglef{⟨A⟩}{⟨B⟩}` evaluates to the concatenation $\langle AB \rangle$ of the two arguments, if Argument $\langle B \rangle$ is non-empty, and to the empty string, otherwise.

- `\arglef{A}{}{}` = “”
- `\arglef{A}{B}` = “AB”

```

238 \newcommand{\arglef}[2]
239   {\empchk{#2}{#1\allowbreak#2}}

```

`\argrig` **Right extension:** `\argrig{⟨A⟩}{⟨B⟩}` evaluates to the concatenation $\langle AB \rangle$ of the two arguments, if Argument $\langle A \rangle$ is non-empty, and to the empty string, otherwise.

- `\argrig{}{B}` = “”
- `\argrig{A}{B}` = “AB”

```

240 \newcommand{\argrig}[2]
241   {\empchk{#1}{#1\allowbreak#2}}

```

`\argmid` **Middle extension:** `\argmid{⟨A⟩}{⟨B⟩}{⟨C⟩}` evaluates to the concatenation $\langle ABC \rangle$ of the three arguments, if Argument $\langle B \rangle$ is non-empty, and to the empty string, otherwise.

- `\argmid{A}{}{C}` = “”
- `\argmid{A}{B}{C}` = “ABC”

```

242 \newcommand{\argmid}[3]
243   {\empchk{#2}{#1\allowbreak#2\allowbreak#3}}

```

\argsep **Separators:** `\argsep{<A>}{}{<C>}` evaluates to Argument `<C>`, if Argument `<A>` is empty, to Argument `<A>`, if Argument `<C>` is empty, and to the concatenation `<ABC>`, otherwise.

- `\argsep{}{B}{C}` = “C”
- `\argsep{A}{B}{}` = “A”
- `\argsep{A}{}{C}` = “AC”
- `\argsep{A}{B}{C}` = “ABC”

```

244 \newcommand{\argsep}[3]
245   {\if&#1&#3\else#1\allowbreak\arglef{#2}{#3}\fi}

246 %*****%

```

\varcmd **Variadic commands:** `\varcmd{<A>}{}{<C>}{<D>}{<E>}{<F>} ...` to do!

```

247 \newcommand{\varcmd}[6]
248   {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
249     {\csname check#1arg\endcsname{\argsep{##1}{#4}{##2}}}%
250     \expandafter\newcommand\csname check#1arg\endcsname[1]
251       {\csname @ifnextchar\endcsname%
252         \bgroup{\csname gobble#1arg\endcsname{##1}{#2{##1#5}#6}}}%
253     \expandafter\newcommand\csname#1\endcsname[1]
254       {\csname check#1arg\endcsname{#3##1}}}

255 %*****%

```

\seqoftag **Sequence of tags:** `\seqoftag{<A>}{}{<C>} ...` to do!

```

256 \newcommand{\seqoftag}[3]
257   {\@for\itr:={#1}\do%
258     {\expandafter\csedef{\itr#2}%
259       {\noexpand\csname #3\endcsname{\itr}}}}

```

\seqofcmd **Sequence of commands:** `\seqofcmd{<A>}{}{<C>} ...` to do!

```

260 \newcommand{\seqofcmd}[3]
261   {\@for\itr:={#1}\do%
262     {\expandafter\csedef{\itr#2}%
263       {\noexpand\csname #3\endcsname{\csname \itr\endcsname}}}}

264 %*****%

```

\seqoflatlow **Sequence of Latin lowercase letters:** `\seqoflatlow{<A>}{} ...` to do!

```

265 \newcommand{\seqoflatlow}
266   {\seqoftag{a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z}}

```

\seqoflatupp **Sequence of Latin uppercase letters:** `\seqoflatupp{<A>}{} ...` to do!

```

267 \newcommand{\seqoflatupp}
268   {\seqoftag{A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z}}

```

\seqoflatlet **Sequence of Latin letters:** `\seqoflatlet{<A>}{} ...` to do!

```

269 \newcommand{\seqoflatlet}[2]
270   {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}

271 %*****%

```

\seqofgrklow **Sequence of Greek lowercase letters:** `\seqofgrklow{<A>}{} ...` to do!

```

272 \newcommand{\seqofgrklow}
273   {\seqofcmd{alpha,beta,gamma,delta,epsilon,varepsilon,zeta,eta,theta,vartheta,%
274     iota,kappa,varkappa,lambda,mu,nu,xi,omicron,pi,varpi,rho,varrho,sigma,%
275     varsigma,tau,upsilon,phi,varphi,chi,psi,omega}}

```

\seqofgrkupp **Sequence of Greek uppercase letters:** `\seqofgrkupp{<A>}{} ...` to do!

```

276 \newcommand{\seqofgrkupp}
277   {\seqofcmd{Alpha,Beta,Gamma,Delta,Epsilon,varEpsilon,Zeta,Eta,Theta,varTheta,%
278     Iota,Kappa,varKappa,Lambda,Mu,Nu,Xi,Omicron,Pi,varPi,Rho,varRho,Sigma,%
279     varSigma,Tau,Upsilon,Phi,varPhi,Chi,Psi,Omega}}

```

```

\seqofgrklet Sequence of Greek letters: \seqofgrklet{⟨A⟩}{⟨B⟩} ... to do!
280 \newcommand{\seqofgrklet}[2]
281   {\seqofgrklow{#1}{#2}\seqofgrkupp{#1}{#2}}

282 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\seqoflow Sequence of lowercase letters: \seqoflow{⟨A⟩}{⟨B⟩} ... to do!
283 \newcommand{\seqoflow}[2]
284   {\seqoflatlow{#1}{#2}\seqofgrklow{#1}{#2}}

\seqofupp Sequence of uppercase letters: \seqofupp{⟨A⟩}{⟨B⟩} ... to do!
285 \newcommand{\seqofupp}[2]
286   {\seqoflatupp{#1}{#2}\seqofgrkupp{#1}{#2}}

\seqoflet Sequence of all letters: \seqoflet{⟨A⟩}{⟨B⟩} ... to do!
287 \newcommand{\seqoflet}[2]
288   {\seqoflow{#1}{#2}\seqofupp{#1}{#2}}

289 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
290 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
291 %** Text Meta Commands %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
292 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\newtxt ... to do!
  • \newtxt[\rmfamily]{Name}[sub][sup][Ext] = “NamesubExt”
  • \newtxt[\sffamily]{Name}[sub][sup][Ext] = “NamesubExt”
  • \newtxt[\ttfamily]{Name}[sub][sup][Ext] = “NamesubExt”
293 \newcommandx{\newtxt}[5][1=, 3=, 4=, 5=]
294   {\text{#1#2\txsubsup{#1}{#3}{#4}{#5}\xspace}}

\newtxtsty ... to do!
  • \newtxtsty[\rmfamily]{Name}[sub][sup][Ext] = “NamesubExt”
  • \newtxtsty[\rmfamily][\sffamily]{Name}[sub][sup][Ext] = “NamesubExt”
  • \newtxtsty[\rmfamily][\ttfamily]{Name}[sub][sup][Ext] = “NamesubExt”
295 \newcommandx{\newtxtsty}[2][2=]
296   {\newtxt[\defval{#2}{#1}]}

\newxtarg ... to do!
  • \newxtarg[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
  • \newxtarg[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
  • \newxtarg[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
297 \newcommandx{\newxtarg}[7][1=, 3=, 4=, 5=, 7=]
298   {\newtxt{#1}{#2}{#3}{#4}{#5\argmid{#6}{#7}}}

\newxtargsty ... to do!
  • \newxtargsty[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
  • \newxtargsty[\rmfamily][\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
  • \newxtargsty[\rmfamily][\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
299 \newcommandx{\newxtargsty}[2][2=]
300   {\newxtarg[\defval{#2}{#1}]}

\newtxtoarg ... to do!
  • \newtxtoarg[\rmfamily]{Name}[sub][sup][Arg] = “Namesub(Arg)”
  • \newtxtoarg[\sffamily]{Name}[sub][sup][Arg] = “Namesub(Arg)”
  • \newtxtoarg[\ttfamily]{Name}[sub][sup][Arg] = “Namesub(Arg)”
301 \newcommandx{\newtxtoarg}[5][1=, 3=, 4=, 5=]
302   {\newxtarg{#1}{#2}{#3}{#4}[]{}{#5}[]}}

```

```

\newtxtoargsty ... to do!
    • \newtxtoargsty{\rmfamily}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
    • \newtxtoargsty{\rmfamily}{\sffamily}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
    • \newtxtoargsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
303 \newcommandx{\newtxtoargsty}[2][2=]
304   {\newtxtoarg[\defval{#2}{#1}]}

\newtxtpar ... to do!
    • \newtxtpar[\rmfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
    • \newtxtpar[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
    • \newtxtpar[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
305 \newcommandx{\newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
306   {\newtxt{#1}{#2}{#3}{#4}{#5}\argmid{#6}{#7}}

\newtxtparsty ... to do!
    • \newtxtparsty{\rmfamily}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
    • \newtxtparsty{\rmfamily}{\sffamily}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
    • \newtxtparsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
307 \newcommandx{\newtxtparsty}[2][2=]
308   {\newtxtpar[\defval{#2}{#1}]}

\newtxtopar ... to do!
    • \newtxtopar[\rmfamily]{Name}[sub][sup][Par] = “Namesupsub[Par]”
    • \newtxtopar[\sffamily]{Name}[sub][sup][Par] = “Namesupsub[Par]”
    • \newtxtopar[\ttfamily]{Name}[sub][sup][Par] = “Namesupsub[Par]”
309 \newcommandx{\newtxtopar}[5][1=, 3=, 4=, 5=]
310   {\newtxtpar{#1}{#2}{#3}{#4}[] {#5}[]}

\newtxtoparsty ... to do!
    • \newtxtoparsty{\rmfamily}{Name}[sub][sup][Par] = “Namesupsub[Par]”
    • \newtxtoparsty{\rmfamily}{\sffamily}{Name}[sub][sup][Par] = “Namesupsub[Par]”
    • \newtxtoparsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Par] = “Namesupsub[Par]”
311 \newcommandx{\newtxtoparsty}[2][2=]
312   {\newtxtopar[\defval{#2}{#1}]}

\txtsubsup ... to do!
    • \txtsubsup{sub}{} = “sub”; \txtsubsup{}{sup} = “sup”; \txtsubsup{sub}{sup} = “supsub”
    • \txtsubsup[\sffamily]{Aa}{Bb} = “AaBb”
    • \txtsubsup[\ttfamily]{Aa}{Bb} = “AaBb”
313 \newcommand{\txtsubsup}[3]{}
314   {\ensuremath{\empchk{#2}{_}{\text{#1#2}}}\empchk{#3}{^{\text{#1#3}}}}}

315 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\txt ... to do!
    • \txt{Name}[sub][sup][Ext] = “NamesupsubExt”
    • \txt[\scshape]{Name}[sub][sup][Ext] = “NAMEsupSUBEXT”
    • \txt[\bfseries]{Name}[sub][sup][Ext] = “NamesupsubExt”
316 \newcommand{\txt}
317   {\newtxtsty{\txtsty}}

\txtarget ... to do!
    • \txtarget{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesupsubExt1(Arg)Ext2”
    • \txtarget[\scshape]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NAMEsupSUBEXT1(ARG)EXT2”

```



```

    • \txtarg[\bfseries]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
318 \newcommand{\txtarg}
319 {\newtxtargsty{\txtsty}}

\txtoarg ... to do!
    • \txtoarg{Name}[sub][sup][Arg] = "Namesub(Arg)"
    • \txtoarg[\scshape]{Name}[sub][sup][Arg] = "NAMESUB(ARG)"
    • \txtoarg[\bfseries]{Name}[sub][sup][Arg] = "Namesub(Arg)"
320 \newcommand{\txtoarg}
321 {\newtxtoargsty{\txtsty}}

\txtpar ... to do!
    • \txtpar{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
    • \txtpar[\scshape]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NAMESUBEXT1[PAR]EXT2"
    • \txtpar[\bfseries]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
322 \newcommand{\txtpar}
323 {\newtxtparsty{\txtsty}}

\txtopar ... to do!
    • \txtopar{Name}[sub][sup][Par] = "Namesub[Par]"
    • \txtopar[\scshape]{Name}[sub][sup][Par] = "NAMESUB[PAR]"
    • \txtopar[\bfseries]{Name}[sub][sup][Par] = "Namesub[Par]"
324 \newcommand{\txtopar}
325 {\newtxtoparsty{\txtsty}}

\txtsty ... to do!
326 \newcommand{\txtsty}
327 {\mdseries\upshape\rmfamily}

328 %*****%

\cmdtxt ... to do!
    • \cmdtxt{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtNewCmd{Name}[sub][sup][Ext] = NAMESUBEXT
329 \newcommand{\cmdtxt}[1]
330 {\csdef{txt#1}{\newtxtsty{\csname txtsty#1\endcsname}}}

\cmdtxtarg ... to do!
    • \cmdtxtarg{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBEXT1(ARG)EXT2
331 \newcommand{\cmdtxtarg}[1]
332 {\csdef{txtarg#1}{\newtxtargsty{\csname txtsty#1\endcsname}}}

\cmdtxtoarg ... to do!
    • \cmdtxtoarg{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUB(ARG)
333 \newcommand{\cmdtxtoarg}[1]
334 {\csdef{txtoarg#1}{\newtxtoargsty{\csname txtsty#1\endcsname}}}

\cmdtxtpar ... to do!
    • \cmdtxtpar{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2
335 \newcommand{\cmdtxtpar}[1]
336 {\csdef{txtpar#1}{\newtxtparsty{\csname txtsty#1\endcsname}}}

\cmdtxtopar ... to do!

```

```

    • \cmdttxtopar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
      \ttxtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]
337 \newcommand{\cmdttxtopar}[1]
338   {\csdef{ttxtopar#1}{\newttxtoparsty{\csname txtsty#1\endcsname}}}

\cmdttxall ... to do!
    • \cmdttxall{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
      \txtNewCmd{Name}[sub][sup][Ext] = NAMESUBEXT
      \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBEXT1(ARG)EXT2
      \txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUB(ARG)
      \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2
      \ttxtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]
339 \newcommand{\cmdttxall}[1]
340   {\cmdttx{#1}\cmdttxarg{#1}\cmdttxoarg{#1}\cmdttxpar{#1}\cmdttxtopar{#1}}

341 %%*****%

\usrtxt ... to do!
    • \usrtxt{cmdName}{Suf}{}; \cmdNameSuf = cmdName
      \usrtxt{cmdName}{Suf}{arg}; \cmdNameSuf{Arg} = cmdName(Arg)
      \usrtxt{cmdName}{Suf}{par}; \cmdNameSuf{Par} = cmdName[Par]
    • \usrtxt{cmdName}{Suf}{newName}; \cmdNameSuf = newName
      \usrtxt{cmdName}{Suf}{arg}[newName]; \cmdNameSuf{Arg} = newName(Arg)
      \usrtxt{cmdName}{Suf}{par}[newName]; \cmdNameSuf{Par} = newName[Par]
342 \newcommandx{\usrtxt}[4][4=]
343   {\csdef{#1#2}{\csname txt#3\endcsname{\defval{#4}{#1}}}}

344 %%*****%
345 %%*****%
346 %** Math Meta Commands *****%
347 %%*****%

\newmth ... to do!
    • \newmth[mathrm]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmth[mathsf]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmth[mathtt]{Name}[sub][sup][Ext] = "NamesubExt"
348 \newcommandx{\newmth}[5][1=, 3=, 4=, 5=]
349   {\ensuremath{\csname#1\endcsname{#2}\mthsubsup{#3}{#4}{#5}}}

\newmthsty ... to do!
    • \newmthsty[mathrm]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmthsty[mathsf]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmthsty[mathtt]{Name}[sub][sup][Ext] = "NamesubExt"
350 \newcommandx{\newmthsty}[2][2=]
351   {\newmth[\defval{#2}{#1}]}

\newmtharg ... to do!
    • \newmtharg[mathrm]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmtharg[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmtharg[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
352 \newcommandx{\newmtharg}[7][1=, 3=, 4=, 5=, 7=]
353   {\newmth{#1}{#2}{#3}{#4}{#5}\argmid{\!\left(\!{#6}{\right)}\arglef{\!}{#7}}}}

\newmthargsty ... to do!
    • \newmthargsty[mathrm]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmthargsty[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmthargsty[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"

```

```

354 \newcommandx{\newmthargsty}[2][2=]
355   {\newmtharg[\defval{#2}{#1}]}

\newmthoarg ... to do!


- \newmthoarg[\mathrm]{Name}[sub][sup][Arg] = “Namesub(Arg)”
- \newmthoarg[\mathsf]{Name}[sub][sup][Arg] = “Namesub(Arg)”
- \newmthoarg[\mathtt]{Name}[sub][sup][Arg] = “Namesub(Arg)”


356 \newcommandx{\newmthoarg}[5][1=, 3=, 4=, 5=]
357   {\newmtharg[#1]{#2}[#3][#4][#5]}

\newmthoargsty ... to do!


- \newmthoargsty[\mathrm]{Name}[sub][sup][Arg] = “Namesub(Arg)”
- \newmthoargsty[\mathrm]{\mathsf}{Name}[sub][sup][Arg] = “Namesub(Arg)”
- \newmthoargsty[\mathrm]{\mathtt}{Name}[sub][sup][Arg] = “Namesub(Arg)”


358 \newcommandx{\newmthoargsty}[2][2=]
359   {\newmtharg[\defval{#2}{#1}]}

\newmthpar ... to do!


- \newmthpar[\mathrm]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesubExt1[Par]Ext2”
- \newmthpar[\mathsf]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesubExt1[Par]Ext2”
- \newmthpar[\mathtt]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesubExt1[Par]Ext2”


360 \newcommandx{\newmthpar}[7][1=, 3=, 4=, 5=, 7=]
361   {\newmth[#1]{#2}[#3][#4][#5\argmid{\!\left[{}]{#6}{\right]}\arglef{\!}{#7}]]}

\newmthparsty ... to do!


- \newmthparsty[\mathrm]{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesubExt1[Par]Ext2”
- \newmthparsty[\mathrm]{\mathsf}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesubExt1[Par]Ext2”
- \newmthparsty[\mathrm]{\mathtt}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesubExt1[Par]Ext2”


362 \newcommandx{\newmthparsty}[2][2=]
363   {\newmthpar[\defval{#2}{#1}]}

\newmthopar ... to do!


- \newmthopar[\mathrm]{Name}[sub][sup][Par] = “Namesub[Par]”
- \newmthopar[\mathsf]{Name}[sub][sup][Par] = “Namesub[Par]”
- \newmthopar[\mathtt]{Name}[sub][sup][Par] = “Namesub[Par]”


364 \newcommandx{\newmthopar}[5][1=, 3=, 4=, 5=]
365   {\newmthpar[#1]{#2}[#3][#4][#5]}

\newmthoparsty ... to do!


- \newmthoparsty[\mathrm]{Name}[sub][sup][Par] = “Namesub[Par]”
- \newmthoparsty[\mathrm]{\mathsf}{Name}[sub][sup][Par] = “Namesub[Par]”
- \newmthoparsty[\mathrm]{\mathtt}{Name}[sub][sup][Par] = “Namesub[Par]”


366 \newcommandx{\newmthoparsty}[2][2=]
367   {\newmthopar[\defval{#2}{#1}]}

\mthsubsup ... to do!
368 \newcommand{\mthsubsup}[2]
369   {\empchk{#1}{_}{#1}}\empchk{#2}{^}{#2}\!}}

370 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\mth ... to do!


- \mth{Name}[sub][sup][Ext] = “NamesubExt”
- \mth[\mathbf]{Name}[sub][sup][Ext] = “NamesubExt”
- \mth[\mathtt]{Name}[sub][sup][Ext] = “NamesubExt”

```

```

371 \newcommand{\mth}
372   {\newmthsty{\mthsty}}

\mtharg ... to do!


- \mtharg{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$
- \mtharg[\mathbf]{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1(Arg)Ext2$
- \mtharg[\mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathtt{Name}_{sub}^{sup}Ext1(Arg)Ext2$


373 \newcommand{\mtharg}
374   {\newmthargsty{\mthsty}}

\mthoarg ... to do!


- \mthoarg{Name}[sub][sup][Arg] =  $Name_{sub}^{sup}(Arg)$
- \mthoarg[\mathbf]{Name}[sub][sup][Arg] =  $\mathbf{Name}_{sub}^{sup}(Arg)$
- \mthoarg[\mathtt]{Name}[sub][sup][Arg] =  $\mathtt{Name}_{sub}^{sup}(Arg)$


375 \newcommand{\mthoarg}
376   {\newmthoargsty{\mthsty}}

\mthpar ... to do!


- \mthpar{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$
- \mthpar[\mathbf]{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1[Par]Ext2$
- \mthpar[\mathtt]{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathtt{Name}_{sub}^{sup}Ext1[Par]Ext2$


377 \newcommand{\mthpar}
378   {\newmthparsty{\mthsty}}

\mthopar ... to do!


- \mthopar{Name}[sub][sup][Par] =  $Name_{sub}^{sup}Par$
- \mthopar[\mathbf]{Name}[sub][sup][Par] =  $\mathbf{Name}_{sub}^{sup}Par$
- \mthopar[\mathtt]{Name}[sub][sup][Par] =  $\mathtt{Name}_{sub}^{sup}Par$


379 \newcommand{\mthopar}
380   {\newmthoparsty{\mthsty}}

\mthsty ... to do!
381 \newcommand{\mthsty}
382   {}

383 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\cmdmth ... to do!


- \cmdmth{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthNewCmd{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$


384 \newcommand{\cmdmth}[1]
385   {\csdef{mth#1}{\newmthsty{mthsty#1}}}

\cmdmtharg ... to do!


- \cmdmtharg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$


386 \newcommand{\cmdmtharg}[1]
387   {\csdef{mtharg#1}{\newmthargsty{mthsty#1}}}

\cmdmthoarg ... to do!


- \cmdmthoarg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthoargNewCmd{Name}[sub][sup][Arg] =  $Name_{sub}^{sup}(Arg)$


388 \newcommand{\cmdmthoarg}[1]
389   {\csdef{mthoarg#1}{\newmthoargsty{mthsty#1}}}

\cmdmthpar ... to do!

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    • \cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
390 \newcommand{\cmdmthpar}[1]
391   {\csdef{mthpar#1}{\newmthparsty{mthsty#1}}}

\cmdmthopar ... to do!
    • \cmdmthopar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthoparNewCmd{Name}[sub][sup][Par] = Namesupsub[Par]
392 \newcommand{\cmdmthopar}[1]
393   {\csdef{mthopar#1}{\newmthoparsty{mthsty#1}}}

\cmdmthall ... to do!
    • \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthNewCmd{Name}[sub][sup][Ext] = NamesupsubExt
      \mthargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
      \mthoargNewCmd{Name}[sub][sup][Arg] = Namesupsub(Arg)
      \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
      \mthoparNewCmd{Name}[sub][sup][Par] = Namesupsub[Par]
394 \newcommand{\cmdmthall}[1]
395   {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}

396 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\usrmth ... to do!
    • \usrmth{cmdName}{Suf}{}; \cmdNameSuf = cmdName
      \usrmth{cmdName}{Suf}{arg}; \cmdNameSuf{Arg} = cmdName(Arg)
      \usrmth{cmdName}{Suf}{par}; \cmdNameSuf{Par} = cmdName[Par]
    • \usrmth{cmdName}{Suf}{}[newName]; \cmdNameSuf = newName
      \usrmth{cmdName}{Suf}{arg}[newName]; \cmdNameSuf{Arg} = newName(Arg)
      \usrmth{cmdName}{Suf}{par}[newName]; \cmdNameSuf{Par} = newName[Par]
397 \newcommandx{\usrmth}[4][4=]
398   {\csdef{#1#2}{\csname mth#3\endcsname{\defval{#4}{#1}}}}

399 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\usrmthlatlow ... to do!
400 \newcommandx{\usrmthlatlow}[4][4=]
401   {\usrmth{#1}{#2}{#3}[#4]\seqoflatlow{#1#2}{mth#3}}

\usrmthlatupp ... to do!
402 \newcommandx{\usrmthlatupp}[4][4=]
403   {\usrmth{#1}{#2}{#3}[#4]\seqoflatupp{#1#2}{mth#3}}

\usrmthlatlet ... to do!
404 \newcommandx{\usrmthlatlet}[4][4=]
405   {\usrmth{#1}{#2}{#3}[#4]\seqoflatlet{#1#2}{mth#3}}

\usrmthgrklow ... to do!
406 \newcommandx{\usrmthgrklow}[4][4=]
407   {\usrmth{#1}{#2}{#3}[#4]\seqofgrklow{#1#2}{mth#3}}

\usrmthgrkupp ... to do!
408 \newcommandx{\usrmthgrkupp}[4][4=]
409   {\usrmth{#1}{#2}{#3}[#4]\seqofgrkupp{#1#2}{mth#3}}

\usrmthgrklet ... to do!
410 \newcommandx{\usrmthgrklet}[4][4=]
411   {\usrmth{#1}{#2}{#3}[#4]\seqofgrklet{#1#2}{mth#3}}

\usrmthlow ... to do!
412 \newcommandx{\usrmthlow}[4][4=]
413   {\usrmth{#1}{#2}{#3}[#4]\seqoflow{#1#2}{mth#3}}

```

```

\usrmthupp ... to do!
414 \newcommandx{\usrmthupp}[4][4=]
415   {\usrmth{#1}{#2}{#3}[#4]\seqofupp{#1#2}{mth#3}}

\usrmthlet ... to do!
416 \newcommandx{\usrmthlet}[4][4=]
417   {\usrmth{#1}{#2}{#3}[#4]\seqoflet{#1#2}{mth#3}}

418 %%*****%
419 %%*****%
420 %%** Text Macro Generators *****%
421 %%*****%
422 \iftxtgen@

\txtdef, ... ... to do!
  • \txtdef{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
  • \txtargdef{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \txtpardef{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 

423 %% Style for Definitions
424 \cmdtxtall{def}\newcommand{\txtstydef}{\normalfont\bfseries\em}

\cmdtxtdef ... to do!
  • \cmdtxtdef{cmdName};
    \cmdName[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
  • \cmdtxtdef{cmdName}[newName];
    \cmdName[sub][sub][ext] =  $newName_{sub}^{sub}ext$ 

425 \newcommandx{\cmdtxtdef}[2][2=]
426   {\usrtxt{#1}{}\{def\}[#2]}

\cmdtxtargdef ... to do!
  • \cmdtxtargdef{cmdName};
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
  • \cmdtxtargdef{cmdName}[newName];
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $newName_{sub}^{sub}ext1(arg)ext2$ 

427 \newcommandx{\cmdtxtargdef}[2][2=]
428   {\usrtxt{#1}{}\{argdef\}[#2]}

\cmdtxtoargdef ... to do!
  • \cmdtxtoargdef{cmdName};
    \cmdName[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
  • \cmdtxtoargdef{cmdName}[newName];
    \cmdName[sub][sub][arg] =  $newName_{sub}^{sub}(arg)$ 

429 \newcommandx{\cmdtxtoargdef}[2][2=]
430   {\usrtxt{#1}{}\{oargdef\}[#2]}

\cmdtxtpardef ... to do!
  • \cmdtxtpardef{cmdName};
    \cmdName[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
  • \cmdtxtpardef{cmdName}[newName];
    \cmdName[sub][sub][ext1]{par}[ext2] =  $newName_{sub}^{sub}ext1[par]ext2$ 

431 \newcommandx{\cmdtxtpardef}[2][2=]
432   {\usrtxt{#1}{}\{pardef\}[#2]}

\cmdtxtopardef ... to do!
  • \cmdtxtopardef{cmdName};
    \cmdName[sub][sub][par] =  $cmdName_{sub}^{sub}[par]$ 
  • \cmdtxtopardef{cmdName}[newName];
    \cmdName[sub][sub][par] =  $newName_{sub}^{sub}[par]$ 

```

```

433 \newcommandx{\cmdtxtopardef}[2][2=]
434   {\usrtxt{#1}{\opardef}[#2]}

\txtabr, ... ... to do!
    • \txtabr{Name}[sub][sup][Ext] =  $Name_{\text{sub}}^{\text{sup}} \text{Ext}$ 
    • \txtargabr{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{\text{sub}}^{\text{sup}} \text{Ext1}(\text{Arg})\text{Ext2}$ 
    • \txtparabr{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{\text{sub}}^{\text{sup}} \text{Ext1}[\text{Par}]\text{Ext2}$ 

435 %% Style for Abbreviations
436 \cmdtxtall{abr}\newcommand{\txtstyabr}{\em}

\cmdtxtabr ... to do!
    • \cmdtxtabr{cmdName};
      \cmdName[sub][sub][ext] =  $cmdName_{\text{sub}}^{\text{sub}} \text{ext}$ 
    • \cmdtxtabr{cmdName}[newName];
      \cmdName[sub][sub][ext] =  $newName_{\text{sub}}^{\text{sub}} \text{ext}$ 

437 \newcommandx{\cmdtxtabr}[2][2=]
438   {\usrtxt{#1}{\abr}[#2]}

\cmdtxtargabr ... to do!
    • \cmdtxtargabr{cmdName};
      \cmdName[sub][sub][ext1]{arg}[ext2] =  $cmdName_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg})\text{ext2}$ 
    • \cmdtxtargabr{cmdName}[newName];
      \cmdName[sub][sub][ext1]{arg}[ext2] =  $newName_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg})\text{ext2}$ 

439 \newcommandx{\cmdtxtargabr}[2][2=]
440   {\usrtxt{#1}{\argabr}[#2]}

\cmdtxtoargabr ... to do!
    • \cmdtxtoargabr{cmdName};
      \cmdName[sub][sub][arg] =  $cmdName_{\text{sub}}^{\text{sub}}(\text{arg})$ 
    • \cmdtxtoargabr{cmdName}[newName];
      \cmdName[sub][sub][arg] =  $newName_{\text{sub}}^{\text{sub}}(\text{arg})$ 

441 \newcommandx{\cmdtxtoargabr}[2][2=]
442   {\usrtxt{#1}{\oargabr}[#2]}

\cmdtxtparabr ... to do!
    • \cmdtxtparabr{cmdName};
      \cmdName[sub][sub][ext1]{par}[ext2] =  $cmdName_{\text{sub}}^{\text{sub}} \text{ext1}[\text{par}]\text{ext2}$ 
    • \cmdtxtparabr{cmdName}[newName];
      \cmdName[sub][sub][ext1]{par}[ext2] =  $newName_{\text{sub}}^{\text{sub}} \text{ext1}[\text{par}]\text{ext2}$ 

443 \newcommandx{\cmdtxtparabr}[2][2=]
444   {\usrtxt{#1}{\parabr}[#2]}

\cmdtxtoparabr ... to do!
    • \cmdtxtoparabr{cmdName};
      \cmdName[sub][sub][par] =  $cmdName_{\text{sub}}^{\text{sub}}[\text{par}]$ 
    • \cmdtxtoparabr{cmdName}[newName];
      \cmdName[sub][sub][par] =  $newName_{\text{sub}}^{\text{sub}}[\text{par}]$ 

445 \newcommandx{\cmdtxtoparabr}[2][2=]
446   {\usrtxt{#1}{\oparabr}[#2]}

447 %%*****

\txtname, ... ... to do!
    • \txtname{Name}[sub][sup][Ext] =  $NAME_{\text{SUB}}^{\text{SUP}} \text{EXT}$ 
    • \txtargname{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $NAME_{\text{SUB}}^{\text{SUP}} \text{EXT1}(\text{ARG})\text{EXT2}$ 
    • \txtparname{Name}[sub][sup][Ext1]{Par}[Ext2] =  $NAME_{\text{SUB}}^{\text{SUP}} \text{EXT1}[\text{PAR}]\text{EXT2}$ 

```

```

448 %% Style for Names
449 \cmdtxtall{name}\newcommand{\txtstytname}{\normalfont\mdseries\scshape\sffamily}

```

```
\cmdtxtname ... to do!
```

- \cmdtxtname{cmdName};
 \cmdName[sub][sub][ext] = CMDNAME^{SUB}EXT
- \cmdtxtname{cmdName}[newName];
 \cmdName[sub][sub][ext] = NEWNAME^{SUB}EXT

```
450 \newcommandx{\cmdtxtname}[2][2=]
```

```
451 {\usrtxt{#1}{-}{name}[#2]}
```

```
\cmdtxtargname ... to do!
```

- \cmdtxtargname{cmdName};
 \cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAME^{SUB}EXT1(ARG)EXT2
- \cmdtxtargname{cmdName}[newName];
 \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAME^{SUB}EXT1(ARG)EXT2

```
452 \newcommandx{\cmdtxtargname}[2][2=]
```

```
453 {\usrtxt{#1}{-}{argname}[#2]}
```

```
\cmdtxtoargname ... to do!
```

- \cmdtxtoargname{cmdName};
 \cmdName[sub][sub][arg] = CMDNAME^{SUB}(ARG)
- \cmdtxtoargname{cmdName}[newName];
 \cmdName[sub][sub][arg] = NEWNAME^{SUB}(ARG)

```
454 \newcommandx{\cmdtxtoargname}[2][2=]
```

```
455 {\usrtxt{#1}{-}{oargname}[#2]}
```

```
\cmdtxtparname ... to do!
```

- \cmdtxtparname{cmdName};
 \cmdName[sub][sub][ext1]{par}[ext2] = CMDNAME^{SUB}EXT1[PAR]EXT2
- \cmdtxtparname{cmdName}[newName];
 \cmdName[sub][sub][ext1]{par}[ext2] = NEWNAME^{SUB}EXT1[PAR]EXT2

```
456 \newcommandx{\cmdtxtparname}[2][2=]
```

```
457 {\usrtxt{#1}{-}{parname}[#2]}
```

```
\cmdtxtoparname ... to do!
```

- \cmdtxtoparname{cmdName};
 \cmdName[sub][sub][par] = CMDNAME^{SUB}[PAR]
- \cmdtxtoparname{cmdName}[newName];
 \cmdName[sub][sub][par] = NEWNAME^{SUB}[PAR]

```
458 \newcommandx{\cmdtxtoparname}[2][2=]
```

```
459 {\usrtxt{#1}{-}{oparname}[#2]}
```

```
\txtcom, ... ... to do!
```

- \txtcom{Name}[sub][sup][Ext] = NAME^{SUP}EXT
- \txtargcom{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAME^{SUP}EXT1(ARG)EXT2
- \txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2] = NAME^{SUP}EXT1[PAR]EXT2

```
460 %% Style for Complexities
```

```
461 \cmdtxtall{com}\newcommand{\txtstytcom}{\normalfont\mdseries\scshape\rmfamily}
```

```
\cmdtxtcom ... to do!
```

- \cmdtxtcom{cmdName};
 \cmdName[sub][sub][ext] = CMDNAME^{SUB}EXT
- \cmdtxtcom{cmdName}[newName];
 \cmdName[sub][sub][ext] = NEWNAME^{SUB}EXT

```
462 \newcommandx{\cmdtxtcom}[2][2=]
```

```
463 {\usrtxt{#1}{-}{com}[#2]}
```



```

\cmdtxtargcom ... to do!
    • \cmdtxtargcom{cmdName};
      \cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAMESUBSUBEXT1(ARG)EXT2
    • \cmdtxtargcom{cmdName}[newName];
      \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAMESUBSUBEXT1(ARG)EXT2
464 \newcommandx{\cmdtxtargcom}[2][2=]
465   {\usrtxt{#1}{-}{argcom}[#2]}

\cmdtxtoargcom ... to do!
    • \cmdtxtoargcom{cmdName};
      \cmdName[sub][sub][arg] = CMDNAMESUBSUB(ARG)
    • \cmdtxtoargcom{cmdName}[newName];
      \cmdName[sub][sub][arg] = NEWNAMESUBSUB(ARG)
466 \newcommandx{\cmdtxtoargcom}[2][2=]
467   {\usrtxt{#1}{-}{oargcom}[#2]}

\cmdtxtparcom ... to do!
    • \cmdtxtparcom{cmdName};
      \cmdName[sub][sub][ext1]{par}[ext2] = CMDNAMESUBSUBEXT1[PAR]EXT2
    • \cmdtxtparcom{cmdName}[newName];
      \cmdName[sub][sub][ext1]{par}[ext2] = NEWNAMESUBSUBEXT1[PAR]EXT2
468 \newcommandx{\cmdtxtparcom}[2][2=]
469   {\usrtxt{#1}{-}{parcom}[#2]}

\cmdtxtoparcom ... to do!
    • \cmdtxtoparcom{cmdName};
      \cmdName[sub][sub][par] = CMDNAMESUBSUB[PAR]
    • \cmdtxtoparcom{cmdName}[newName];
      \cmdName[sub][sub][par] = NEWNAMESUBSUB[PAR]
470 \newcommandx{\cmdtxtoparcom}[2][2=]
471   {\usrtxt{#1}{-}{oparcom}[#2]}

472 \fi
473 %*****
474 %*****
475 %** Math Macro Generators *****
476 %*****
477 \ifmthgen@

\mthname, ... ... to do!
    • \mthname{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargname{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparname{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1[Par]Ext2$ 
478 %% Style for Names
479 \cmdmthall{name}\newcommand{\mthstname}{\mathcal}

\AName, ... ... to do!
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
480 \seqoflatupp{Name}{mthname}

\cmdmthname ... to do!
    • \cmdmthname{CMDNAME};
      \CMDNAMEName[sub][sub][ext] =  $CMDNAME_{sub}^{sub}ext$ 
    • \cmdmthname{cmdName}[NEWNAME];
      \cmdNameName[sub][sub][ext] =  $NEWNAME_{sub}^{sub}ext$ 
481 \newcommandx{\cmdmthname}[2][2=]
482   {\usrmth{#1}{Name}{name}[#2]}

```

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\cmdmthargname ... to do!
    • \cmdmthargname{CMDNAME};
      \CMDNAMEName[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2$ 
483 \newcommandx{\cmdmthargname}[2][2=]
484   {\usrmth{#1}{Name}{argname}[#2]}

\cmdmthoargname ... to do!
    • \cmdmthoargname{CMDNAME};
      \CMDNAMEName[sub][sub][arg] =  $\mathcal{CMDNAME}_{sub}^{sub}(arg)$ 
    • \cmdmthoargname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][arg] =  $\mathcal{NEWNAME}_{sub}^{sub}(arg)$ 
485 \newcommandx{\cmdmthoargname}[2][2=]
486   {\usrmth{#1}{Name}{oargname}[#2]}

\cmdmthparname ... to do!
    • \cmdmthparname{CMDNAME};
      \CMDNAMEName[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2$ 
487 \newcommandx{\cmdmthparname}[2][2=]
488   {\usrmth{#1}{Name}{parname}[#2]}

\cmdmthoparname ... to do!
    • \cmdmthoparname{CMDNAME};
      \CMDNAMEName[sub][sub][par] =  $\mathcal{CMDNAME}_{sub}^{sub}[par]$ 
    • \cmdmthoparname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][par] =  $\mathcal{NEWNAME}_{sub}^{sub}[par]$ 
489 \newcommandx{\cmdmthoparname}[2][2=]
490   {\usrmth{#1}{Name}{oparname}[#2]}

\mthfam, ... ... to do!
    • \mthfam{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargfam{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparfam{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1[Par]Ext2$ 
491 %% Style for Families
492 \cmdmthall{fam}\newcommand{\mthstyfam}{\mathscr}

\AFam, ... ... to do!
 $\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}$ 
493 \seqoflatupp{Fam}{mthfam}

\cmdmthfam ... to do!
    • \cmdmthfam{CMDNAME};
      \CMDNAMEFam[sub][sub][ext] =  $\mathcal{CMDNAME}_{sub}^{sub}ext$ 
    • \cmdmthfam{cmdName}{NEWNAME};
      \cmdNameFam[sub][sub][ext] =  $\mathcal{NEWNAME}_{sub}^{sub}ext$ 
494 \newcommandx{\cmdmthfam}[2][2=]
495   {\usrmth{#1}{Fam}{fam}[#2]}

\cmdmthargfam ... to do!
    • \cmdmthargfam{CMDNAME};
      \CMDNAMEFam[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargfam{cmdName}{NEWNAME};
      \cmdNameFam[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2$ 

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496 \newcommandx{\cmdmthargfam}[2][2=]
497   {\usrmth{#1}{Fam}{argfam}{#2}}

\cmdmthoargfam ... to do!
  • \cmdmthoargfam{CMDNAME};
    \CMDNAMEFam[sub][sub][arg] =  $\mathcal{CMDNAME}_{sub}^{sub}(arg)$ 
  • \cmdmthoargfam{cmdFam}[NEWNAME];
    \cmdFamFam[sub][sub][arg] =  $\mathcal{NEWNAME}_{sub}^{sub}(arg)$ 
498 \newcommandx{\cmdmthoargfam}[2][2=]
499   {\usrmth{#1}{Fam}{oargfam}{#2}}

\cmdmthparfam ... to do!
  • \cmdmthparfam{CMDNAME};
    \CMDNAMEFam[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1[par]ext2$ 
  • \cmdmthparfam{cmdName}[NEWNAME];
    \cmdNameFam[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2$ 
500 \newcommandx{\cmdmthparfam}[2][2=]
501   {\usrmth{#1}{Fam}{parfam}{#2}}

\cmdmthoparfam ... to do!
  • \cmdmthoparfam{CMDNAME};
    \CMDNAMEFam[sub][sub][par] =  $\mathcal{CMDNAME}_{sub}^{sub}par$ 
  • \cmdmthoparfam{cmdFam}[NEWNAME];
    \cmdFamFam[sub][sub][par] =  $\mathcal{NEWNAME}_{sub}^{sub}par$ 
502 \newcommandx{\cmdmthoparfam}[2][2=]
503   {\usrmth{#1}{Fam}{oparfam}{#2}}

\mthcls, ... ... to do!
  • \mthcls{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
  • \mthargcls{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \mthparcls{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1[Par]Ext2$ 
504 %% Style for Classes
505 \cmdmthall{cls}\newcommand{\mthstcls}{\matheus}

\ACls, ... ... to do!
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
506 \seqoflatupp{Cls}{mthcls}

\cmdmthcls ... to do!
  • \cmdmthcls{CMDNAME};
    \CMDNAMECls[sub][sub][ext] =  $\mathcal{CMDNAME}_{sub}^{sub}ext$ 
  • \cmdmthcls{cmdName}[NEWNAME];
    \cmdNameCls[sub][sub][ext] =  $\mathcal{NEWNAME}_{sub}^{sub}ext$ 
507 \newcommandx{\cmdmthcls}[2][2=]
508   {\usrmth{#1}{Cls}{cls}{#2}}

\cmdmthargcls ... to do!
  • \cmdmthargcls{CMDNAME};
    \CMDNAMECls[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2$ 
  • \cmdmthargcls{cmdName}[NEWNAME];
    \cmdNameCls[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2$ 
509 \newcommandx{\cmdmthargcls}[2][2=]
510   {\usrmth{#1}{Cls}{argcls}{#2}}

\cmdmthoargcls ... to do!
  • \cmdmthoargcls{CMDNAME};
    \CMDNAMECls[sub][sub][arg] =  $\mathcal{CMDNAME}_{sub}^{sub}(arg)$ 

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    • \cmdmthoargcls{cmdCls}[NEWNAME];
      \cmdClsCls[sub][sub][arg] =  $\mathcal{NEWNAME}_{sub}^{sub}(arg)$ 
511 \newcommandx{\cmdmthoargcls}[2][2=]
512   {\usrmth{#1}{Cls}{oargcls}{#2}}

\cmdmthparcls ... to do!
    • \cmdmthparcls{CMDNAME};
      \CMDNAMECls[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparcls{cmdName}[NEWNAME];
      \cmdNameCls[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2$ 
513 \newcommandx{\cmdmthparcls}[2][2=]
514   {\usrmth{#1}{Cls}{parcls}{#2}}

\cmdmthoparcls ... to do!
    • \cmdmthoparcls{CMDNAME};
      \CMDNAMECls[sub][sub][par] =  $\mathcal{CMDNAME}_{sub}^{sub}par$ 
    • \cmdmthoparcls{cmdCls}[NEWNAME];
      \cmdClsCls[sub][sub][par] =  $\mathcal{NEWNAME}_{sub}^{sub}par$ 
515 \newcommandx{\cmdmthoparcls}[2][2=]
516   {\usrmth{#1}{Cls}{oparcls}{#2}}

\mthsig, ... ... to do!
    • \mthsig{Name}[sub][sup][Ext] =  $\mathcal{ame}_{sub}^{sup}Ext$ 
    • \mthargsig{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparsig{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1[Par]Ext2$ 
517 %% Style for Signatures
518 \cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}

\asig, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
519 \seqoflatlet{Sig}{mthsig}\seqofgrklow{Sig}{mthsig}

\cmdmthsig ... to do!
    • \cmdmthsig{cmdName};
      \cmdNameSig[sub][sub][ext] =  $\mathcal{cmd}\mathcal{ame}_{sub}^{sub}ext$ 
    • \cmdmthsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}ext$ 
520 \newcommandx{\cmdmthsig}[2][2=]
521   {\usrmth{#1}{Sig}{sig}{#2}}

\cmdmthargsig ... to do!
    • \cmdmthargsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{arg}[ext2] =  $\mathcal{cmd}\mathcal{ame}_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{arg}[ext2] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}ext1(arg)ext2$ 
522 \newcommandx{\cmdmthargsig}[2][2=]
523   {\usrmth{#1}{Sig}{argsig}{#2}}

\cmdmthoargsig ... to do!
    • \cmdmthoargsig{cmdName};
      \cmdNameSig[sub][sub][arg] =  $\mathcal{cmd}\mathcal{ame}_{sub}^{sub}(arg)$ 
    • \cmdmthoargsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][arg] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}(arg)$ 
524 \newcommandx{\cmdmthoargsig}[2][2=]
525   {\usrmth{#1}{Sig}{oargsig}{#2}}

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\cmdmthparsig ... to do!
    • \cmdmthparsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{par}[ext2] = cmd\Namesubsubext1[par]ext2
    • \cmdmthparsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{par}[ext2] = New\Namesubsubext1[par]ext2
526 \newcommandx{\cmdmthparsig}[2][2=]
527   {\usrmth{#1}{Sig}{parsig}{#2}}

\cmdmthoparsig ... to do!
    • \cmdmthoparsig{cmdName};
      \cmdNameSig[sub][sub][par] = cmd\Namesubsub[par]
    • \cmdmthoparsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][par] = New\Namesubsub[par]
528 \newcommandx{\cmdmthoparsig}[2][2=]
529   {\usrmth{#1}{Sig}{oparsig}{#2}}

\mthstr, ... ... to do!
    • \mthstr{Name}[sub][sup][Ext] = \NamesupsubExt
    • \mthargstr{Name}[sub][sup][Ext1]{Arg}[Ext2] = \NamesupsubExt1(Arg)Ext2
    • \mthparstr{Name}[sub][sup][Ext1]{Par}[Ext2] = \NamesupsubExt1[Par]Ext2
530 %% Style for Structures
531 \cmdmthall{str}\newcommand{\mthstyststr}{\mathfrak}

\astr, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ι, κ, λ, μ, ν, ξ, ο, π, ρ, ς, σ, ϓ, τ, υ, φ, ϕ, χ, ψ, ω
532 \seqoflatlet{Str}{mthstr}\seqofgrklow{Str}{mthstr}

\cmdmthstr ... to do!
    • \cmdmthstr{cmdName};
      \cmdNameStr[sub][sub][ext] = cmd\Namesubsubext
    • \cmdmthstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext] = New\Namesubsubext
533 \newcommandx{\cmdmthstr}[2][2=]
534   {\usrmth{#1}{Str}{str}{#2}}

\cmdmthargstr ... to do!
    • \cmdmthargstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = cmd\Namesubsubext1(arg)ext2
    • \cmdmthargstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = New\Namesubsubext1(arg)ext2
535 \newcommandx{\cmdmthargstr}[2][2=]
536   {\usrmth{#1}{Str}{argstr}{#2}}

\cmdmthoargstr ... to do!
    • \cmdmthoargstr{cmdName};
      \cmdNameStr[sub][sub][arg] = cmd\Namesubsub(arg)
    • \cmdmthoargstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][arg] = New\Namesubsub(arg)
537 \newcommandx{\cmdmthoargstr}[2][2=]
538   {\usrmth{#1}{Str}{oargstr}{#2}}

\cmdmthparstr ... to do!
    • \cmdmthparstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = cmd\Namesubsubext1[par]ext2

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    • \cmdmthparstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = \newNamesubsubext1[par]ext2
539 \newcommandx{\cmdmthparstr}[2][2=]
540   {\usrmth{#1}{Str}{parstr}[#2]}

\cmdmthoparstr ... to do!
    • \cmdmthoparstr{cmdName};
      \cmdNameStr[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][par] = \newNamesubsub[par]
541 \newcommandx{\cmdmthoparstr}[2][2=]
542   {\usrmth{#1}{Str}{oparstr}[#2]}

\mthset, ... ... to do!
    • \mthset{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargset{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparset{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
543 %% Style for Sets
544 \cmdmthall{set}\newcommand{\mthstyset}{\mathrm}

\aset, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, Y, \Phi, \Phi, X, \Psi, \Omega$ 
545 \seqoflet{Set}{mthset}

\cmdmthset ... to do!
    • \cmdmthset{cmdName};
      \cmdNameSet[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext] = NewNamesubsubext
546 \newcommandx{\cmdmthset}[2][2=]
547   {\usrmth{#1}{Set}{set}[#2]}

\cmdmthargset ... to do!
    • \cmdmthargset{cmdName};
      \cmdNameSet[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
548 \newcommandx{\cmdmthargset}[2][2=]
549   {\usrmth{#1}{Set}{argset}[#2]}

\cmdmthoargset ... to do!
    • \cmdmthoargset{cmdName};
      \cmdNameSet[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargset{cmdSet}[NewName];
      \cmdSetSet[sub][sub][arg] = NewNamesubsub(arg)
550 \newcommandx{\cmdmthoargset}[2][2=]
551   {\usrmth{#1}{Set}{oargset}[#2]}

\cmdmthparset ... to do!
    • \cmdmthparset{cmdName};
      \cmdNameSet[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
552 \newcommandx{\cmdmthparset}[2][2=]
553   {\usrmth{#1}{Set}{parset}[#2]}

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\cmdmthoparset ... to do!
    • \cmdmthoparset{cmdName};
      \cmdNameSet[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparset{cmdSet}[NewName];
      \cmdSetSet[sub][sub][par] = NewNamesubsub[par]
554 \newcommandx{\cmdmthoparset}[2][2=]
555   {\usrmth{#1}{Set}{oparset}{#2}}

\cmdmthsetext ... to do!
556 \newcommandx{\cmdmthsetext}[3][2=, 3=]
557   {\cmdmthset{#1}[#2]\caselower[q]{#1}%
558   \usrmthlet{\thestring}{Sym}{sym}
559   [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}}%
560   \usrmthlet{\thestring}{Elm}{elm}
561   [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}]}

\mthrel, ... ... to do!
    • \mthrel{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargrel{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparrel{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
562 %% Style for Relations
563 \cmdmthall{rel}\newcommand{\mthstyrel}{\mathit}

\arel, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, L, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Τ, Φ, Φ, X, Ψ, Ω
564 \seqoflet{Rel}{mthrel}

\cmdmthrel ... to do!
    • \cmdmthrel{cmdName};
      \cmdNameRel[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext] = NewNamesubsubext
565 \newcommandx{\cmdmthrel}[2][2=]
566   {\usrmth{#1}{Rel}{rel}{#2}}

\cmdmthargrel ... to do!
    • \cmdmthargrel{cmdName};
      \cmdNameRel[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
567 \newcommandx{\cmdmthargrel}[2][2=]
568   {\usrmth{#1}{Rel}{argrel}{#2}}

\cmdmthoargrel ... to do!
    • \cmdmthoargrel{cmdName};
      \cmdNameRel[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargrel{cmdRel}[NewName];
      \cmdRelRel[sub][sub][arg] = NewNamesubsub(arg)
569 \newcommandx{\cmdmthoargrel}[2][2=]
570   {\usrmth{#1}{Rel}{oargrel}{#2}}

\cmdmthparrel ... to do!
    • \cmdmthparrel{cmdName};
      \cmdNameRel[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2

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    • \cmdmthparrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
571 \newcommandx{\cmdmthparrel}[2][2=]
572   {\usrmth{#1}{Rel}{parrel}{#2}}

\cmdmthoparrel ... to do!
    • \cmdmthoparrel{cmdName};
      \cmdNameRel[sub][sub][par] =  $cmdName_{sub}^{sub}par$ 
    • \cmdmthoparrel{cmdRel}[NewName];
      \cmdRelRel[sub][sub][par] =  $NewName_{sub}^{sub}par$ 
573 \newcommandx{\cmdmthoparrel}[2][2=]
574   {\usrmth{#1}{Rel}{oparrel}{#2}}

\mthfun, ... ... to do!
    • \mthfun{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \mthargfun{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparfun{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
575 %% Style for Functions
576 \cmdmthall{fun}\newcommand{\mthstyfun}{\mathsf}

\afun, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \varnothing, I, K, \Lambda, M, N, \Xi, O, \Pi, \textit{II}, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
577 \seqoflet{Fun}{mthfun}

\cmdmthfun ... to do!
    • \cmdmthfun{cmdName};
      \cmdNameFun[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
    • \cmdmthfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext] =  $NewName_{sub}^{sub}ext$ 
578 \newcommandx{\cmdmthfun}[2][2=]
579   {\usrmth{#1}{Fun}{fun}{#2}}

\cmdmthargfun ... to do!
    • \cmdmthargfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub}ext1(arg)ext2$ 
580 \newcommandx{\cmdmthargfun}[2][2=]
581   {\usrmth{#1}{Fun}{argfun}{#2}}

\cmdmthoargfun ... to do!
    • \cmdmthoargfun{cmdName};
      \cmdNameFun[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
    • \cmdmthoargfun{cmdFun}[NewName];
      \cmdFunFun[sub][sub][arg] =  $NewName_{sub}^{sub}(arg)$ 
582 \newcommandx{\cmdmthoargfun}[2][2=]
583   {\usrmth{#1}{Fun}{oargfun}{#2}}

\cmdmthparfun ... to do!
    • \cmdmthparfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
584 \newcommandx{\cmdmthparfun}[2][2=]
585   {\usrmth{#1}{Fun}{parfun}{#2}}

```



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\cmdmthoparfun ... to do!
    • \cmdmthoparfun{cmdName};
      \cmdNameFun[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparfun{cmdFun}[NewName];
      \cmdFunFun[sub][sub][par] = NewNamesubsub[par]
586 \newcommandx{\cmdmthoparfun}[2][2=]
587   {\usrmth{#1}{Fun}{oparfun}{#2}}

\mthsym, ... ... to do!
    • \mthsym{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargsym{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparsym{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
588 %% Style for Symbols
589 \cmdmthall{sym}\newcommand{\mthstysym}{\mathtt}

\asym, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, T, \Phi, \Phi, X, \Psi, \Omega$ 
590 \seqoflet{Sym}{mthsym}

\cmdmthsym ... to do!
    • \cmdmthsym{cmdName};
      \cmdNameSym[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext] = NewNamesubsubext
591 \newcommandx{\cmdmthsym}[2][2=]
592   {\usrmth{#1}{Sym}{sym}{#2}}

\cmdmthargsym ... to do!
    • \cmdmthargsym{cmdName};
      \cmdNameSym[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
593 \newcommandx{\cmdmthargsym}[2][2=]
594   {\usrmth{#1}{Sym}{argsym}{#2}}

\cmdmthoargsym ... to do!
    • \cmdmthoargsym{cmdName};
      \cmdNameSym[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargsym{cmdSym}[NewName];
      \cmdSymSym[sub][sub][arg] = NewNamesubsub(arg)
595 \newcommandx{\cmdmthoargsym}[2][2=]
596   {\usrmth{#1}{Sym}{oargsym}{#2}}

\cmdmthparsym ... to do!
    • \cmdmthparsym{cmdName};
      \cmdNameSym[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
597 \newcommandx{\cmdmthparsym}[2][2=]
598   {\usrmth{#1}{Sym}{parsym}{#2}}

\cmdmthoparsym ... to do!
    • \cmdmthoparsym{cmdName};
      \cmdNameSym[sub][sub][par] = cmdNamesubsub[par]

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    • \cmdmthoparsym{cmdSym}[NewName];
      \cmdSymSym[sub][sub][par] = NewNamesubsub[par]
599 \newcommandx{\cmdmthoparsym}[2][2=]
600   {\usrmth{#1}{Sym}{oparsym}[#2]}

\mthelm, ... ... to do!
    • \mthelm{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargelm{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparelm{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
601 %% Style for Elements
602 \cmdmthall{elm}\newcommand{\mthstyelm}{\mathnormal}

\aelm, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
603 \seqoflet{Elm}{mthelm}

\cmdmthelm ... to do!
    • \cmdmthelm{cmdName};
      \cmdNameElm[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthelm{cmdName}[NewName];
      \cmdNameElm[sub][sub][ext] = NewNamesubsubext
604 \newcommandx{\cmdmthelm}[2][2=]
605   {\usrmth{#1}{Elm}{elm}[#2]}

\cmdmthargelm ... to do!
    • \cmdmthargelm{cmdName};
      \cmdNameElm[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargelm{cmdName}[NewName];
      \cmdNameElm[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
606 \newcommandx{\cmdmthargelm}[2][2=]
607   {\usrmth{#1}{Elm}{argelm}[#2]}

\cmdmthoargelm ... to do!
    • \cmdmthoargelm{cmdName};
      \cmdNameElm[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargelm{cmdElm}[NewName];
      \cmdElmElm[sub][sub][arg] = NewNamesubsub(arg)
608 \newcommandx{\cmdmthoargelm}[2][2=]
609   {\usrmth{#1}{Elm}{oargelm}[#2]}

\cmdmthparelm ... to do!
    • \cmdmthparelm{cmdName};
      \cmdNameElm[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparelm{cmdName}[NewName];
      \cmdNameElm[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
610 \newcommandx{\cmdmthparelm}[2][2=]
611   {\usrmth{#1}{Elm}{parelm}[#2]}

\cmdmthoparelm ... to do!
    • \cmdmthoparelm{cmdName};
      \cmdNameElm[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparelm{cmdElm}[NewName];
      \cmdElmElm[sub][sub][par] = NewNamesubsub[par]
612 \newcommandx{\cmdmthoparelm}[2][2=]
613   {\usrmth{#1}{Elm}{oparelm}[#2]}

```

614 %%*****%

\cmdmthsymelm ... to do!

- \cmdmthsymelm{cmdName};
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext}$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext}$
- \cmdmthsymelm{cmdName}[NewName];
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext}$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext}$

615 \newcommandx{\cmdmthsymelm}[2][2=]
616 {\cmdmthsym{#1}[#2]}%
617 \cmdmthelm{#1}[#2]}

\cmdmthargsymelm ... to do!

- \cmdmthargsymelm{cmdName};
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$
- \cmdmthargsymelm{cmdName}[NewName];
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$

618 \newcommandx{\cmdmthargsymelm}[2][2=]
619 {\cmdmthargsym{#1}[#2]}%
620 \cmdmthargelm{#1}[#2]}

\cmdmthoargsymelm ... to do!

- \cmdmthoargsymelm{cmdName};
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{arg}] = \text{cmdName}_{\text{sub}}^{\text{sub}}(\text{arg})$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{arg}] = \text{cmdName}_{\text{sub}}^{\text{sub}}(\text{arg})$
- \cmdmthoargsymelm{cmdName}[NewName];
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{arg}] = \text{NewName}_{\text{sub}}^{\text{sub}}(\text{arg})$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{arg}] = \text{NewName}_{\text{sub}}^{\text{sub}}(\text{arg})$

621 \newcommandx{\cmdmthoargsymelm}[2][2=]
622 {\cmdmthoargsym{#1}[#2]}%
623 \cmdmthoargelm{#1}[#2]}

\cmdmthparsymelm ... to do!

- \cmdmthparsymelm{cmdName};
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$
- \cmdmthparsymelm{cmdName}[NewName];
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$

624 \newcommandx{\cmdmthparsymelm}[2][2=]
625 {\cmdmthparsym{#1}[#2]}%
626 \cmdmthparelm{#1}[#2]}

\cmdmthoparsymelm ... to do!

- \cmdmthoparsymelm{cmdName};
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{par}] = \text{cmdName}_{\text{sub}}^{\text{sub}}[\text{par}]$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{par}] = \text{cmdName}_{\text{sub}}^{\text{sub}}[\text{par}]$
- \cmdmthoparsymelm{cmdName}[NewName];
 $\text{cmdNameSym}[\text{sub}][\text{sub}][\text{par}] = \text{NewName}_{\text{sub}}^{\text{sub}}[\text{par}]$
 $\text{cmdNameElm}[\text{sub}][\text{sub}][\text{par}] = \text{NewName}_{\text{sub}}^{\text{sub}}[\text{par}]$

627 \newcommandx{\cmdmthoparsymelm}[2][2=]
628 {\cmdmthoparsym{#1}[#2]}%
629 \cmdmthoparelm{#1}[#2]}

630 %%*****%

\mthlopr, to do!

```

    • \mthlopr{\oplus}[sub][sup][Ext] =  $\oplus_{sub}^{sup} Ext$ 
631 %% Style for \LaTeX Operators
632 \cmdmth{lopr}\newcommand{\mthstylopr}[1]{\textstyle\mathop{#1}}

\cmdmthlopr ... to do!
    • \cmdmthlopr{cmdName};
      \cmdNameOpr[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthlopr{cmdName}[\oplus];
      \cmdNameOpr[sub][sub][ext] =  $\oplus_{sub}^{sub} ext$ 
633 \newcommandx{\cmdmthlopr}[2][2=]
634   {\usrmth{#1}{Opr}{lopr}{#2}}

\mthlrel, ... ... to do!
    • \mthlrel{\preceq}[sub][sup][Ext] =  $\preceq_{sub}^{sup} Ext$ 
635 %% Style for \LaTeX Relations
636 \cmdmth{lrel}\newcommand{\mthstylrel}{\mathrel}

\cmdmthlrel ... to do!
    • \cmdmthlrel{cmdName};
      \cmdNameRel[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthlrel{cmdName}[\preceq];
      \cmdNameRel[sub][sub][ext] =  $\preceq_{sub}^{sub} ext$ 
637 \newcommandx{\cmdmthlrel}[2][2=]
638   {\usrmth{#1}{Rel}{lrel}{#2}}

639 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\mthsnt, ... ... to do!
    • \mthsnt{Name}[sub][sup][Ext] =  $Name_{sub}^{sup} Ext$ 
    • \mthargsnt{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup} Ext1(Arg)Ext2$ 
    • \mthparsnt{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup} Ext1[Par]Ext2$ 
640 %% Style for Sentences
641 \cmdmthall{snt}\newcommand{\mthstysnt}{\mathsf}

\aSnt, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \varnothing, I, K, \Lambda, M, N, \Xi, O, \Pi, \varPi, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
642 \seqoflet{Snt}{mthsnt}

\cmdmthsnt ... to do!
    • \cmdmthsnt{cmdName};
      \cmdNameSnt[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][ext] =  $NewName_{sub}^{sub} ext$ 
643 \newcommandx{\cmdmthsnt}[2][2=]
644   {\usrmth{#1}{Snt}{snt}{#2}}

\cmdmthargsnt ... to do!
    • \cmdmthargsnt{cmdName};
      \cmdNameSnt[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub} ext1(arg)ext2$ 
    • \cmdmthargsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub} ext1(arg)ext2$ 
645 \newcommandx{\cmdmthargsnt}[2][2=]
646   {\usrmth{#1}{Snt}{argsnt}{#2}}

\cmdmthoargsnt ... to do!

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```

    • \cmdmthoargsnt{cmdName};
      \cmdNameSnt[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][arg] = NewNamesubsub(arg)
647 \newcommandx{\cmdmthoargsnt}[2][2=]
648   {\usrmth{#1}{Snt}{oargsnt}{#2}}

\cmdmthparsnt ... to do!
    • \cmdmthparsnt{cmdName};
      \cmdNameSnt[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
649 \newcommandx{\cmdmthparsnt}[2][2=]
650   {\usrmth{#1}{Snt}{parsnt}{#2}}

\cmdmthoparsnt ... to do!
    • \cmdmthoparsnt{cmdName};
      \cmdNameSnt[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][par] = NewNamesubsub[par]
651 \newcommandx{\cmdmthoparsnt}[2][2=]
652   {\usrmth{#1}{Snt}{oparsnt}{#2}}

\mthfrm, ... ... to do!
    • \mthfrm{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargfrm{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparfrm{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
653 %% Style for Formulae
654 \cmdmthall{frm}\newcommand{\mthstyfrm}{\mathit}

\afrm, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, A, M, N, Ξ, O, II, II, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
655 \seqoflet{Frm}{mthfrm}

\cmdmthfrm ... to do!
    • \cmdmthfrm{cmdName};
      \cmdNameFrm[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthfrm{cmdName}[NewName];
      \cmdNameFrm[sub][sub][ext] = NewNamesubsubext
656 \newcommandx{\cmdmthfrm}[2][2=]
657   {\usrmth{#1}{Frm}{frm}{#2}}

\cmdmthargfrm ... to do!
    • \cmdmthargfrm{cmdName};
      \cmdNameFrm[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargfrm{cmdName}[NewName];
      \cmdNameFrm[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
658 \newcommandx{\cmdmthargfrm}[2][2=]
659   {\usrmth{#1}{Frm}{argfrm}{#2}}

\cmdmthoargfrm ... to do!
    • \cmdmthoargfrm{cmdName};
      \cmdNameFrm[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargfrm{cmdName}[NewName];
      \cmdNameFrm[sub][sub][arg] = NewNamesubsub(arg)

```

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660 \newcommandx{\cmdmthoargfrm}[2][2=]
661   {\usrmth{#1}{Frm}{oargfrm}[#2]}

\cmdmthparfrm ... to do!
  • \cmdmthparfrm{cmdName};
    \cmdNameFrm[sub][sub][ext1]{par}[ext2] =  $\text{cmdName}_{sub}^{sub}ext1[par]ext2$ 
  • \cmdmthparfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][ext1]{par}[ext2] =  $\text{NewName}_{sub}^{sub}ext1[par]ext2$ 
662 \newcommandx{\cmdmthparfrm}[2][2=]
663   {\usrmth{#1}{Frm}{parfrm}[#2]}

\cmdmthoparfrm ... to do!
  • \cmdmthoparfrm{cmdName};
    \cmdNameFrm[sub][sub][par] =  $\text{cmdName}_{sub}^{sub}[par]$ 
  • \cmdmthoparfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][par] =  $\text{NewName}_{sub}^{sub}[par]$ 
664 \newcommandx{\cmdmthoparfrm}[2][2=]
665   {\usrmth{#1}{Frm}{oparfrm}[#2]}

666 %%*****%

\mthmat, ... ... to do!
  • \mthmat{Name}[sub][sup][Ext] =  $\text{Name}_{sub}^{sup}Ext$ 
  • \mthargmat{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\text{Name}_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \mthparmat{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\text{Name}_{sub}^{sup}Ext1[Par]Ext2$ 
667 %% Style for Matrices
668 \cmdmthall{mat}\newcommand{\mthstymat}[1]{\boldsymbol{\mathsf{#1}}}

\Mat, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, \Xi, Z, H, \Theta, \vartheta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \varPi, P, P, \Sigma, \varSigma, T, \varUpsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
669 \seqoflet{Mat}{mthmat}

\cmdmthmat ... to do!
  • \cmdmthmat{cmdName};
    \cmdNameMat[sub][sub][ext] =  $\text{cmdName}_{sub}^{sub}ext$ 
  • \cmdmthmat{cmdName}[NewName];
    \cmdNameMat[sub][sub][ext] =  $\text{NewName}_{sub}^{sub}ext$ 
670 \newcommandx{\cmdmthmat}[2][2=]
671   {\usrmth{#1}{Mat}{mat}[#2]}

\cmdmthargmat ... to do!
  • \cmdmthargmat{cmdName};
    \cmdNameMat[sub][sub][ext1]{arg}[ext2] =  $\text{cmdName}_{sub}^{sub}ext1(arg)ext2$ 
  • \cmdmthargmat{cmdName}[NewName];
    \cmdNameMat[sub][sub][ext1]{arg}[ext2] =  $\text{NewName}_{sub}^{sub}ext1(arg)ext2$ 
672 \newcommandx{\cmdmthargmat}[2][2=]
673   {\usrmth{#1}{Mat}{argmat}[#2]}

\cmdmthoargmat ... to do!
  • \cmdmthoargmat{cmdName};
    \cmdNameMat[sub][sub][arg] =  $\text{cmdName}_{sub}^{sub}(arg)$ 
  • \cmdmthoargmat{cmdName}[NewName];
    \cmdNameMat[sub][sub][arg] =  $\text{NewName}_{sub}^{sub}(arg)$ 
674 \newcommandx{\cmdmthoargmat}[2][2=]
675   {\usrmth{#1}{Mat}{oargmat}[#2]}

```

```

\cmdmthparmat ... to do!
    • \cmdmthparmat{cmdName};
      \cmdNameMat[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparmat{cmdName}[NewName];
      \cmdNameMat[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
676 \newcommandx{\cmdmthparmat}[2][2=]
677   {\usrmth{#1}{Mat}{parmat}{#2}}

\cmdmthoparmat ... to do!
    • \cmdmthoparmat{cmdName};
      \cmdNameMat[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparmat{cmdName}[NewName];
      \cmdNameMat[sub][sub][par] = NewNamesubsub[par]
678 \newcommandx{\cmdmthoparmat}[2][2=]
679   {\usrmth{#1}{Mat}{oparmat}{#2}}

\mthvec, ... ... to do!
    • \mthvec{Name}[sub][sup][Ext] = NamesubsupExt
    • \mthargvec{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesubsupExt1(Arg)Ext2
    • \mthparvec{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesubsupExt1[Par]Ext2
680 %% Style for Vectors
681 \cmdmthall{vec}\newcommand{\mthstyvec}[1]{\boldsymbol{\mathit{#1}}}

\Vec, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϱ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
682 \seqoflet{Vec}{mthvec}

\cmdmthvec ... to do!
    • \cmdmthvec{cmdName};
      \cmdNameVec[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthvec{cmdName}[NewName];
      \cmdNameVec[sub][sub][ext] = NewNamesubsubext
683 \newcommandx{\cmdmthvec}[2][2=]
684   {\usrmth{#1}{Vec}{vec}{#2}}

\cmdmthargvec ... to do!
    • \cmdmthargvec{cmdName};
      \cmdNameVec[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargvec{cmdName}[NewName];
      \cmdNameVec[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
685 \newcommandx{\cmdmthargvec}[2][2=]
686   {\usrmth{#1}{Vec}{argvec}{#2}}

\cmdmthoargvec ... to do!
    • \cmdmthoargvec{cmdName};
      \cmdNameVec[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargvec{cmdName}[NewName];
      \cmdNameVec[sub][sub][arg] = NewNamesubsub(arg)
687 \newcommandx{\cmdmthoargvec}[2][2=]
688   {\usrmth{#1}{Vec}{oargvec}{#2}}

\cmdmthparvec ... to do!
    • \cmdmthparvec{cmdName};
      \cmdNameVec[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2

```

```

        • \cmdmthparvec{cmdName}[NewName];
        \cmdNameVec[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
689 \newcommandx{\cmdmthparvec}[2][2=]
690   {\usrmth{#1}{Vec}{parvec}[#2]}

\cmdmthoparvec ... to do!
        • \cmdmthoparvec{cmdName};
        \cmdNameVec[sub][sub][par] = cmdNamesubsub[par]
        • \cmdmthoparvec{cmdName}[NewName];
        \cmdNameVec[sub][sub][par] = NewNamesubsub[par]
691 \newcommandx{\cmdmthoparvec}[2][2=]
692   {\usrmth{#1}{Vec}{oparvec}[#2]}

693 \fi
694 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
695 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
696 %** Elementary Macros for Text %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
697 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
698 \iftext@
699 %** Latin Abbreviations %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\adhoc      • \adhoc = ad hoc
700 \cmdtxtabr{\adhoc}[ad hoc]

\afortiori  • \afortiori = a fortiori
701 \cmdtxtabr{\afortiori}[a fortiori]

\apriori    • \apriori = a priori
702 \cmdtxtabr{\apriori}[a priori]

\aposteriori • \aposteriori = a posteriori
703 \cmdtxtabr{\aposteriori}[a posteriori]

\cf         • \cf = cf.
704 \cmdtxtabr{\cf}[cf.]

\dedicto    • \dedicto = de dicto
705 \cmdtxtabr{\dedicto}[de dicto]

\defacto    • \defacto = de facto
706 \cmdtxtabr{\defacto}[de facto]

\dere       • \dere = de re
707 \cmdtxtabr{\dere}[de re]

\divideetimpera • \divideetimpera = divide et impera
708 \cmdtxtabr{\divideetimpera}[divide et impera]

\eg         • \eg = e.g.
709 \cmdtxtabr{\eg}[e.g.]

\ergo       • \ergo = ergo
710 \cmdtxtabr{\ergo}

\errata     • \errata = errata
711 \cmdtxtabr{\errata}

\erratum    • \erratum = erratum
712 \cmdtxtabr{\erratum}

```


`\etal` • `\etal` = *et al.*
713 `\cmdtxtabr{etal}[et al.]`

`\etc` • `\etc` = *etc.*
714 `\cmdtxtabr{etc}[etc.]`

`\ie` • `\ie` = *i.e.*
715 `\cmdtxtabr{ie}[i.e.]`

`\mutatismutandis` • `\mutatismutandis` = *mutatis mutandis*
716 `\cmdtxtabr{mutatismutandis}[mutatis mutandis]`

`\percontra` • `\percontra` = *per contra*
717 `\cmdtxtabr{percontra}[per contra]`

`\primafacie` • `\primafacie` = *prima facie*
718 `\cmdtxtabr{primafacie}[prima facie]`

`\viceversa` • `\viceversa` = *vice versa*
719 `\cmdtxtabr{viceversa}[vice versa]`

`\vs` • `\vs` = *vs.*
720 `\cmdtxtabr{vs}[vs.]`

`\viz` • `\viz` = *viz.*
721 `\cmdtxtabr{viz}[viz.]`

722 `%%*****%`

`\Afortiori` • `\Afortiori` = *A fortiori*
723 `\cmdtxtabr{Afortiori}[A fortiori]`

`\Apriori` • `\Apriori` = *A priori*
724 `\cmdtxtabr{Apriori}[A priori]`

`\Aposteriori` • `\Aposteriori` = *A posteriori*
725 `\cmdtxtabr{Aposteriori}[A posteriori]`

`\Dedicto` • `\Dedicto` = *De dicto*
726 `\cmdtxtabr{Dedicto}[De dicto]`

`\Defacto` • `\Defacto` = *De facto*
727 `\cmdtxtabr{Defacto}[De facto]`

`\Dere` • `\Dere` = *De re*
728 `\cmdtxtabr{Dere}[De re]`

`\Divideetimpera` • `\Divideetimpera` = *Divide et impera*
729 `\cmdtxtabr{Divideetimpera}[Divide et impera]`

`\Eg` • `\Eg` = *E.g.*
730 `\cmdtxtabr{Eg}[E.g.]`

`\Errata` • `\Errata` = *Errata*
731 `\cmdtxtabr{Errata}`

`\Erratum` • `\Erratum` = *Erratum*
732 `\cmdtxtabr{Erratum}`

\backslash Mutatismutandis • \backslash Mutatismutandis = *Mutatis mutandis*
733 \backslash cmdtxtabr{Mutatismutandis}[Mutatis mutandis]

\backslash Percontra • \backslash Percontra = *Per contra*
734 \backslash cmdtxtabr{Percontra}[Per contra]

\backslash Prima facie • \backslash Prima facie = *Prima facie*
735 \backslash cmdtxtabr{Prima facie}[Prima facie]

\backslash Viceversa • \backslash Viceversa = *Vice versa*
736 \backslash cmdtxtabr{Viceversa}[Vice versa]

737 %** Italian Abbreviations *****%
...
738 %*****%
...
739 %** French Abbreviations *****%

\backslash naif • \backslash naif = *naïf*
740 \backslash cmdtxtabr{naif}[na\{i}f]

\backslash naive • \backslash naive = *naïve*
741 \backslash cmdtxtabr{naive}[na\{i}ve]

\backslash role • \backslash role = *rôle*
742 \backslash cmdtxtabr{role}[r\^{o}le]

743 %*****%

\backslash Role • \backslash Role = *Rôle*
744 \backslash cmdtxtabr{Role}[R\^{o}le]

745 %** English Abbreviations *****%

\backslash aka • \backslash aka = *a.k.a.*
746 \backslash cmdtxtabr{aka}[a.k.a.]

\backslash contd • \backslash contd = *contd.*
747 \backslash cmdtxtabr{contd}[contd.]

\backslash iff • \backslash iff = *iff*
748 \backslash cmdtxtabr{iff}

\backslash stx • \backslash stx = *s.t.*
749 \backslash cmdtxtabr{stx}[s.t.]

\backslash resp • \backslash resp = *resp.*
750 \backslash cmdtxtabr{resp}[resp.]

\backslash wrt • \backslash wrt = *w.r.t.*
751 \backslash cmdtxtabr{wrt}[w.r.t.]

\backslash wlogx • \backslash wlogx = *w.l.o.g.*
752 \backslash cmdtxtabr{wlogx}[w.l.o.g.]

753 %*****%

\backslash Contd • \backslash Contd = *Contd.*
754 \backslash cmdtxtabr{Contd}[Contd.]

```

\Wlogx      • \Wlogx = W.l.o.g.

755 \cmdtxtabr{Wlogx}[W.l.o.g.]

756 \fi
757 %*****%
758 %*****%
759 %** Elementary Macros for Math *****%
760 %*****%
761 \ifmath@
762 %** General Notation *****%

\defeq, \seteq ...
763 \DeclareRobustCommand{\defeq}
764   {\mthlopr{\triangleq}}
765 \DeclareRobustCommand{\seteq}
766   {\mthlopr{:=}}
767 %*****%

\implies, ... ...
768 \DeclareRobustCommand{\implies}
769   {\mthlrel{\rightarrow}}
770 \DeclareRobustCommand{\notimplies}
771   {\mthlrel{\not\rightarrow}}

\implied, ... ...
772 \DeclareRobustCommand{\implied}
773   {\mthlrel{\Leftarrow}}
774 \DeclareRobustCommand{\notimplied}
775   {\mthlrel{\not\Leftarrow}}

\coimplies, ... ...
776 \DeclareRobustCommand{\coimplies}
777   {\mthlrel{\Leftrightarrow}}
778 \DeclareRobustCommand{\notcoimplies}
779   {\mthlrel{\not\!\Leftrightarrow}}
780 %*****%

\cmodels, ... ...
781 \DeclareRobustCommand{\cmodels}
782   {\mthlrel{\models}}
783 \DeclareRobustCommand{\notcmodels}
784   {\mthlrel{\not\models}}

\cequiv, ... ...
785 \DeclareRobustCommand{\cequiv}
786   {\mthlrel{\equiv}}
787 \DeclareRobustCommand{\notcequiv}
788   {\mthlrel{\not\equiv}}
789 %*****%

\dual, \adj, ... ...
790 \DeclareRobustCommand{\dual}[1]
791   {\mth{\overline{#1}}}
792 \DeclareRobustCommand{\adj}[1]
793   {\mth{\mathring{#1}}}
794 \DeclareRobustCommand{\der}[1]
795   {\mth{\widehat{#1}}}
796 \DeclareRobustCommand{\trn}[1]
797   {\mth{\widetilde{#1}}}

```

```

\vec ...
798 \DeclareRobustCommand{\vec}[1]
799   {\mth{\mathaccent"017E{#1}}}

800 %%*****

\enumeration, ... ...
801 \varcmd{enumeration}{\mth}{,}{,}{,}{}
802 \varcmd{enumerationx}{\mth}{,}{,}{,}{}

\sequence, ... ...
803 \varcmd{sequence}{\mth}{\left[{}{,}{\right]}{}
804 \varcmd{sequence1}{\mth}{\left[{}{,}{\right.}{}
805 \varcmd{sequencer}{\mth}{\left.{}{,}{\right]}{}
806 \varcmd{sequencecx}{\mth}{\left[{}{,}{\right]}{}
807 \varcmd{sequencecx1}{\mth}{\left[{}{,}{\right.}{}
808 \varcmd{sequencecxr}{\mth}{\left.{}{,}{\right]}{}

\tuple, ... ...
809 \varcmd{tuple}{\mth}{\left\langle{}{,}{\right\rangle}{}
810 \varcmd{tuple1}{\mth}{\left\langle{}{,}{\right.}{}
811 \varcmd{tupler}{\mth}{\left.{}{,}{\right\rangle}{}
812 \varcmd{tuplex}{\mth}{\left\langle{}{,}{\right\rangle}{}
813 \varcmd{tuplex1}{\mth}{\left\langle{}{,}{\right.}{}
814 \varcmd{tuplexr}{\mth}{\left.{}{,}{\right\rangle}{}

815 %%** Sets *****

\set, ... ...
816 \DeclareRobustCommand{\set}[2]
817   {\argmid{\left\lbrace}{\argsep{#1}{\,\middle\vert\,}{#2}}{\right\rbrace}}
818 \DeclareRobustCommand{\setl}[1]
819   {\argmid{\left\lbrace}{#1}{\,\right\vert\,}!}
820 \DeclareRobustCommand{\setr}[1]
821   {\argmid{\left.{}{#1}{\right\rbrace}}

\card ...
822 \DeclareRobustCommand{\card}[1]
823   {\mth{\argmid{\lvert}{#1}{\rvert}}}

\pow ...
824 \DeclareRobustCommand{\pow}[1]
825   {\mth{2^{\defval{#1}{\cdot}}}}

\denot ...
826 \DeclareRobustCommand{\denot}[1]
827   {\mth{\argmid{\llbracket}{#1}{\rrbracket}}}

828 %%** Relations *****

\emptyrel ...
829 \DeclareRobustCommand{\emptyrel}
830   {\mth{\varnothing}}

831 %%*****

\dom, \cod, ... ...
832 \DeclareRobustCommand{\dom}
833   {\mthargfun{dom}}
834 \DeclareRobustCommand{\cod}
835   {\mthargfun{cod}}
836 \DeclareRobustCommand{\rng}
837   {\mthargfun{rng}}
838 \DeclareRobustCommand{\img}
839   {\mthargfun{img}}

```

```

840 %%*****%

\prj ...
841 \DeclareRobustCommand{\prj}
842   {\mthargfun{prj}}

\rst ...
843 \DeclareRobustCommand{\rst}
844   {\mthlopr{\upharpoonright}}

\cmp ...
845 \DeclareRobustCommand{\cmp}
846   {\mthlopr{\circ}}

847 %%** Functions *****%

\emptyfun ...
848 \DeclareRobustCommand{\emptyfun}
849   {\mth{\varnothing}}

850 %%*****%

\pto, \pmapsto ...
851 \DeclareMathOperator{\pto}
852   {\ensuremath{\rightharpoonup}}
853 \DeclareMathOperator{\pmapsto}
854   {\ensuremath{\mathrel{\raisebox{0.5ex}{\footnotesize$\llcorner$}}}%
855     \kern-1.5ex\rightharpoonup}}

856 %%*****%

\fix, \ifp, ... ...
857 \DeclareRobustCommand{\fix}
858   {\mthfun{fix}}
859 \DeclareRobustCommand{\ifp}
860   {\mthfun{ifp}}
861 \DeclareRobustCommand{\lfp}
862   {\mthfun{lfp}}
863 \DeclareRobustCommand{\gfp}
864   {\mthfun{gfp}}

\Aomega, \AOmega ...
865 \DeclareRobustCommand{\Aomega}
866   {\mthargset{\omega}}
867 \DeclareRobustCommand{\AOmega}
868   {\mthargset{\Omega}}

\Atheta, \ATheta ...
869 \DeclareRobustCommand{\Atheta}
870   {\mthargset{\theta}}
871 \DeclareRobustCommand{\ATheta}
872   {\mthargset{\Theta}}

\Aomicron, ... ...
873 \DeclareRobustCommand{\Aomicron}
874   {\mthargset{\omicron}}
875 \DeclareRobustCommand{\AOmicon}
876   {\mthargset{\Omicron}}

877 %%** Numbers *****%

\SetB ...
878 \DeclareRobustCommand{\SetB}
879   {\mthset[\mathbb]{B}}

```

```

\SetF ...
880 \DeclareRobustCommand{\SetF}
881   {\mthset[mathbb]{F}}

\SetN, ... ...
882 \DeclareRobustCommand{\SetN}
883   {\mthset[mathbb]{N}}
884 \DeclareRobustCommand{\SetNI}[1] []
885   {\SetN[\infty #1]}

\SetZ, ... ...
886 \DeclareRobustCommand{\SetZ}
887   {\mthset[mathbb]{Z}}
888 \DeclareRobustCommand{\SetZI}[1] []
889   {\SetZ[\pm\infty #1]}
890 \DeclareRobustCommand{\SetZPI}[1] []
891   {\SetZ[+\infty #1]}
892 \DeclareRobustCommand{\SetZNI}[1] []
893   {\SetZ[-\infty #1]}

\SetQ, ... ...
894 \DeclareRobustCommand{\SetQ}
895   {\mthset[mathbb]{Q}}
896 \DeclareRobustCommand{\SetQI}[1] []
897   {\SetQ[\pm\infty #1]}
898 \DeclareRobustCommand{\SetQPI}[1] []
899   {\SetQ[+\infty #1]}
900 \DeclareRobustCommand{\SetQNI}[1] []
901   {\SetQ[-\infty #1]}

\SetR, ... ...
902 \DeclareRobustCommand{\SetR}
903   {\mthset[mathbb]{R}}
904 \DeclareRobustCommand{\SetRI}[1] []
905   {\SetR[\pm\infty #1]}
906 \DeclareRobustCommand{\SetRPI}[1] []
907   {\SetR[+\infty #1]}
908 \DeclareRobustCommand{\SetRNI}[1] []
909   {\SetR[-\infty #1]}

\SetC, ... ...
910 \DeclareRobustCommand{\SetC}
911   {\mthset[mathbb]{C}}
912 \DeclareRobustCommand{\SetCI}[1] []
913   {\SetC[\infty #1]}

914 %%*****

\num, ... ...
915 \DeclareRobustCommand{\num}[1]
916   {\mth{[#1]}}
917 \DeclareRobustCommand{\numcc}[2]
918   {\mth{[\argsep{#1}{,}{#2}]}}
919 \DeclareRobustCommand{\numco}[2]
920   {\mth{[\argsep{#1}{,}{#2})}}
921 \DeclareRobustCommand{\numoc}[2]
922   {\mth{(\argsep{#1}{,}{#2}]}}
923 \DeclareRobustCommand{\numoo}[2]
924   {\mth{(\argsep{#1}{,}{#2})}}

925 %%*****

```

```

\floor, \ceil ...
926 \DeclareRobustCommand{\floor}[1]
927   {\mth{\argmid{\left\lfloor}{#1}{\right\rfloor}}}
928 \DeclareRobustCommand{\ceil}[1]
929   {\mth{\argmid{\left\lceil}{#1}{\right\rceil}}}

930 %%*****

\arg ...
931 \DeclareRobustCommand{\arg}
932   {\mthfun{arg}}

\evn, \odd ...
933 \DeclareRobustCommand{\evn}
934   {\mthfun{evn}}
935 \DeclareRobustCommand{\odd}
936   {\mthfun{odd}}

\bst, ... ...
937 \DeclareRobustCommand{\bst}
938   {\mthfun{bst}}
939 \DeclareRobustCommand{\argbst}
940   {\mthfun{arg bst}}

\min, \max, ... ...
941 \DeclareRobustCommand{\min}
942   {\mthfun{min}}
943 \DeclareRobustCommand{\max}
944   {\mthfun{max}}
945 \DeclareRobustCommand{\argmin}
946   {\mthfun{arg min}}
947 \DeclareRobustCommand{\argmax}
948   {\mthfun{arg max}}

\inf, \sup ...
949 \DeclareRobustCommand{\inf}
950   {\mthfun{inf}}
951 \DeclareRobustCommand{\sup}
952   {\mthfun{sup}}

953 %%** Sequences *****

\emptyseq ...
954 \DeclareRobustCommand{\emptyseq}
955   {\mth{\varepsilon}}

\fst, \lst ...
956 \DeclareRobustCommand{\fst}
957   {\mthargfun{fst}}
958 \DeclareRobustCommand{\lst}
959   {\mthargfun{lst}}

960 \fi
961 %%*****

962 %%*****
963 %%** Macros for Computational-Complexity Classes *****
964 %%*****
965 \ifcom@

\defcomcls ... to do!

```



```

\CoUCompClassC[sub][sup][ext] = CoUNewClass-COMpleteSUPSUBEXT

\ACompClass[sub][sup][ext] = ANewClassSUPSUBEXT
\CoACompClass[sub][sup][ext] = CoANewClassSUPSUBEXT
\ACompClassE[sub][sup][ext] = ANewClass-EASYSUPSUBEXT
\CoACompClassE[sub][sup][ext] = CoANewClass-EASYSUPSUBEXT
\ACompClassH[sub][sup][ext] = ANewClass-HARDSUPSUBEXT
\CoACompClassH[sub][sup][ext] = CoANewClass-HARDSUPSUBEXT
\ACompClassC[sub][sup][ext] = ANewClass-COMpleteSUPSUBEXT
\CoACompClassC[sub][sup][ext] = CoANewClass-COMpleteSUPSUBEXT

966 \newcommandx{\defcomcls}[2][2=]
967   {\defcomclssem{#1}{\defval{#2}{#1}}}%
968   \defcomclssem{#1}{\defval{#2}{#1}}[Co]}
969 \newcommandx{\defcomclsred}[3][3=]
970   {\defcomclsred{#3#1}{#2}{#3}}%
971   \defcomclsred{#3N#1}{#2}{#3N}}%
972   \defcomclsred{#3U#1}{#2}{#3U}}%
973   \defcomclsred{#3A#1}{#2}{#3A}}%
974 \newcommandx{\defcomclsred}[3][3=]
975   {\defcomclscmd{#1}{#2}{#3}}%
976   \defcomclscmd{#1E}{#2}{#3}[-easy]}%
977   \defcomclscmd{#1H}{#2}{#3}[-hard]}%
978   \defcomclscmd{#1C}{#2}{#3}[-complete]}%
979 \newcommandx{\defcomclscmd}[4][3=, 4=]
980   {\csdef{#1}{\txtcom{#3#2#4}}}%

\defcomhrc ... to do!
    • \defcomhrc{CompHierarchy};

      CompHierarchy[sub][sup][ext] = COMHIERARCHYSUPSUBEXT

    • \defcomhrc{CompHierarchy}[NewHierarchy];

      CompHierarchy[sub][sup][ext] = NEWHIERARCHYSUPSUBEXT

981 \newcommandx{\defcomhrc}[2][2=]
982   {\csdef{#1}{\txtcom{\defval{#2}{#1}}}}

983 %%*****%

\Easy, \Hard, ...

984 \cmdtxtcom{Easy}
985 \cmdtxtcom{Hard}
986 \cmdtxtcom{Complete}

987 %%*****%

\Time, ...
    • \Time[sub][sup][ext] = TIMESUPSUBEXT
      \TimeE[sub][sup][ext] = TIME-EASYSUPSUBEXT
      \TimeH[sub][sup][ext] = TIME-HARDSUPSUBEXT
      \TimeC[sub][sup][ext] = TIME-COMpleteSUPSUBEXT
    • \NTime[sub][sup][ext] = NTIMESUPSUBEXT
      \NTimeE[sub][sup][ext] = NTIME-EASYSUPSUBEXT
      \NTimeH[sub][sup][ext] = NTIME-HARDSUPSUBEXT
      \NTimeC[sub][sup][ext] = NTIME-COMpleteSUPSUBEXT
    • \UTime[sub][sup][ext] = UTIMESUPSUBEXT
      \UTimeE[sub][sup][ext] = UTIME-EASYSUPSUBEXT
      \UTimeH[sub][sup][ext] = UTIME-HARDSUPSUBEXT
      \UTimeC[sub][sup][ext] = UTIME-COMpleteSUPSUBEXT
    • \ATime[sub][sup][ext] = ATIMESUPSUBEXT
      \ATimeE[sub][sup][ext] = ATIME-EASYSUPSUBEXT
      \ATimeH[sub][sup][ext] = ATIME-HARDSUPSUBEXT
      \ATimeC[sub][sup][ext] = ATIME-COMpleteSUPSUBEXT

988 \defcomcls{Time}

```

```

\Space, ...
• \Space[sub][sup][ext] = SPACESUBEXT
  \SpaceE[sub][sup][ext] = SPACE-EASYSUBEXT
  \SpaceH[sub][sup][ext] = SPACE-HARDSUBEXT
  \SpaceC[sub][sup][ext] = SPACE-COMPLETESUBEXT

• \NSpace[sub][sup][ext] = NSPACESUBEXT
  \NSpaceE[sub][sup][ext] = NSPACE-EASYSUBEXT
  \NSpaceH[sub][sup][ext] = NSPACE-HARDSUBEXT
  \NSpaceC[sub][sup][ext] = NSPACE-COMPLETESUBEXT

• \USpace[sub][sup][ext] = USPACESUBEXT
  \USpaceE[sub][sup][ext] = USPACE-EASYSUBEXT
  \USpaceH[sub][sup][ext] = USPACE-HARDSUBEXT
  \USpaceC[sub][sup][ext] = USPACE-COMPLETESUBEXT

• \ASpace[sub][sup][ext] = ASPACESUBEXT
  \ASpaceE[sub][sup][ext] = ASPACE-EASYSUBEXT
  \ASpaceH[sub][sup][ext] = ASPACE-HARDSUBEXT
  \ASpaceC[sub][sup][ext] = ASPACE-COMPLETESUBEXT

989 \defcomcls{Space}

\LogTime, ...
• \LogTime[sub][sup][ext] = LOGTIMESUBEXT
  \LogTimeE[sub][sup][ext] = LOGTIME-EASYSUBEXT
  \LogTimeH[sub][sup][ext] = LOGTIME-HARDSUBEXT
  \LogTimeC[sub][sup][ext] = LOGTIME-COMPLETESUBEXT

• \NLogTime[sub][sup][ext] = NLOGTIMESUBEXT
  \NLogTimeE[sub][sup][ext] = NLOGTIME-EASYSUBEXT
  \NLogTimeH[sub][sup][ext] = NLOGTIME-HARDSUBEXT
  \NLogTimeC[sub][sup][ext] = NLOGTIME-COMPLETESUBEXT

• \ULogTime[sub][sup][ext] = ULOGTIMESUBEXT
  \ULogTimeE[sub][sup][ext] = ULOGTIME-EASYSUBEXT
  \ULogTimeH[sub][sup][ext] = ULOGTIME-HARDSUBEXT
  \ULogTimeC[sub][sup][ext] = ULOGTIME-COMPLETESUBEXT

• \ALogTime[sub][sup][ext] = ALOGTIMESUBEXT
  \ALogTimeE[sub][sup][ext] = ALOGTIME-EASYSUBEXT
  \ALogTimeH[sub][sup][ext] = ALOGTIME-HARDSUBEXT
  \ALogTimeC[sub][sup][ext] = ALOGTIME-COMPLETESUBEXT

990 \defcomcls{LogTime}

\LogSpace, ...
• \LogSpace[sub][sup][ext] = LOGSPACESUBEXT
  \LogSpaceE[sub][sup][ext] = LOGSPACE-EASYSUBEXT
  \LogSpaceH[sub][sup][ext] = LOGSPACE-HARDSUBEXT
  \LogSpaceC[sub][sup][ext] = LOGSPACE-COMPLETESUBEXT

• \NLogSpace[sub][sup][ext] = NLOGSPACESUBEXT
  \NLogSpaceE[sub][sup][ext] = NLOGSPACE-EASYSUBEXT
  \NLogSpaceH[sub][sup][ext] = NLOGSPACE-HARDSUBEXT
  \NLogSpaceC[sub][sup][ext] = NLOGSPACE-COMPLETESUBEXT

• \ULogSpace[sub][sup][ext] = ULOGSPACESUBEXT
  \ULogSpaceE[sub][sup][ext] = ULOGSPACE-EASYSUBEXT
  \ULogSpaceH[sub][sup][ext] = ULOGSPACE-HARDSUBEXT
  \ULogSpaceC[sub][sup][ext] = ULOGSPACE-COMPLETESUBEXT

• \ALogSpace[sub][sup][ext] = ALOGSPACESUBEXT
  \ALogSpaceE[sub][sup][ext] = ALOGSPACE-EASYSUBEXT
  \ALogSpaceH[sub][sup][ext] = ALOGSPACE-HARDSUBEXT
  \ALogSpaceC[sub][sup][ext] = ALOGSPACE-COMPLETESUBEXT

991 \defcomcls{LogSpace}

\PTime, ...
• \PTime[sub][sup][ext] = PTIMESUBEXT
  \PTimeE[sub][sup][ext] = PTIME-EASYSUBEXT
  \PTimeH[sub][sup][ext] = PTIME-HARDSUBEXT
  \PTimeC[sub][sup][ext] = PTIME-COMPLETESUBEXT

```



```

\SATG, ... ...
1007 %% Satisfiability Games
1008 \cmdtxtoparname{SATG}[Sat]
1009
1010 %% Validity Games
1011 \cmdtxtoparname{VALG}[Val]
1012
1013 %% Evaluation Games
1014 \cmdtxtoparname{EVLG}[Ev1]
1015
1016 %% Synthesis Games
1017 \cmdtxtoparname{SYNG}[Syn]
1018
1019 %% Model-Checking Games
1020 \cmdtxtoparname{MCG}[MC]
1021
1022 %% Ehrenfeucht-Fraisse Games
1023 \cmdtxtoparname{EFG}[EF]

1024 %** Syntax *****%%

\PlrSym, \OppSym ...
1025 \newcommand{\plrsym}{E}
1026 \cmdmthsym{Plr}[\plrsym]
1027 \newcommand{\oppsym}{A}
1028 \cmdmthsym{Opp}[\oppsym]

\ArenaName, ... ...
1029 \newcommand{\arenaname}{A}
1030 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

\PosSet, ... ...
1031 \newcommand{\possym}{v}
1032 \newcommand{\posset}{Ps}
1033 \cmdmthsetext{Pos}[\posset][\possym]
1034 \cmdmthsymelm{ipos}[\possym_{I}]
1035 \cmdmthsymelm{fpos}[\possym_{F}]
1036 \cmdmthset{PPos}[\posset_{\PlrSym}]
1037 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1038 \cmdmthset{OPos}[\posset_{\OppSym}]
1039 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\MovRel ...
1040 \newcommand{\movrel}{Mv}
1041 \cmdmthrel{Mov}[\movrel]

\GameName, ... ...
1042 \newcommand{\gamename}{\Game}
1043 \usrmthlatupp{Game}{Name}{name}[\gamename]

\WinSet ...
1044 \newcommand{\winset}{Wn}
1045 \cmdmthset{Win}[\winset]

\ObsSet, \obsFun ...
1046 \newcommand{\obsset}{Ob}
1047 \cmdmthset{Obs}[\obsset]
1048 \cmdmthfun{obs}

1049 %** Semantics *****%%

```

```

\PthSet, \pthFun ...
1050 \newcommand{\pthsym}{\pi}
1051 \newcommand{\pthset}{Pth}
1052 \cmdmthsetext{Pth}[\pthset][\pthsym]
1053 \cmdmthfun{pth}

\HstSet, ... ...
1054 \newcommand{\hstsym}{\rho}
1055 \newcommand{\hstset}{Hst}
1056 \cmdmthsetext{Hst}[\hstset][\hstsym]
1057 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1058 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1059 \cmdmthset{OHst}[\hstset_{\OppSym}]
1060 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1061 \cmdmthfun{hst}

\PlaySet, \playFun ...
1062 \newcommand{\playsym}{\pi}
1063 \newcommand{\playset}{Play}
1064 \cmdmthsetext{Play}[\playset][\playsym]
1065 \cmdmthfun{play}

\StrSet, ... ...
1066 \newcommand{\strsym}{\sigma}
1067 \newcommand{\strset}{Str}
1068 \cmdmthsetext{Str}[\strset][\strsym]
1069 \cmdmthset{PStr}[\strset_{\PlrSym}]
1070 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1071 \cmdmthset{OStr}[\strset_{\OppSym}]
1072 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet, \prfFun ...
1073 \newcommand{\prfsym}{\xi}
1074 \newcommand{\prfset}{Prf}
1075 \cmdmthsetext{Prf}[\prfset][\prfsym]

\preFun, \sucFun ...
1076 \newcommand{\prefun}{pre}
1077 \cmdmthoargfun{pre}[\prefun]
1078 \newcommand{\sucfun}{suc}
1079 \cmdmthoargfun{suc}[\sucfun]

\entFun, \escFun ...
1080 \newcommand{\entfun}{ent}
1081 \cmdmthoargfun{ent}[\entfun]
1082 \newcommand{\escfun}{esc}
1083 \cmdmthoargfun{esc}[\escfun]

\intFun, \outFun ...
1084 \newcommand{\intfun}{int}
1085 \cmdmthoargfun{int}[\intfun]
1086 \newcommand{\outfun}{out}
1087 \cmdmthoargfun{out}[\outfun]

\atrFun, \rchFun ...
1088 \newcommand{\atrfun}{atr}
1089 \cmdmthoargfun{atr}[\atrfun]
1090 \newcommand{\rchfun}{rch}
1091 \cmdmthoargfun{rch}[\rchfun]

\liftFun ...
1092 \newcommand{\liftfun}{lift}
1093 \cmdmthoargfun{lift}[\liftfun]

```

```

\solFun ...
1094 \newcommand{\solfun}{sol}
1095 \cmdmthoargfun{sol}[\solfun]

1096 %** Qualitative Games on Graph *****%

\BG, ... ...
1097 %% Buchi Games
1098 \cmdtxttoparname{BG}
1099
1100 %% Co-Buchi Games
1101 \cmdtxttoparname{CG}
1102
1103 %% Parity Games
1104 \cmdtxttoparname{PG}
1105
1106 %% Rabin Games
1107 \cmdtxttoparname{RG}
1108
1109 %% Streett Games
1110 \cmdtxttoparname{SG}
1111
1112 %% Muller Games
1113 \cmdtxttoparname{MG}

1114 %** Syntax *****%

\EvnSym, \OddSym ...
1115 \newcommand{\evnsym}{0}
1116 \cmdmthsym{Evnsym}[\evnsym]
1117 \newcommand{\oddsym}{1}
1118 \cmdmthsym{Oddsym}[\oddsym]

\PrtSet, \prtFun ...
1119 \newcommand{\prtsym}{p}
1120 \newcommand{\prtset}{Pr}
1121 \cmdmthsetext{Prt}[\prtset][\prtsym]
1122 \cmdmthfun{prt}[pr]

1123 %** Semantics *****%

...

1124 %** Quantitative Games on Graph *****%

\EG, ... ...
1125 %% Energy Games
1126 \cmdtxttoparname{EG}
1127
1128 %% Mean-Payoff Games
1129 \cmdtxttoparname{MPG}
1130
1131 %% Discounted-Payoff Games
1132 \cmdtxttoparname{DPG}

1133 %** Syntax *****%

\MaxSym, \MinSym ...
1134 \newcommand{\maxsym}{\oplus}
1135 \cmdmthsym{Max}[\maxsym]
1136 \newcommand{\minsym}{\boxminus}
1137 \cmdmthsym{Min}[\minsym]

```

```

\WghSet, \wghFun ...
1138 \newcommand{\wghsym}{w}
1139 \newcommand{\wghset}{Wg}
1140 \cmdmthsetext{Wgh}[\wghset][\wghsym]
1141 \cmdmthfun{wgh}[wg]

1142 %** Semantics *****%%
...
1143 \fi
1144 %*****%%
1145 %*****%%
1146 %** Macros for Logics *****%%
1147 %*****%%
1148 \iflog@
1149 %** Propositional Logics *****%%

\BF, \QBF, ... ...
1150 % Boolean Formulae
1151 \cmdtxttoparname{BF}
1152
1153 % Quantified Boolean Formulae
1154 \DeclareRobustCommand{\QBF}
1155   {\{\txtname{Q}\}\BF}
1156 \DeclareRobustCommand{\EBF}
1157   {\ensuremath{\exists}\BF}
1158 \DeclareRobustCommand{\UBF}
1159   {\ensuremath{\forall}\BF}

1160 %** Syntax *****%%

\LogSig, ... ...
1161 \newcommand{\logsig}{L}
1162 \usrmthlatupp{Log}{Sig}{sig}[\logsig]

\Tt, \Ff ...
1163 \newcommand{\ttsym}{\top}
1164 \usrmth{Tt}{\}{sym}[\ttsym]
1165 \newcommand{\ffsym}{\bot}
1166 \usrmth{Ff}{\}{sym}[\ffsym]

\LCon, \LDis ...
1167 \newcommand{\lconsym}{\land}
1168 \usrmth{LCon}{\}{lopr}[\lconsym]
1169 \newcommand{\ldissym}{\lor}
1170 \usrmth{LDis}{\}{lopr}[\ldissym]

\LExs, \LAll ...
1171 \newcommand{\lexssym}{\exists}
1172 \usrmth{LExs}{\}{lopr}[\lexssym]
1173 \newcommand{\lallsym}{\forall}
1174 \usrmth{LAll}{\}{lopr}[\lallsym]

\APSet, ... ...
1175 \newcommand{\apsym}{p}
1176 \newcommand{\apset}{AP}
1177 \cmdmthsetext{AP}[\apset][\apsym]
1178 \cmdmthfun{ap}\usrmth{ap}{\}{argfun}

\sub ...
1179 \usrmth{sub}{\}{argfun}

```



```

\Cnt, \Qnt, \Sym ...
1180 \usrmth{Cnt}{-}{sym}[C]
1181 \usrmth{Qnt}{-}{sym}[Q]
1182 \usrmth{Sym}{-}{sym}[\odot]

\QAE, \QEA ...
1183 \usrmth{QAE}{-}{sym}[\forall\exists]
1184 \usrmth{QEA}{-}{sym}[\exists\forall]

\QntSet, ... ...
1185 \newcommand{\qntsym}{\wp}
1186 \newcommand{\qntset}{Qn}
1187 \cmdmthsetext{Qnt}[\qntset][\qntsym]

\free ...
1188 \usrmth{free}{-}{argfun}

\dep, \alt ...
1189 \usrmth{dep}{-}{argfun}
1190 \usrmth{alt}{-}{argfun}

\cnf, \dnf, ... ...
1191 \cmdtxtabr{cnf}
1192 \cmdtxtabr{dnf}
1193 \cmdtxtabr{pnf}
1194 \cmdtxtabr{nnf}

1195 %** Semantics *****%

\LogStr, ... ...
1196 \newcommand{\logstr}{L}
1197 \usrmthlatupp{Log}{Str}{str}[\logstr]

\ValSet, ... ...
1198 \newcommand{\valsym}{\xi}
1199 \newcommand{\valset}{Val}
1200 \cmdmthsetext{Val}[\valset][\valsym]

\AsgSet, ... ...
1201 \newcommand{\asgsym}{\chi}
1202 \newcommand{\asgset}{Asg}
1203 \cmdmthsetext{Asg}[\asgset][\asgsym]

1204 %** First-Order Logics I *****%

\FOL, ... ...
1205 % First-Order Logic
1206 \cmdtxtoparname{FOL}[Fol]
1207
1208 % Monadic First-Order Logic
1209 \DeclareRobustCommand{\MFOL}
1210 {\{\txname{M}\}\FOL}

1211 %** Syntax *****%

\VarSig, ... ...
1212 \newcommand{\varsig}{V}
1213 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
1214 \newcommand{\varsym}{x}
1215 \newcommand{\varset}{Vr}
1216 \cmdmthsetext{Var}[\varset][\varsym]
1217 \usrmth{var}{-}{argfun}[vr]
1218 \cmdmthfun{dim}[dm]\usrmth{dim}{-}{argfun}[dm]

```

```

\ConSig, ... ...
1219 \newcommand{\consig}{C}
1220 \usrmthlatupp{Con}{Sig}{sig}[\consig]
1221 \newcommand{\consym}{c}
1222 \newcommand{\conset}{Cn}
1223 \cmdmthsetext{Con}[\conset][\consym]
1224 \usrmth{con}{-}{argfun}[cn]

\FunSig, ... ...
1225 \newcommand{\funsig}{F}
1226 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
1227 \newcommand{\funsym}{f}
1228 \newcommand{\funset}{Fn}
1229 \cmdmthsetext{Fun}[\funset][\funsym]
1230 \usrmth{fun}{-}{argfun}[fn]
1231 \cmdmthfun{art}[ar]\usrmth{art}{-}{argfun}[ar]

\TerSig, ... ...
1232 \newcommand{\tersig}{T}
1233 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
1234 \newcommand{\tersym}{t}
1235 \newcommand{\terset}{Tr}
1236 \cmdmthsetext{Ter}[\terset][\tersym]
1237 \usrmth{ter}{-}{argfun}

\RelSig, ... ...
1238 \newcommand{\relsig}{R}
1239 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
1240 \newcommand{\relsym}{r}
1241 \newcommand{\relset}{Rl}
1242 \cmdmthsetext{Rel}[\relset][\relsym]
1243 \usrmth{rel}{-}{argfun}[rl]

\skm ...
1244 \usrmth{skm}{-}{argfun}

1245 %** Semantics *****%%

\ConStr, ... ...
1246 \newcommand{\constr}{C}
1247 \usrmthlatupp{Con}{Str}{str}[\constr]

\FunStr, ... ...
1248 \newcommand{\funstr}{F}
1249 \usrmthlatupp{Fun}{Str}{str}[\funstr]

\TerStr, ... ...
1250 \newcommand{\terstr}{T}
1251 \usrmthlatupp{Ter}{Str}{str}[\terstr]

\RelStr, ... ...
1252 \newcommand{\relstr}{R}
1253 \usrmthlatupp{Rel}{Str}{str}[\relstr]

1254 %** First-Order Logics II *****%%

\DF, \IF, ... ...
1255 % Dependence-Friendly Logic
1256 \cmdtxtoparname{DF}
1257
1258 % Independence-Friendly Logic
1259 \cmdtxtoparname{IF}
1260

```

```

1261 % Dependence/Independence-Friendly Logic
1262 \cmdtxttoparname{DIF}
1263
1264 % Team Logic
1265 \cmdtxttoparname{TL}
1266
1267 % Alternating Dependence-Friendly Logic
1268 \cmdtxttoparname{ADF}
1269
1270 % Alternating Independence-Friendly Logic
1271 \cmdtxttoparname{AIF}
1272
1273 % Alternating Dependence/Independence-Friendly Logic
1274 \cmdtxttoparname{ADIF}

```

...

```

1275 %** Syntax *****%

```

\LEExs, \LAA11 ...

```

1276 \newcommand{\leexssym}{\Sigma}
1277 \usrmth{LEExs}{\lopr}{\leexssym}
1278 \newcommand{\laallsym}{\Pi}
1279 \usrmth{LAA11}{\lopr}{\laallsym}

```

```

1280 %** Semantics *****%

```

...

```

1281 %** Second-Order Logics I *****%

```

\SOL,

```

1282 % Second-Order Logic
1283 \cmdtxttoparname{SOL}[Sol]
1284
1285 % Monadic Second-Order Logic
1286 \DeclareRobustCommand{\MSOL}
1287   {\{\txtname{M}\}\SOL}

```

```

1288 %** Syntax *****%

```

\FVarSet,

```

1289 \newcommand{\fvarsym}{x}
1290 \newcommand{\fvarset}{FVr}
1291 \cmdmthsetext{FVar}[\fvarset][\fvarsym]

```

\SVarSet,

```

1292 \newcommand{\svarsym}{X}
1293 \newcommand{\svarset}{SVr}
1294 \cmdmthsetext{SVar}[\svarset][\svarsym]

```

```

1295 %** Semantics *****%

```

...

```

1296 %** Second-Order Logics II *****%

```

\TL, \PL,

```

1297 % Tree Logic
1298 \cmdtxttoparname{TL}
1299
1300 % Monadic Tree Logic
1301 \DeclareRobustCommand{\MTL}
1302   {\{\txtname{M}\}\TL}
1303
1304 % Path Logic

```

```

1305 \cmdtxttoparname{PL}
1306
1307 % Monadic Path Logic
1308 \DeclareRobustCommand{\MPL}
1309   {\txtname{M}}\PL}

1310 %** Syntax *****%%
...
1311 %** Semantics *****%%
...
1312 %** Modal Logics I *****%%

```

\ML, \QML, ...

```

1313 % Modal Logic
1314 \cmdtxttoparname{ML}
1315
1316 % Quantified Modal Logic
1317 \DeclareRobustCommand{\QML}
1318   {\txtname{Q}}\ML}
1319 \DeclareRobustCommand{\EML}
1320   {\ensuremath{\exists}\ML}
1321 \DeclareRobustCommand{\UML}
1322   {\ensuremath{\forall}\ML}

1323 %** Syntax *****%%

```

\Opr ...

```

1324 \usrmth{Opr}{\sym}[Op]

```

\DMod, \BMod ...

```

1325 \usrmth{DMod}{\sym}[\Diamond]
1326 \usrmth{BMod}{\sym}[\Box]

```

\Exs, \All ...

```

1327 \DeclareRobustCommand{\Exs}[1]
1328   {\mth{\defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
1329 \DeclareRobustCommand{\All}[1]
1330   {\mth{\defval{\argmid{\left[]{\#1}{\right]}}{\BMod}}}

1331 %** Semantics *****%%

```

\KrpStr, ...

```

1332 \newcommand{\krpstr}{K}
1333 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

```

\WrlSet, ...

```

1334 \newcommand{\wrlsym}{w}
1335 \newcommand{\wrlset}{W}
1336 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
1337 \cmdmthsymelm{iwrl}[\wrlsym_{I}]

```

\AccRel, \TrnRel ...

```

1338 \newcommand{\accsym}{R}
1339 \cmdmthrel{Acc}[\accsym]
1340 \cmdmthrel{Trn}[\accsym]

```

\labFun ...

```

1341 \newcommand{\labsym}{\lambda}
1342 \cmdmthfun{lab}[\labsym]

```

```

\PTHSet, \pthFun ...
1343 \providecommand{\pthsym}{\pi}
1344 \providecommand{\pthset}{Pth}
1345 \cmdmthsetext{Pth}[\pthset][\pthsym]
1346 \cmdmthfun{pth}

1347 %** Modal Logics II *****%%

\MC, \QMC, ... ...
1348 % Mu Calculus
1349 \cmdtxtoparname{MC}[\ensuremath{\mu}-Calculus]
1350
1351 % Quantified Modal Logic
1352 \DeclareRobustCommand{\QMC}
1353   {\{\textrm{Q}\}\MC}
1354 \DeclareRobustCommand{\EMC}
1355   {\ensuremath{\exists}\MC}
1356 \DeclareRobustCommand{\UMC}
1357   {\ensuremath{\forall}\MC}

1358 %** Syntax *****%%

...

1359 %** Semantics *****%%

...

1360 %** Temporal Logics I *****%%

\PTL, \LTL, ... ...
1361 % Propositional Temporal Logic
1362 \cmdtxtoparname{PTL}
1363
1364 % Quantified Propositional Temporal Logic
1365 \DeclareRobustCommand{\QPTL}
1366   {\{\textrm{Q}\}\PTL}
1367 \DeclareRobustCommand{\EPTL}
1368   {\ensuremath{\exists}\PTL}
1369 \DeclareRobustCommand{\UPTL}
1370   {\ensuremath{\forall}\PTL}
1371
1372 % Linear Temporal Logic
1373 \cmdtxtoparname{LTL}
1374
1375 % Quantified Linear Temporal Logic
1376 \DeclareRobustCommand{\QLTL}
1377   {\{\textrm{Q}\}\LTL}
1378 \DeclareRobustCommand{\ELTL}
1379   {\ensuremath{\exists}\LTL}
1380 \DeclareRobustCommand{\ULTL}
1381   {\ensuremath{\forall}\LTL}

1382 %** Syntax *****%%

\X, ... ...
1383 \usrmth{X}{-}{sym}[X\,,]
1384 \usrmth{F}{-}{sym}[F\,,]
1385 \usrmth{G}{-}{sym}[G\,,]
1386 \usrmth{U}{-}{sym}[\,,U\,,]
1387 \usrmth{R}{-}{sym}[\,,R\,,]

\Y, ... ...
1388 \usrmth{Y}{-}{sym}[G\,,]
1389 \usrmth{P}{-}{sym}[P\,,]\let\SavePilcrow\P
1390 \usrmth{H}{-}{sym}[H\,,]\let\SaveDoubleAcute\H
1391 \usrmth{S}{-}{sym}[\,,S\,,]\let\SaveSectionSymbol\S
1392 \usrmth{B}{-}{sym}[\,,B\,,]

```

1393 %%** Semantics *****%

...

1394 %%** Temporal Logics II *****%

\PDL, \CTL, ...

1395

1396 % Propositional Dynamic Logic

1397 \cmdtxttoparname{PDL}

1398

1399 % Computation Tree Logic

1400 \cmdtxttoparname{CTL}

1401

1402 % Quantified Computation Tree Logic

1403 \DeclareRobustCommand{\QCTL}

1404 {\txtrname{Q}}\CTL

1405 \DeclareRobustCommand{\ECTL}

1406 {\ensuremath{\exists}}\CTL

1407 \DeclareRobustCommand{\UCTL}

1408 {\ensuremath{\forall}}\CTL

1409

1410 % Improved Computation Tree Logic

1411 \cmdtxttoparname{CTLP}[CTL\$^{+}\$]

1412

1413 % Quantified Improved Computation Tree Logic

1414 \DeclareRobustCommand{\QCTLP}

1415 {\txtrname{Q}}\CTLP

1416 \DeclareRobustCommand{\ECTLP}

1417 {\ensuremath{\exists}}\CTLP

1418 \DeclareRobustCommand{\UCTLP}

1419 {\ensuremath{\forall}}\CTLP

1420

1421 % Full Computation Tree Logic

1422 \cmdtxttoparname{CTLS}[CTL*]

1423

1424 % Quantified Full Computation Tree Logic

1425 \DeclareRobustCommand{\QCTLS}

1426 {\txtrname{Q}}\CTLS

1427 \DeclareRobustCommand{\ECTLS}

1428 {\ensuremath{\exists}}\CTLS

1429 \DeclareRobustCommand{\UCTLS}

1430 {\ensuremath{\forall}}\CTLS

1431 %%** Syntax *****%

\E, \A ...

1432 \usrmth{E}{\sym}

1433 \usrmth{A}{\sym}

1434 %%** Semantics *****%

...

1435 %%** Strategic Logics I *****%

\ATL, ...

1436 % Alternating Temporal Logic

1437 \cmdtxttoparname{ATL}

1438

1439 % Quantified Alternating Temporal Logic

1440 \DeclareRobustCommand{\QATL}

1441 {\txtrname{Q}}\ATL

1442 \DeclareRobustCommand{\EATL}

1443 {\ensuremath{\exists}}\ATL

1444 \DeclareRobustCommand{\UATL}

```

1445 {\ensuremath{\forall}\text{forall}}\ATL}
1446
1447 % Improved Alternating Temporal Logic
1448 \cmdtxttoparname{ATLP}[ATL$^{+}$]
1449
1450 % Quantified Improved Alternating Temporal Logic
1451 \DeclareRobustCommand{\QATLP}
1452 {\{\textname{Q}\}\ATLP}
1453 \DeclareRobustCommand{\EATLP}
1454 {\{\ensuremath{\exists}\text{exists}}\ATLP}
1455 \DeclareRobustCommand{\UATLP}
1456 {\{\ensuremath{\forall}\text{forall}}\ATLP}
1457
1458 % Full Alternating Temporal Logic
1459 \cmdtxttoparname{ATLS}[ATL*]
1460
1461 % Quantified Full Alternating Temporal Logic
1462 \DeclareRobustCommand{\QATLS}
1463 {\{\textname{Q}\}\ATLS}
1464 \DeclareRobustCommand{\EATLS}
1465 {\{\ensuremath{\exists}\text{exists}}\ATLS}
1466 \DeclareRobustCommand{\UATLS}
1467 {\{\ensuremath{\forall}\text{forall}}\ATLS}
1468 %** Syntax *****%

\EExs, \AA11 ...
1469 \DeclareRobustCommand{\EExs}[1]
1470 {\math{\argmid{\langle!\rangle}{\defval{#1}{\emptyset}}{\rangle!\rangle}}}
1471 \DeclareRobustCommand{\AA11}[1]
1472 {\math{\argmid{\left[\left[{}{\defval{#1}{\emptyset}}{\right]\right]}}}

1473 %** Semantics *****%

\CGS ...
1474 \cmdtxtname{CGS}

\CGSStr, ... ...
1475 \newcommand{\cgsstr}{G}
1476 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]

\AgnSet, ... ...
1477 \newcommand{\agnsym}{a}
1478 \newcommand{\agnset}{Ag}
1479 \cmdmthsetext{Agn}[\agnset][\agnsym]

\PosSet, ... ...
1480 \providecommand{\possym}{v}
1481 \providecommand{\posset}{Ps}
1482 \cmdmthsetext{Pos}[\posset][\possym]
1483 \cmdmthsymelm{ipos}[\possym_{I}]
1484 \cmdmthsymelm{fpos}[\possym_{F}]
1485 \cmdmthset{PPos}[\posset_{PlrSym}]
1486 \cmdmthsymelm{ppos}[\possym_{PlrSym}]
1487 \cmdmthset{OPos}[\posset_{OppSym}]
1488 \cmdmthsymelm{opos}[\possym_{OppSym}]

\SttSet, ... ...
1489 \newcommand{\sttsym}{s}
1490 \newcommand{\sttset}{St}
1491 \cmdmthsetext{Stt}[\sttset][\sttsym]
1492 \cmdmthset{IStt}[\sttset_{I}]
1493 \cmdmthsymelm{istt}[\sttsym_{I}]
1494 \cmdmthset{FStt}[\sttset_{F}]
1495 \cmdmthsymelm{fstt}[\sttsym_{F}]

```

```

\ActSet, ... ...
1496 \newcommand{\actsym}{c}
1497 \newcommand{\actset}{Ac}
1498 \cmdmthsettext{Act}[\actset][\actsym]

\DecSet, ... ...
1499 \newcommand{\decsym}{d}
1500 \newcommand{\decset}{Dc}
1501 \cmdmthsettext{Dec}[\decset][\decsym]

\movFun ...
1502 \newcommand{\movsym}{\tau}
1503 \cmdmthfun{mov}[\movsym]

\HstSet, ... ...
1504 \providecommand{\hstsym}{\rho}
1505 \providecommand{\hstset}{Hst}
1506 \cmdmthsettext{Hst}[\hstset][\hstsym]
1507 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1508 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1509 \cmdmthset{OHst}[\hstset_{\OppSym}]
1510 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1511 \cmdmthfun{hst}

\PlaySet, \playFun ...
1512 \providecommand{\playsym}{\pi}
1513 \providecommand{\playset}{Play}
1514 \cmdmthsettext{Play}[\playset][\playsym]
1515 \cmdmthfun{play}

\StrSet, ... ...
1516 \providecommand{\strsym}{\sigma}
1517 \providecommand{\strset}{Str}
1518 \cmdmthsettext{Str}[\strset][\strsym]
1519 \cmdmthset{PStr}[\strset_{\PlrSym}]
1520 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1521 \cmdmthset{OStr}[\strset_{\OppSym}]
1522 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet, \prfFun ...
1523 \providecommand{\prfsym}{\xi}
1524 \providecommand{\prfset}{Prf}
1525 \cmdmthsettext{Prf}[\prfset][\prfsym]

1526 %** Strategic Logics II *****%

\SL, ... ...
1527 % Strategy Logic
1528 \cmdtxtoparname{SL}
1529
1530 \DeclareRobustCommand{\ESL}
1531   {\ensuremath{\exists}\SL}
1532 \DeclareRobustCommand{\USL}
1533   {\ensuremath{\forall}\SL}
1534
1535 \DeclareRobustCommand{\FSL}
1536   {\{\textname{F}\}\SL}
1537
1538 \DeclareRobustCommand{\EFSL}
1539   {\ensuremath{\exists}\FSL}
1540 \DeclareRobustCommand{\UFSL}
1541   {\ensuremath{\forall}\FSL}
1542

```



```

1543 % One-Goal Strategy Logic
1544 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
1545   {\SL[#1][#2][lg\arglef{,}{#3}]}
1546
1547 \DeclareRobustCommand{\EOGSL}
1548   {\ensuremath{\exists}\OGSL}
1549 \DeclareRobustCommand{\UOGSL}
1550   {\ensuremath{\forall}\OGSL}
1551
1552 \DeclareRobustCommand{\FOGSL}
1553   {\{\textname{F}\}\OGSL}
1554
1555 \DeclareRobustCommand{\EFOGSL}
1556   {\ensuremath{\exists}\FOGSL}
1557 \DeclareRobustCommand{\UFOGSL}
1558   {\ensuremath{\forall}\FOGSL}
1559
1560 % Conjunctive-Goal Strategy Logic
1561 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
1562   {\SL[#1][#2][cg\arglef{,}{#3}]}
1563
1564 \DeclareRobustCommand{\ECGSL}
1565   {\ensuremath{\exists}\CGSL}
1566 \DeclareRobustCommand{\UCGSL}
1567   {\ensuremath{\forall}\CGSL}
1568
1569 \DeclareRobustCommand{\FCGSL}
1570   {\{\textname{F}\}\CGSL}
1571
1572 \DeclareRobustCommand{\EFCGSL}
1573   {\ensuremath{\exists}\FCGSL}
1574 \DeclareRobustCommand{\UFCGSL}
1575   {\ensuremath{\forall}\FCGSL}
1576
1577 % Disjunctive-Goal Strategy Logic
1578 \DeclareRobustCommandx{\DGPL}[3][1=, 2=, 3=]
1579   {\SL[#1][#2][dg\arglef{,}{#3}]}
1580
1581 \DeclareRobustCommand{\EDGPL}
1582   {\ensuremath{\exists}\DGPL}
1583 \DeclareRobustCommand{\UDGPL}
1584   {\ensuremath{\forall}\DGPL}
1585
1586 \DeclareRobustCommand{\FDGPL}
1587   {\{\textname{F}\}\DGPL}
1588
1589 \DeclareRobustCommand{\EFDGPL}
1590   {\ensuremath{\exists}\FDGPL}
1591 \DeclareRobustCommand{\UFDGPL}
1592   {\ensuremath{\forall}\FDGPL}
1593
1594 % Alternating-Goal Strategy Logic
1595 \DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
1596   {\SL[#1][#2][ag\arglef{,}{#3}]}
1597
1598 \DeclareRobustCommand{\EAGSL}
1599   {\ensuremath{\exists}\AGSL}
1600 \DeclareRobustCommand{\UAGSL}
1601   {\ensuremath{\forall}\AGSL}
1602
1603 \DeclareRobustCommand{\FAGSL}
1604   {\{\textname{F}\}\AGSL}
1605

```

```

1606 \DeclareRobustCommand{\EFAGSL}
1607   {\ensuremath{\exists}\FAGSL}
1608 \DeclareRobustCommand{\UFAGSL}
1609   {\ensuremath{\forall}\FAGSL}
1610
1611 % Extended-Goal Strategy Logic
1612 \DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
1613   {\SL[#1][#2][eg\arglef{,}{#3}]}
1614
1615 \DeclareRobustCommand{\EEGSL}
1616   {\ensuremath{\exists}\EGSL}
1617 \DeclareRobustCommand{\UEGSL}
1618   {\ensuremath{\forall}\EGSL}
1619
1620 \DeclareRobustCommand{\FEGSL}
1621   {\{\txtname{F}\}\xGSL}
1622
1623 \DeclareRobustCommand{\EFEGSL}
1624   {\ensuremath{\exists}\FEGSL}
1625 \DeclareRobustCommand{\UFEGSL}
1626   {\ensuremath{\forall}\FEGSL}
1627
1628 % Boolean-Goal Strategy Logic
1629 \DeclareRobustCommandx{\BGSL}[3][1=, 2=, 3=]
1630   {\SL[#1][#2][bg\arglef{,}{#3}]}
1631
1632 \DeclareRobustCommand{\EBGSL}
1633   {\ensuremath{\exists}\BGSL}
1634 \DeclareRobustCommand{\UBGSL}
1635   {\ensuremath{\forall}\BGSL}
1636
1637 \DeclareRobustCommand{\FBGSL}
1638   {\{\txtname{F}\}\xGSL}
1639
1640 \DeclareRobustCommand{\EFBGSL}
1641   {\ensuremath{\exists}\FBGSL}
1642 \DeclareRobustCommand{\UFBGSL}
1643   {\ensuremath{\forall}\FBGSL}
1644
1645 % Nested-Goal Strategy Logic
1646 \DeclareRobustCommandx{\NGSL}[3][1=, 2=, 3=]
1647   {\SL[#1][#2][ng\arglef{,}{#3}]}
1648
1649 \DeclareRobustCommand{\ENGSL}
1650   {\ensuremath{\exists}\NGSL}
1651 \DeclareRobustCommand{\UNGSL}
1652   {\ensuremath{\forall}\NGSL}
1653
1654 \DeclareRobustCommand{\FNGSL}
1655   {\{\txtname{F}\}\xGSL}
1656
1657 \DeclareRobustCommand{\EFNGSL}
1658   {\ensuremath{\exists}\FNGSL}
1659 \DeclareRobustCommand{\UFNGSL}
1660   {\ensuremath{\forall}\FNGSL}
1661
1662 % Undefined-Goal Strategy Logic
1663 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
1664   {\SL[#1][#2][xg\arglef{,}{#3}]}
1665
1666 \DeclareRobustCommand{\EXGSL}
1667   {\ensuremath{\exists}\XGSL}
1668 \DeclareRobustCommand{\UXGSL}

```

```

1669 {\ensuremath{\forall}\text{XGSL}}
1670
1671 \DeclareRobustCommand{\FXGSL}
1672 {\{\textname{F}\}\text{XGSL}}
1673
1674 \DeclareRobustCommand{\EFXGSL}
1675 {\ensuremath{\exists}\text{FXGSL}}
1676 \DeclareRobustCommand{\UFXGSL}
1677 {\ensuremath{\forall}\text{FXGSL}}

1678 %%** Syntax *****%%

\BndSet, ... ...
1679 \newcommand{\bndsym}{\flat}
1680 \newcommand{\bndset}{\Bn}
1681 \cmdmthsetext{\Bnd}[\bndset][\bndsym]
1682 \usrmth{\bnd}{\}{argfun}

\psn ...
1683 \usrmth{\psn}{\}{argfun}

1684 %%** Semantics *****%%

\nxtFun ...
1685 \newcommand{\nxtfun}{\nxt}
1686 \cmdmthfun{\nxt}[\nxtfun]

1687 \fi
1688 %*****%%
1689 %*****%%
1690 %%** Macros for Automata *****%%
1691 %*****%%
1692 \ifaut@
1693 %%** Finite Word Automata *****%%

\DWA, ... ...
1694 \cmdtxtoparname{\DWA}\cmdtxtoparname{\NWA}\cmdtxtoparname{\UWA}\cmdtxtoparname{\AWA}
1695
1696 \cmdtxtoparname{\DFW}\cmdtxtoparname{\NFW}\cmdtxtoparname{\UFW}\cmdtxtoparname{\AFW}
1697 \cmdtxtoparname{\DBW}\cmdtxtoparname{\NBW}\cmdtxtoparname{\UBW}\cmdtxtoparname{\ABW}
1698 \cmdtxtoparname{\DCW}\cmdtxtoparname{\NCW}\cmdtxtoparname{\UCW}\cmdtxtoparname{\ACW}
1699 \cmdtxtoparname{\DPW}\cmdtxtoparname{\NPW}\cmdtxtoparname{\UPW}\cmdtxtoparname{\APW}
1700 \cmdtxtoparname{\DRW}\cmdtxtoparname{\NRW}\cmdtxtoparname{\URW}\cmdtxtoparname{\ARW}
1701 \cmdtxtoparname{\DSW}\cmdtxtoparname{\NSW}\cmdtxtoparname{\USW}\cmdtxtoparname{\ASW}
1702 \cmdtxtoparname{\DMW}\cmdtxtoparname{\NMW}\cmdtxtoparname{\UMW}\cmdtxtoparname{\AMW}

\GFG, \PD, ... ...
1703 \cmdtxtoparname{\GFG}
1704
1705 \cmdtxtoparname{\PD}
1706
1707 %% ...

1708 %%** Syntax *****%%

\AutName, ... ...
1709 \newcommand{\autname}{\A}
1710 \usrmthlatupp{\Aut}{\Name}{\name}[\autname]
1711 \newcommand{\autset}{\Aut}
1712 \cmdmthset{\Aut}[\autset]

\WAutSet ...
1713 \newcommand{\wautset}{\WAut}
1714 \cmdmthset{\WAut}[\wautset]

```

```

\SttSet, ... ...
1715 \def\sttsym{q}
1716 \def\sttset{Q}
1717 \cmdmthsetext{Stt}[\sttset][\sttsym]
1718 \cmdmthset{IStt}[\sttset_{I}]
1719 \cmdmthsymelm{istt}[\sttsym_{I}]
1720 \cmdmthset{FStt}[\sttset_{F}]
1721 \cmdmthsymelm{fstt}[\sttsym_{F}]

\SymSet, ... ...
1722 \newcommand{\symsym}{\sigma}
1723 \newcommand{\symset}{\Sigma}
1724 \cmdmthsetext{Sym}[\symset][\symsym]

\trnFun ...
1725 \newcommand{\trnsym}{\delta}
1726 \cmdmthfun{trn}[\trnsym]

1727 %** Semantics *****%

\LangFun ...
1728 \newcommand{\langfun}{L}
1729 \cmdmthfun{Lang}[\langfun]

\WrdSet, ... ...
1730 \newcommand{\wrdsym}{w}
1731 \newcommand{\wrddset}{Wr}
1732 \cmdmthsetext{Wrd}[\wrddset][\wrdsym]

1733 %** Finite Tree Automata *****%

\DTA, ... ...
1734 \cmdtxtoparname{DTA}\cmdtxtoparname{NTA}\cmdtxtoparname{UTA}\cmdtxtoparname{ATA}
1735
1736 \cmdtxtoparname{DFT}\cmdtxtoparname{NFT}\cmdtxtoparname{UFT}\cmdtxtoparname{AFT}
1737 \cmdtxtoparname{DBT}\cmdtxtoparname{NBT}\cmdtxtoparname{UBT}\cmdtxtoparname{ABT}
1738 \cmdtxtoparname{DCT}\cmdtxtoparname{NCT}\cmdtxtoparname{UCT}\cmdtxtoparname{ACT}
1739 \cmdtxtoparname{DPT}\cmdtxtoparname{NPT}\cmdtxtoparname{UPT}\cmdtxtoparname{APT}
1740 \cmdtxtoparname{DRT}\cmdtxtoparname{NRT}\cmdtxtoparname{URT}\cmdtxtoparname{ART}
1741 \cmdtxtoparname{DST}\cmdtxtoparname{NST}\cmdtxtoparname{UST}\cmdtxtoparname{AST}
1742 \cmdtxtoparname{DMT}\cmdtxtoparname{NMT}\cmdtxtoparname{UMT}\cmdtxtoparname{AMT}

1743 %** Syntax *****%

\TAutSet ...
1744 \newcommand{\tautset}{TAut}
1745 \cmdmthset{TAut}[\tautset]

\DirSet, ... ...
1746 \newcommand{\dirsym}{d}
1747 \newcommand{\dirset}{\Lambda}
1748 \cmdmthsetext{Dir}[\dirset][\dirsym]

1749 %** Semantics *****%

\TreeSet, ... ...
1750 \newcommand{\treesym}{T}
1751 \newcommand{\treeset}{Tr}
1752 \cmdmthsetext{Tree}[\treeset][\treesym]

\wotFun ...
1753 \newcommand{\wotfun}{wot}
1754 \cmdmthfun{wot}[\wotfun]

```

```

1755 \fi
1756 %*****%
1757 %*****%
1758 %** Format Tricks *****%
1759 %*****%
1760 \iffirm@

... ..

1761 %...

1762 \fi
1763 %*****%
1764 %*****%
1765 %** Figure Tricks *****%
1766 %*****%
1767 \iffig@

1768 \RequirePackage{tikz}
1769 \usetikzlibrary{arrows,shapes,patterns}

1770 \tikzstyle{every node} =
1771   [draw = none, fill = none, black, thin]
1772 \tikzstyle{every edge} +=
1773   [black, thick]

1774 \tikzstyle{noall} =
1775   [draw = none, fill = none]
1776 \tikzstyle{nodraw} =
1777   [draw = none, fill = white]
1778 \tikzstyle{nofill} =
1779   [draw = black, fill = none]

1780 \ifwrpfig@
1781   % Wrapfig Package
1782   \RequirePackage{wrapfig}
1783 \fi

1784 \fi
1785 %*****%
1786 %*****%
1787 %** Table Tricks *****%
1788 %*****%
1789 \iftab@

... ..

1790 %...

1791 \fi
1792 %*****%
1793 %*****%
1794 %** Algorithm Tricks *****%
1795 %*****%
1796 \ifalg@

1797 \RequirePackage[ruled,vlined]{algorithm2e}
1798 \setlength{\algomargin}{1.25em}
1799 \DontPrintSemicolon
1800 \SetInd{0.25em}{0.5em}

\Signature ...
1801 \SetKw{Signature}{signature}

\Macro, ... ..
1802 \SetKwFor{Macro}{macro}{}{}
1803 \SetKwFor{Function}{function}{}{}
1804 \SetKwFor{Procedure}{procedure}{}{}

```

```

\Let ...
1805 \SetKwFor{Let}{let}{in}{}

\True, \False ...
1806 \SetKw{True}{true}
1807 \SetKw{False}{false}

\GoTo, ... ...
1808 \SetKw{GoTo}{goto}
1809 \SetKw{Break}{break}
1810 \SetKw{Continue}{continue}

\MIf, ... ...
1811 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}

\nlr ...
1812 \DeclareRobustCommand{\nlr}[1]
1813   {\addtocounter{AlgoLine}{1}%
1814    \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

1815 \fi
1816 %%*****%
1817 \endinput
1818 \</package>

```

2 Change History

v0.0	extensions	1
General: First public release	v0.5	
v0.1	General: Figure tricks	1
General: Algorithm tricks	v0.6	
v0.2	General: Small refinements	1
General: Changes in auxiliary tricks	v0.7	
v0.3	General: Refinements, corrections, and extensions	1
General: Few problems solved		
v0.4		
General: Refactoring, corrections, and		

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