fmocdmac — FM's OCD LaTeX Macro*

Fabio Mogavero
fm@fabiomogavero.com

Released 2024/02/21

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\ifhypref@ \hypref@true
33 \DeclareOption{nohypref}{\hypref@false}
34
```

*This document describes version v0.29 of the fmocdmac package, last revised 2024/02/21.

```
%% Font tools
\newif\iffnttls@ \fnttls@true
\DeclareOption{nofnttls}{\fnttls@false}

%% Camera-ready version
\newif\ifcrv@ \crv@false
\DeclareOption{crv}{\crv@true}

%% Change bars
\newif\ifchgbar@ \chgbar@false
\DeclareOption{chgbar}{\chgbar@true}

%% Line numbers
\newif\iflinnum@ \linnum@false
\DeclareOption{linnum}{\linnum@true}


%% Text macro generation
\newif\iftxtgen@ \txtgen@false
\DeclareOption{txtgen}{\txtgen@true}
\DeclareOption{notxtgen}
  {\txtgen@false\txt@false\com@false\gam@false\log@false\aut@false}

%% Math macro generation
\newif\ifmthgen@ \mthgen@false
\DeclareOption{mthgen}{\mthgen@true}
\DeclareOption{nomthgen}
  {\mthgen@false\mth@false\gam@false\log@false\aut@false}


%% Elementary macros for text
\newif\iftxt@ \txt@false
\DeclareOption{txt}{\txt@true\txtgen@true}
\DeclareOption{notxt}{\txt@false}

%% Elementary macros for math
\newif\ifmth@ \mth@false
\DeclareOption{mth}{\mth@true\mthgen@true}
\DeclareOption{nomth}{\mth@false}


%% Macros for computational-complexity classes
\newif\ifcom@ \com@false
\DeclareOption{com}{\com@true\txtgen@true}
\DeclareOption{nocom}{\com@false}


%% Macros for graphs
\newif\ifgrp@ \grp@false
\DeclareOption{grp}{\grp@true\txtgen@true\mthgen@true}
\DeclareOption{nogrp}{\grp@false}

%% Macros for games
\newif\ifgam@ \gam@false
\DeclareOption{gam}{\gam@true\txtgen@true\mthgen@true}
\DeclareOption{nogam}{\gam@false}

%% Macros for logics
\newif\iflog@ \log@false
\DeclareOption{log}{\log@true\txtgen@true\mthgen@true}
\DeclareOption{nolog}{\log@false}

%% Macros for automata
```

```
\newif\ifaut@ \aut@false
\DeclareOption{aut}{\aut@true\txtgen@true\mthgen@true}
\DeclareOption{noaut}{\aut@false}


%% Format-related tricks
\newif\iffrm@ \frm@false
\DeclareOption{frm}{\frm@true}
\DeclareOption{nofrm}{\frm@false}


%% Figure-related tricks
\newif\iffig@ \fig@false
\DeclareOption{fig}{\fig@true}
\DeclareOption{nofig}{\fig@false}

%% Wrapfig package
\newif\ifwrpfig@ \wrpfig@true
\DeclareOption{nowrpfig}{\wrpfig@false}


%% Table-related tricks
\newif\iftab@ \tab@false
\DeclareOption{tab}{\tab@true}
\DeclareOption{notab}{\tab@false}


%% Algorithm-related tricks
\newif\ifalg@ \alg@false
\DeclareOption{alg}{\alg@true}
\DeclareOption{noalg}{\alg@false}

```

Option-processing code:

```

\DeclareOption*{\PackageWarning{fmocdmac}{Unknown~`\CurrentOption'}}%

\ExecuteOptions{aux,txtgen,mthgen,txt,mth,com,grp,gam,log,aut}%

\ProcessOptions\relax%

\ifcsdef{if@twocolumn}{}{\newif\if@twocolumn}

```

Package main body:

```

%%*****************************************************************************%%
%%** Auxiliary Alphabet Letters ************************************************%%
%%*****************************************************************************%%
```

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

```
\csdef{omicron}{o}
```

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

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

%%*****************************************************************************%%

%%*****************************************************************************%%
%%** Tools *********************************************************************%%
%%*****************************************************************************%%
```

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

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

```
\DeclareRobustCommand{\empchk}[2]
  {\if&#1&\else#2\fi}
```

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

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

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

%%*************************************************************************%%
```

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

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

```
\DeclareRobustCommand{\arglef}[2]
  {\empchk{#2}{#1#2}}
```

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

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

```
\DeclareRobustCommand{\argrig}[2]
  {\empchk{#1}{#1#2}}
```

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

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

```
\DeclareRobustCommand{\argmid}[3]
  {\empchk{#2}{#1#2#3}}
```

\argsep **Separators:** `\argsep{⟨A⟩}{⟨B⟩}{⟨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”

```
\DeclareRobustCommand{\argsep}[3]
  {\if&#1&#3\else#1\arglef{#2}{#3}\fi}

%%*************************************************************************%%
```

\varcmd **Variadic commands:** `\varcmd{⟨A⟩}{⟨B⟩}{⟨C⟩}{⟨D⟩}{⟨E⟩}{⟨F⟩}` ... to do!

```
\DeclareRobustCommand{\varcmd}[6]
  {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
    {\csname check#1arg\endcsname{\argsep{##1}{#4}{\empchk{##2}{{##2}}}}}%
  \expandafter\newcommand\csname check#1arg\endcsname[1]
    {\csname @ifnextchar\endcsname%
      \bgroup{\csname gobble#1arg\endcsname{##1}}{#2{##1#5}#6}}%
  \expandafter\newcommand\csname#1\endcsname[1]
    {\csname check#1arg\endcsname{#3##1}}}
```

```
%%*************************************************************************%%
```

`\seqoftag` **Sequence of tags:** `\seqoftag{`⟨*A*⟩`}{`⟨*B*⟩`}{`⟨*C*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqoftag}[3]
  {\@for\itr:={#1}\do%
    {\expandafter\csedef{\itr#2}%
      {\noexpand\csname #3\endcsname{\itr}}}}
```

`\seqofcmd` **Sequence of commands:** `\seqofcmd{`⟨*A*⟩`}{`⟨*B*⟩`}{`⟨*C*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqofcmd}[3]
  {\@for\itr:={#1}\do%
    {\expandafter\csedef{\itr#2}%
      {\noexpand\csname #3\endcsname{\csname \itr\endcsname}}}}

%%*************************************************************************%%
```

`\seqoflatlow` **Sequence of Latin lowercase letters:** `\seqoflatlow{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqoflatlow}
  {\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*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqoflatupp}
  {\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*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqoflatlet}[2]
  {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}

%%*************************************************************************%%
```

`\seqofgrklow` **Sequence of Greek lowercase letters:** `\seqofgrklow{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqofgrklow}
  {\seqofcmd{alpha,beta,gamma,delta,epsilon,varepsilon,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}}
```

`\seqofgrkupp` **Sequence of Greek uppercase letters:** `\seqofgrkupp{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqofgrkupp}
  {\seqofcmd{Alpha,Beta,Gamma,Delta,Epsilon,varEpsilon,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}}
```

`\seqofgrklet` **Sequence of Greek letters:** `\seqofgrklet{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqofgrklet}[2]
  {\seqofgrklow{#1}{#2}\seqofgrkupp{#1}{#2}}

%%*************************************************************************%%
```

`\seqoflow` **Sequence of lowercase letters:** `\seqoflow{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqoflow}[2]
  {\seqoflatlow{#1}{#2}\seqofgrklow{#1}{#2}}
```

`\seqofupp` **Sequence of uppercase letters:** `\seqofupp{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqofupp}[2]
  {\seqoflatupp{#1}{#2}\seqofgrkupp{#1}{#2}}
```

`\seqoflet` **Sequence of all letters:** `\seqoflet{`⟨*A*⟩`}{`⟨*B*⟩`}` ... to do!

```
\DeclareRobustCommand{\seqoflet}[2]
  {\seqoflow{#1}{#2}\seqofupp{#1}{#2}}

%%*************************************************************************%%
```

```
%%*************************************************************************%%
%%** Auxiliary Packages ****************************************************%%
%%*************************************************************************%%
\ifaux@

\ifamsdef@
  % AMS Packages
  \RequirePackage{mathtools}
  \RequirePackage{amssymb}
  \RequirePackage{stmaryrd}
  \interdisplaylinepenalty=2500
\fi

\ifamsthm@
  % AMS Theorem Tools
  \RequirePackage{amsthm}
\fi

\ifthmtls@
  % Extended Theorem Tools
  \RequirePackage{thmtools}
  \RequirePackage{thm-restate}
\fi

\ifenmtls@
  % Enumeration Tools
  \RequirePackage{paralist}
\fi

\ifhypref@
  % Hyper References
  \RequirePackage{hyperref}
  \hypersetup {
    pdfsubject    = {},
    pdfkeywords   = {},
    pdfproducer   = {},
    pdfcreator    = {},
    pdfpagemode   = {UseNone},
    pdfstartview  = {FitH},
    urlcolor      = {blue},
    colorlinks
  }
\fi

\iffnttls@
  % Font Tools
  \RequirePackage[final]{microtype}
\fi

\ifcrv@
  % Camera-Ready Version

  %%...

\else
  % Draft Version

  %%...

  \ifchgbar@
    % Change Bars
    \RequirePackage{changebar}
  \fi
```

```
  \iflinnum@
    % Line Numbers
    \if@twocolumn
      \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
    \else
      \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
    \fi
  \fi

  %%...

\fi

\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Auxiliary Font Declarations ***********************************************%%
%%*****************************************************************************%%
```

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

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

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

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

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

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

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

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

```
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Text Meta Commands ********************************************************%%
%%*****************************************************************************%%
```

\newtxt ... to do!

- \newtxt[\rmfamily]{Name}[sub][sup][Ext] = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$"
- \newtxt[\sffamily]{Name}[sub][sup][Ext] = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext}$"
- \newtxt[\ttfamily]{Name}[sub][sup][Ext] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext}$"
- \newtxt*[\rmfamily]{Name}[sub][sup][Ext] = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$"
- \newtxt*[\sffamily]{Name}[sub][sup][Ext] = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext}$"
- \newtxt*[\ttfamily]{Name}[sub][sup][Ext] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext}$"

```
\DeclareRobustCommand{\newtxt}
  {\@ifstar{\@snewtxt}{\@newtxt}}
\DeclareRobustCommandx{\@newtxt}[5][1=, 3=, 4=, 5=]
  {\text{#1#2\txtsubsup[#1]{#3}{#4}#5}\xspace}
\DeclareRobustCommandx{\@snewtxt}[5][1=, 3=, 4=, 5=]
  {#1#2\txtsubsup[#1]{#3}{#4}#5\normalfont\xspace}
```

\newtxtsty ... to do!

- \newtxtsty{\rmfamily}{Name}[sub][sup][Ext] = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$"
- \newtxtsty{\rmfamily}[\sffamily]{Name}[sub][sup][Ext] = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext}$"
- \newtxtsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext}$"
- \newtxtsty*{\rmfamily}{Name}[sub][sup][Ext] = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$"
- \newtxtsty*{\rmfamily}[\sffamily]{Name}[sub][sup][Ext] = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext}$"
- \newtxtsty*{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext}$"

```
\DeclareRobustCommand{\newtxtsty}
  {\@ifstar{\@snewtxtsty}{\@newtxtsty}}
\DeclareRobustCommandx{\@newtxtsty}[2][2=]
  {\newtxt[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewtxtsty}[2][2=]
  {\newtxt*[\defval{#2}{#1}]}
```

`\newtxtarg` ... to do!

- `\newtxtarg[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg})\mathrm{Ext2}$"
- `\newtxtarg[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext1}(\mathsf{Arg})\mathsf{Ext2}$"
- `\newtxtarg[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext1(Arg)Ext2}$"
- `\newtxtarg*[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg})\mathrm{Ext2}$"
- `\newtxtarg*[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext1}(\mathsf{Arg})\mathsf{Ext2}$"
- `\newtxtarg*[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext1(Arg)Ext2}$"

```
\DeclareRobustCommand{\newtxtarg}
  {\@ifstar{\@snewtxtarg}{\@newtxtarg}}
\DeclareRobustCommandx{\@newtxtarg}[7][1=, 3=, 4=, 5=, 7=]
  {\newtxt[#1]{#2}[#3][#4][\argmid{#5(){#6}{)#7}]}
\DeclareRobustCommandx{\@snewtxtarg}[7][1=, 3=, 4=, 5=, 7=]
  {\newtxt*[#1]{#2}[#3][#4][\argmid{#5(){#6}{)#7}]}
```

`\newtxtargsty` ... to do!

- `\newtxtargsty{\rmfamily}{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg})\mathrm{Ext2}$"
- `\newtxtargsty{\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext1}(\mathsf{Arg})\mathsf{Ext2}$"
- `\newtxtargsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext1(Arg)Ext2}$"
- `\newtxtargsty*{\rmfamily}{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg})\mathrm{Ext2}$"
- `\newtxtargsty*{\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}\mathsf{Ext1}(\mathsf{Arg})\mathsf{Ext2}$"
- `\newtxtargsty*{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext1(Arg)Ext2}$"

```
\DeclareRobustCommand{\newtxtargsty}
  {\@ifstar{\@snewtxtargsty}{\@newtxtargsty}}
\DeclareRobustCommandx{\@newtxtargsty}[2][2=]
  {\newtxtarg[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewtxtargsty}[2][2=]
  {\newtxtarg*[\defval{#2}{#1}]}
```

`\newtxtoarg` ... to do!

- `\newtxtoarg[\rmfamily]{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}(\mathrm{Arg})$"
- `\newtxtoarg[\sffamily]{Name}[sub][sup][Arg]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}(\mathsf{Arg})$"
- `\newtxtoarg[\ttfamily]{Name}[sub][sup][Arg]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{(Arg)}$"
- `\newtxtoarg*[\rmfamily]{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}(\mathrm{Arg})$"
- `\newtxtoarg*[\sffamily]{Name}[sub][sup][Arg]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}(\mathsf{Arg})$"
- `\newtxtoarg*[\ttfamily]{Name}[sub][sup][Arg]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{(Arg)}$"

```
\DeclareRobustCommand{\newtxtoarg}
  {\@ifstar{\@snewtxtoarg}{\@newtxtoarg}}
\DeclareRobustCommandx{\@newtxtoarg}[5][1=, 3=, 4=, 5=]
  {\newtxtarg[#1]{#2}[#3][#4][]{#5}[]}
\DeclareRobustCommandx{\@snewtxtoarg}[5][1=, 3=, 4=, 5=]
  {\newtxtarg*[#1]{#2}[#3][#4][]{#5}[]}
```

`\newtxtoargsty` ... to do!

- `\newtxtoargsty{\rmfamily}{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}(\mathrm{Arg})$"
- `\newtxtoargsty{\rmfamily}[\sffamily]{Name}[sub][sup][Arg]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}(\mathsf{Arg})$"
- `\newtxtoargsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Arg]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{(Arg)}$"
- `\newtxtoargsty*{\rmfamily}{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}(\mathrm{Arg})$"
- `\newtxtoargsty*{\rmfamily}[\sffamily]{Name}[sub][sup][Arg]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}(\mathsf{Arg})$"

- `\newtxtoargsty*{\rmfamily}[\ttfamily]{Name}[sub][sup][Arg]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{(Arg)}$"

```
\DeclareRobustCommand{\newtxtoargsty}
  {\@ifstar{\@snewtxtoargsty}{\@newtxtoargsty}}
\DeclareRobustCommandx{\@newtxtoargsty}[2][2=]
  {\newtxtoarg[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewtxtoargsty}[2][2=]
  {\newtxtoarg*[\defval{#2}{#1}]}
```

`\newtxtpar` ... to do!

- `\newtxtpar[\rmfamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{Ext1[Par]Ext2}$"
- `\newtxtpar[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{Ext1[Par]Ext2}$"
- `\newtxtpar[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{Ext1[Par]Ext2}$"
- `\newtxtpar*[\rmfamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{Ext1[Par]Ext2}$"
- `\newtxtpar*[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{Ext1[Par]Ext2}$"
- `\newtxtpar*[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{Ext1[Par]Ext2}$"

```
\DeclareRobustCommand{\newtxtpar}
  {\@ifstar{\@snewtxtpar}{\@newtxtpar}}
\DeclareRobustCommandx{\@newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
  {\newtxt[#1]{#2}[#3][#4][\argmid{#5[}{#6}{]#7}]}
\DeclareRobustCommandx{\@snewtxtpar}[7][1=, 3=, 4=, 5=, 7=]
  {\newtxt*[#1]{#2}[#3][#4][\argmid{#5[}{#6}{]#7}]}
```

`\newtxtparsty` ... to do!

- `\newtxtparsty{\rmfamily}{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{Ext1[Par]Ext2}$"
- `\newtxtparsty{\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{Ext1[Par]Ext2}$"
- `\newtxtparsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{Ext1[Par]Ext2}$"
- `\newtxtparsty*{\rmfamily}{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{Ext1[Par]Ext2}$"
- `\newtxtparsty*{\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{Ext1[Par]Ext2}$"
- `\newtxtparsty*{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{Ext1[Par]Ext2}$"

```
\DeclareRobustCommand{\newtxtparsty}
  {\@ifstar{\@snewtxtparsty}{\@newtxtparsty}}
\DeclareRobustCommandx{\@newtxtparsty}[2][2=]
  {\newtxtpar[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewtxtparsty}[2][2=]
  {\newtxtpar*[\defval{#2}{#1}]}
```

`\newtxtopar` ... to do!

- `\newtxtopar[\rmfamily]{Name}[sub][sup][Par]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{[Par]}$"
- `\newtxtopar[\sffamily]{Name}[sub][sup][Par]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{[Par]}$"
- `\newtxtopar[\ttfamily]{Name}[sub][sup][Par]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{[Par]}$"
- `\newtxtopar*[\rmfamily]{Name}[sub][sup][Par]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{[Par]}$"
- `\newtxtopar*[\sffamily]{Name}[sub][sup][Par]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{[Par]}$"
- `\newtxtopar*[\ttfamily]{Name}[sub][sup][Par]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{[Par]}$"

```
\DeclareRobustCommand{\newtxtopar}
  {\@ifstar{\@snewtxtopar}{\@newtxtopar}}
\DeclareRobustCommandx{\@newtxtopar}[5][1=, 3=, 4=, 5=]
  {\newtxtpar[#1]{#2}[#3][#4][]{#5}[]}
\DeclareRobustCommandx{\@snewtxtopar}[5][1=, 3=, 4=, 5=]
  {\newtxtpar*[#1]{#2}[#3][#4][]{#5}[]}
```

`\newtxtoparsty` ... to do!

- `\newtxtoparsty{\rmfamily}{Name}[sub][sup][Par]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{[Par]}$"
- `\newtxtoparsty{\rmfamily}[\sffamily]{Name}[sub][sup][Par]` = "$\mathsf{Name}^{\mathsf{sup}}_{\mathsf{sub}}\mathsf{[Par]}$"
- `\newtxtoparsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Par]` = "$\mathtt{Name}^{\mathtt{sup}}_{\mathtt{sub}}\mathtt{[Par]}$"
- `\newtxtoparsty*{\rmfamily}{Name}[sub][sup][Par]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}\mathrm{[Par]}$"

- `\newtxtoparsty*{\rmfamily}[\sffamily]{Name}[sub][sup][Par]` = "$\mathsf{Name}_{\mathsf{sub}}^{\mathsf{sup}}$[Par]"
- `\newtxtoparsty*{\rmfamily}[\ttfamily]{Name}[sub][sup][Par]` = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}$[Par]"

```
\DeclareRobustCommand{\newtxtoparsty}
  {\@ifstar{\@snewtxtoparsty}{\@newtxtoparsty}}
\DeclareRobustCommandx{\@newtxtoparsty}[2][2=]
  {\newtxtopar[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewtxtoparsty}[2][2=]
  {\newtxtopar*[\defval{#2}{#1}]}
```

`\txtsubsup` ... to do!

- `\txtsubsup{sub}{}` = "$_{\text{sub}}$"; `\txtsubsup{}{sup}` = "$^{\text{sup}}$"; `\txtsubsup{sub}{sup}` = "$_{\text{sub}}^{\text{sup}}$"
- `\txtsubsup[\sffamily]{Aa}{Bb}` = "$_{\mathsf{Aa}}^{\mathsf{Bb}}$"
- `\txtsubsup[\ttfamily]{Aa}{Bb}` = "$_{\mathtt{Aa}}^{\mathtt{Bb}}$"

```
\DeclareRobustCommand{\txtsubsup}[3][]
  {\ensuremath{\empchk{#2}{_{\text{#1#2}}}\empchk{#3}{^{\text{#1#3}}}}}
%%*************************************************************************%%
```

`\txt` ... to do!

- `\txt{Name}[sub][sup][Ext]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$"
- `\txt[\scshape]{Name}[sub][sup][Ext]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext}$"
- `\txt[\bfseries]{Name}[sub][sup][Ext]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext}$"
- `\txt*{Name}[sub][sup][Ext]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$"
- `\txt*[\scshape]{Name}[sub][sup][Ext]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext}$"
- `\txt*[\bfseries]{Name}[sub][sup][Ext]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext}$"

```
\DeclareRobustCommand{\txt}
  {\@ifstar{\newtxtsty*{\txtsty}}{\newtxtsty{\txtsty}}}
```

`\txtarg` ... to do!

- `\txtarg{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1(Arg)Ext2}$"
- `\txtarg[\scshape]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext1(Arg)Ext2}$"
- `\txtarg[\bfseries]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext1(Arg)Ext2}$"
- `\txtarg*{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1(Arg)Ext2}$"
- `\txtarg*[\scshape]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext1(Arg)Ext2}$"
- `\txtarg*[\bfseries]{Name}[sub][sup][Ext1]{Arg}[Ext2]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext1(Arg)Ext2}$"

```
\DeclareRobustCommand{\txtarg}
  {\@ifstar{\newtxtargsty*{\txtsty}}{\newtxtargsty{\txtsty}}}
```

`\txtoarg` ... to do!

- `\txtoarg{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{(Arg)}$"
- `\txtoarg[\scshape]{Name}[sub][sup][Arg]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{(Arg)}$"
- `\txtoarg[\bfseries]{Name}[sub][sup][Arg]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{(Arg)}$"
- `\txtoarg*{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{(Arg)}$"
- `\txtoarg*[\scshape]{Name}[sub][sup][Arg]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{(Arg)}$"
- `\txtoarg*[\bfseries]{Name}[sub][sup][Arg]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{(Arg)}$"

```
\DeclareRobustCommand{\txtoarg}
  {\@ifstar{\newtxtoargsty*{\txtsty}}{\newtxtoargsty{\txtsty}}}
```

`\txtpar` ... to do!

- `\txtpar{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1[Par]Ext2}$"
- `\txtpar[\scshape]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext1[Par]Ext2}$"
- `\txtpar[\bfseries]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext1[Par]Ext2}$"
- `\txtpar*{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1[Par]Ext2}$"
- `\txtpar*[\scshape]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext1[Par]Ext2}$"

- `\txtpar*[\bfseries]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathbf{Name^{sup}_{sub}Ext1[Par]Ext2}$"

```
\DeclareRobustCommand{\txtpar}
  {\@ifstar{\newtxtparsty*{\txtsty}}{\newtxtparsty{\txtsty}}}
```

`\txtopar` ... to do!

- `\txtopar{Name}[sub][sup][Par]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}[\mathrm{Par}]$"
- `\txtopar[\scshape]{Name}[sub][sup][Par]` = "$\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}[\textsc{Par}]$"
- `\txtopar[\bfseries]{Name}[sub][sup][Par]` = "$\mathbf{Name^{sup}_{sub}[Par]}$"
- `\txtopar*{Name}[sub][sup][Par]` = "$\mathrm{Name}^{\mathrm{sup}}_{\mathrm{sub}}[\mathrm{Par}]$"
- `\txtopar*[\scshape]{Name}[sub][sup][Par]` = "$\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}[\textsc{Par}]$"
- `\txtopar*[\bfseries]{Name}[sub][sup][Par]` = "$\mathbf{Name^{sup}_{sub}[Par]}$"

```
\DeclareRobustCommand{\txtopar}
  {\@ifstar{\newtxtoparsty*{\txtsty}}{\newtxtoparsty{\txtsty}}}
```

`\txtsty` ... to do!

```
\DeclareRobustCommand{\txtsty}
  {\mdseries\upshape\rmfamily}

%%*************************************************************************%%
```

`\cmdtxt` ... to do!

- `\cmdtxt{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`;
  `\txtNewCmd{Name}[sub][sup][Ext]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext}$
  `\txtNewCmd*{Name}[sub][sup][Ext]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext}$

```
\DeclareRobustCommand{\cmdtxt}[1]
  {\csdef{txt#1}%
    {\protect\@ifstar%
      {\newtxtsty*{\csname txtsty#1\endcsname}}%
      {\newtxtsty{\csname txtsty#1\endcsname}}}}
```

`\cmdtxtarg` ... to do!

- `\cmdtxtarg{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`;
  `\txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext1(Arg)Ext2}$
  `\txtargNewCmd*{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext1(Arg)Ext2}$

```
\DeclareRobustCommand{\cmdtxtarg}[1]
  {\csdef{txtarg#1}%
    {\protect\@ifstar%
      {\newtxtargsty*{\csname txtsty#1\endcsname}}%
      {\newtxtargsty{\csname txtsty#1\endcsname}}}}
```

`\cmdtxtoarg` ... to do!

- `\cmdtxtoarg{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`;
  `\txtoargNewCmd{Name}[sub][sup][Arg]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{(Arg)}$
  `\txtoargNewCmd*{Name}[sub][sup][Arg]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{(Arg)}$

```
\DeclareRobustCommand{\cmdtxtoarg}[1]
  {\csdef{txtoarg#1}%
    {\protect\@ifstar%
      {\newtxtoargsty*{\csname txtsty#1\endcsname}}%
      {\newtxtoargsty{\csname txtsty#1\endcsname}}}}
```

`\cmdtxtpar` ... to do!

- `\cmdtxtpar{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`;
  `\txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext1[Par]Ext2}$
  `\txtparNewCmd*{Name}[sub][sup][Ext1]{Par}[Ext2]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext1[Par]Ext2}$

```
\DeclareRobustCommand{\cmdtxtpar}[1]
  {\csdef{txtpar#1}%
    {\protect\@ifstar%
      {\newtxtparsty*{\csname txtsty#1\endcsname}}%
      {\newtxtparsty{\csname txtsty#1\endcsname}}}}
```

\cmdtxtopar ... to do!

- \cmdtxtopar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
  \txtoparNewCmd{Name}[sub][sup][Par] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}$[Par]
  \txtoparNewCmd*{Name}[sub][sup][Par] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}$[Par]

```
\DeclareRobustCommand{\cmdtxtopar}[1]
  {\csdef{txtopar#1}%
    {\protect\@ifstar%
      {\newtxtoparsty*{\csname txtsty#1\endcsname}}%
      {\newtxtoparsty{\csname txtsty#1\endcsname}}}}
```

\cmdtxtall ... to do!

- \cmdtxtall{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
  \txtNewCmd{Name}[sub][sup][Ext] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext}$
  \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext1(Arg)Ext2}$
  \txtoargNewCmd{Name}[sub][sup][Arg] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{(Arg)}$
  \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}\textsc{Ext1[Par]Ext2}$
  \txtoparNewCmd{Name}[sub][sup][Par] = $\textsc{Name}_{\textsc{sub}}^{\textsc{sup}}$[Par]

```
\DeclareRobustCommand{\cmdtxtall}[1]
  {\cmdtxt{#1}\cmdtxtarg{#1}\cmdtxtoarg{#1}\cmdtxtpar{#1}\cmdtxtopar{#1}}

%%*****************************************************************************%%
```

\usrtxt ... to do!

- \usrtxt{cmdName}{Suf}{};
  \cmdNameSuf = cmdName
  \cmdNameSuf* = cmdName
  \usrtxt{cmdName}{Suf}{arg};
  \cmdNameSuf{Arg} = cmdName(Arg)
  \cmdNameSuf*{Arg} = cmdName(Arg)
  \usrtxt{cmdName}{Suf}{par};
  \cmdNameSuf{Par} = cmdName[Par]
  \cmdNameSuf*{Par} = cmdName[Par]
- \usrtxt{cmdName}{Suf}{}[newName];
  \cmdNameSuf = newName
  \cmdNameSuf* = newName
  \usrtxt{cmdName}{Suf}{arg}[newName];
  \cmdNameSuf{Arg} = newName(Arg)
  \cmdNameSuf*{Arg} = newName(Arg)
  \usrtxt{cmdName}{Suf}{par}[newName];
  \cmdNameSuf{Par} = newName[Par]
  \cmdNameSuf*{Par} = newName[Par]

```
\DeclareRobustCommandx{\usrtxt}[4][4=]
  {\csdef{#1#2}%
    {\protect\@ifstar%
      {\csname txt#3\endcsname*{\defval{#4}{#1}}}%
      {\csname txt#3\endcsname{\defval{#4}{#1}}}}}

%%*****************************************************************************%%

%%*****************************************************************************%%
%%** Math Meta Commands *******************************************************%%
%%*****************************************************************************%%
```

\newmth ... to do!

- \newmth[mathrm]{Name}[sub][sup][Ext] = "$\mathrm{Name}_{sub}^{sup}Ext$"
- \newmth[mathsf]{Name}[sub][sup][Ext] = "$\mathsf{Name}_{sub}^{sup}Ext$"
- \newmth[mathtt]{Name}[sub][sup][Ext] = "$\mathtt{Name}_{sub}^{sup}Ext$"
- \newmth*[mathrm]{Name}[sub][sup][Ext] = "$\mathrm{N}ame_{sub}^{sup}Ext$"
- \newmth*[mathsf]{Name}[sub][sup][Ext] = "$\mathsf{N}ame_{sub}^{sup}Ext$"
- \newmth*[mathtt]{Name}[sub][sup][Ext] = "$\mathtt{N}ame_{sub}^{sup}Ext$"

```
\DeclareRobustCommand{\newmth}
  {\@ifstar{\@snewmth}{\@newmth}}
\DeclareRobustCommandx{\@newmth}[5][1=, 3=, 4=, 5=]
  {\ensuremath{\csname#1\endcsname{#2}\mthsubsup{#3}{#4}#5}}
\DeclareRobustCommandx{\@snewmth}[5][1=, 3=, 4=, 5=]
  {\ensuremath{\csname#1\endcsname #2\mthsubsup{#3}{#4}#5}}
```

`\newmthsty` ... to do!

- `\newmthsty{mathrm}{Name}[sub][sup][Ext]` = "$\mathrm{Name}_{sub}^{sup}Ext$"
- `\newmthsty{mathrm}[mathsf]{Name}[sub][sup][Ext]` = "$\mathsf{Name}_{sub}^{sup}Ext$"
- `\newmthsty{mathrm}[mathtt]{Name}[sub][sup][Ext]` = "$\mathtt{Name}_{sub}^{sup}Ext$"
- `\newmthsty*{mathrm}{Name}[sub][sup][Ext]` = "$\mathrm{N}ame_{sub}^{sup}Ext$"
- `\newmthsty*{mathrm}[mathsf]{Name}[sub][sup][Ext]` = "$\mathsf{N}ame_{sub}^{sup}Ext$"
- `\newmthsty*{mathrm}[mathtt]{Name}[sub][sup][Ext]` = "$\mathtt{N}ame_{sub}^{sup}Ext$"

```
\DeclareRobustCommand{\newmthsty}
  {\@ifstar{\@snewmthsty}{\@newmthsty}}
\DeclareRobustCommandx{\@newmthsty}[2][2=]
  {\newmth[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewmthsty}[2][2=]
  {\newmth*[\defval{#2}{#1}]}
```

`\newmtharg` ... to do!

- `\newmtharg[mathrm]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$"
- `\newmtharg[mathsf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$"
- `\newmtharg[mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$"
- `\newmtharg*[mathrm]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$"
- `\newmtharg*[mathsf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$"
- `\newmtharg*[mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$"

```
\DeclareRobustCommand{\newmtharg}
  {\@ifstar{\@snewmtharg}{\@newmtharg}}
\DeclareRobustCommandx{\@newmtharg}[7][1=, 3=, 4=, 5=, 7=]
  {\newmth[#1]{#2}[#3][#4][\argmid{#5\!\left(}{#6}{\right)\arglef{\!}{#7}}]}
\DeclareRobustCommandx{\@snewmtharg}[7][1=, 3=, 4=, 5=, 7=]
  {\newmth[#1]{#2}[#3][#4][\argmid{#5(}{#6}{)#7}]}
```

`\newmthargsty` ... to do!

- `\newmthargsty{mathrm}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$"
- `\newmthargsty{mathrm}[mathsf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$"
- `\newmthargsty{mathrm}[mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$"
- `\newmthargsty*{mathrm}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$"
- `\newmthargsty*{mathrm}[mathsf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$"
- `\newmthargsty*{mathrm}[mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$"

```
\DeclareRobustCommand{\newmthargsty}
  {\@ifstar{\@snewmthargsty}{\@newmthargsty}}
\DeclareRobustCommandx{\@newmthargsty}[2][2=]
  {\newmtharg[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewmthargsty}[2][2=]
  {\newmtharg*[\defval{#2}{#1}]}
```

`\newmthoarg` ... to do!

- `\newmthoarg[mathrm]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}\left(Arg^{Ex^{Ex}}\right)$"

- `\newmthoarg[mathsf]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}\left(Arg^{Ex^{Ex}}\right)$"
- `\newmthoarg[mathtt]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}\left(Arg^{Ex^{Ex}}\right)$"
- `\newmthoarg*[mathrm]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$"
- `\newmthoarg*[mathsf]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$"
- `\newmthoarg*[mathtt]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$"

```
\DeclareRobustCommand{\newmthoarg}
  {\@ifstar{\@snewmthoarg}{\@newmthoarg}}
\DeclareRobustCommandx{\@newmthoarg}[5][1=, 3=, 4=, 5=]
  {\newmtharg[#1]{#2}[#3][#4][]{#5}[]}
\DeclareRobustCommandx{\@snewmthoarg}[5][1=, 3=, 4=, 5=]
  {\newmtharg*[#1]{#2}[#3][#4][]{#5}[]}
```

`\newmthoargsty` ... to do!

- `\newmthoargsty{mathrm}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}\left(Arg^{Ex^{Ex}}\right)$"
- `\newmthoargsty{mathrm}[mathsf]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}\left(Arg^{Ex^{Ex}}\right)$"
- `\newmthoargsty{mathrm}[mathtt]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}\left(Arg^{Ex^{Ex}}\right)$"
- `\newmthoargsty*{mathrm}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$"
- `\newmthoargsty*{mathrm}[mathsf]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$"
- `\newmthoargsty*{mathrm}[mathtt]{Name}[sub][sup][Arg^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$"

```
\DeclareRobustCommand{\newmthoargsty}
  {\@ifstar{\@snewmthoargsty}{\@newmthoargsty}}
\DeclareRobustCommandx{\@newmthoargsty}[2][2=]
  {\newmthoarg[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewmthoargsty}[2][2=]
  {\newmthoarg*[\defval{#2}{#1}]}
```

`\newmthpar` ... to do!

- `\newmthpar[mathrm]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$"
- `\newmthpar[mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$"
- `\newmthpar[mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$"
- `\newmthpar*[mathrm]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$"
- `\newmthpar*[mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$"
- `\newmthpar*[mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$"

```
\DeclareRobustCommand{\newmthpar}
  {\@ifstar{\@snewmthpar}{\@newmthpar}}
\DeclareRobustCommandx{\@newmthpar}[7][1=, 3=, 4=, 5=, 7=]
  {\newmth[#1]{#2}[#3][#4][\argmid{#5\!\left[}{#6}{\right]\arglef{\!}{#7}}]}
\DeclareRobustCommandx{\@snewmthpar}[7][1=, 3=, 4=, 5=, 7=]
  {\newmth[#1]{#2}[#3][#4][\argmid{#5[}{#6}{]#7}]}
```

`\newmthparsty` ... to do!

- `\newmthparsty{mathrm}{Name}[sub][sup] [Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$"
- `\newmthparsty{mathrm}[mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$"
- `\newmthparsty{mathrm}[mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$"
- `\newmthparsty*{mathrm}{Name}[sub][sup] [Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathrm{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$"
- `\newmthparsty*{mathrm}[mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathsf{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$"
- `\newmthparsty*{mathrm}[mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = "$\mathtt{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$"

```
\DeclareRobustCommand{\newmthparsty}
  {\@ifstar{\@snewmthparsty}{\@newmthparsty}}
\DeclareRobustCommandx{\@newmthparsty}[2][2=]
  {\newmthpar[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewmthparsty}[2][2=]
  {\newmthpar*[\defval{#2}{#1}]}
```

`\newmthopar` ... to do!

- `\newmthopar[mathrm]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}\left[Par^{Ex^{Ex}}\right]$"
- `\newmthopar[mathsf]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}\left[Par^{Ex^{Ex}}\right]$"
- `\newmthopar[mathtt]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}\left[Par^{Ex^{Ex}}\right]$"
- `\newmthopar*[mathrm]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"
- `\newmthopar*[mathsf]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"
- `\newmthopar*[mathtt]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"

```
\DeclareRobustCommand{\newmthopar}
  {\@ifstar{\@snewmthopar}{\@newmthopar}}
\DeclareRobustCommandx{\@newmthopar}[5][1=, 3=, 4=, 5=]
  {\newmthpar[#1]{#2}[#3][#4][]{#5}[]}
\DeclareRobustCommandx{\@snewmthopar}[5][1=, 3=, 4=, 5=]
  {\newmthpar*[#1]{#2}[#3][#4][]{#5}[]}
```

`\newmthoparsty` ... to do!

- `\newmthoparsty{mathrm}{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}\left[Par^{Ex^{Ex}}\right]$"
- `\newmthoparsty{mathrm}[mathsf]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}\left[Par^{Ex^{Ex}}\right]$"
- `\newmthoparsty{mathrm}[mathtt]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}\left[Par^{Ex^{Ex}}\right]$"
- `\newmthoparsty*{mathrm}{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathrm{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"
- `\newmthoparsty*{mathrm}[mathsf]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathsf{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"
- `\newmthoparsty*{mathrm}[mathtt]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"

```
\DeclareRobustCommand{\newmthoparsty}
  {\@ifstar{\@snewmthoparsty}{\@newmthoparsty}}
\DeclareRobustCommandx{\@newmthoparsty}[2][2=]
  {\newmthopar[\defval{#2}{#1}]}
\DeclareRobustCommandx{\@snewmthoparsty}[2][2=]
  {\newmthopar*[\defval{#2}{#1}]}
```

`\mthsubsup` ... to do!

```
\DeclareRobustCommand{\mthsubsup}[2]
  {\empchk{#1}{_{#1}}\empchk{#2}{^{#2}}}

%%*************************************************************************%%
```

`\mth` ... to do!

- `\mth{Name}[sub][sup][Ext]` = "$Name_{sub}^{sup}Ext$"
- `\mth[mathbf]{Name}[sub][sup][Ext]` = "$\mathbf{Name}_{sub}^{sup}Ext$"
- `\mth[mathtt]{Name}[sub][sup][Ext]` = "$\mathtt{Name}_{sub}^{sup}Ext$"
- `\mth*{Name}[sub][sup][Ext]` = "$Name_{sub}^{sup}Ext$"
- `\mth*[mathbf]{Name}[sub][sup][Ext]` = "$\mathbf{N}ame_{sub}^{sup}Ext$"
- `\mth*[mathtt]{Name}[sub][sup][Ext]` = "$\mathtt{N}ame_{sub}^{sup}Ext$"

```
\DeclareRobustCommand{\mth}
  {\@ifstar{\newmthsty*{\mthsty}}{\newmthsty{\mthsty}}}
```

`\mtharg` ... to do!

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

```
\DeclareRobustCommand{\mtharg}
  {\@ifstar{\newmthargsty*{\mthsty}}{\newmthargsty{\mthsty}}}
```

`\mthoarg` ... to do!

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

```
\DeclareRobustCommand{\mthoarg}
  {\@ifstar{\newmthoargsty*{\mthsty}}{\newmthoargsty{\mthsty}}}
```

`\mthpar` ... to do!

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

```
\DeclareRobustCommand{\mthpar}
  {\@ifstar{\newmthparsty*{\mthsty}}{\newmthparsty{\mthsty}}}
```

`\mthopar` ... to do!

- `\mthopar{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$Name_{sub}^{sup}\Big[Par^{Ex^{Ex}}\Big]$"
- `\mthopar[mathbf]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathbf{Name}_{sub}^{sup}\Big[Par^{Ex^{Ex}}\Big]$"
- `\mthopar[mathtt]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}\Big[Par^{Ex^{Ex}}\Big]$"
- `\mthopar*{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$Name_{sub}^{sup}[Par^{Ex^{Ex}}]$"
- `\mthopar*[mathbf]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathbf{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"
- `\mthopar*[mathtt]{Name}[sub][sup][Par^{Ex^{Ex}}]` = "$\mathtt{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$"

```
\DeclareRobustCommand{\mthopar}
  {\@ifstar{\newmthoparsty*{\mthsty}}{\newmthoparsty{\mthsty}}}
```

`\mthsty` ... to do!

```
\def\mthsty
  {}

%%*************************************************************************%%
```

`\cmdmth` ... to do!

- \cmdmth{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
  \mthNewCmd{Name}[sub][sup][Ext] = $\texttt{Name}_{sub}^{sup}Ext$
  \mthNewCmd*{Name}[sub][sup][Ext] = $\texttt{N}ame_{sub}^{sup}Ext$

```
\DeclareRobustCommand{\cmdmth}[1]
  {\csdef{mth#1}%
    {\protect\@ifstar{\newmthsty*{mthsty#1}}{\newmthsty{mthsty#1}}}}
```

\cmdmtharg ... to do!

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

```
\DeclareRobustCommand{\cmdmtharg}[1]
  {\csdef{mtharg#1}%
    {\protect\@ifstar{\newmthargsty*{mthsty#1}}{\newmthargsty{mthsty#1}}}}
```

\cmdmthoarg ... to do!

- \cmdmthoarg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
  \mthoargNewCmd{Name}[sub][sup][Arg^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}\Big(Arg^{Ex^{Ex}}\Big)$
  \mthoargNewCmd*{Name}[sub][sup][Arg^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$

```
\DeclareRobustCommand{\cmdmthoarg}[1]
  {\csdef{mthoarg#1}%
    {\protect\@ifstar{\newmthoargsty*{mthsty#1}}{\newmthoargsty{mthsty#1}}}}
```

\cmdmthpar ... to do!

- \cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
  \mthparNewCmd{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1\Big[Par^{Ex^{Ex}}\Big]Ext2$
  \mthparNewCmd*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
\DeclareRobustCommand{\cmdmthpar}[1]
  {\csdef{mthpar#1}%
    {\protect\@ifstar{\newmthparsty*{mthsty#1}}{\newmthparsty{mthsty#1}}}}
```

\cmdmthopar ... to do!

- \cmdmthopar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
  \mthoparNewCmd{Name}[sub][sup][Par^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}\Big[Par^{Ex^{Ex}}\Big]$
  \mthoparNewCmd*{Name}[sub][sup][Par^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$

```
\DeclareRobustCommand{\cmdmthopar}[1]
  {\csdef{mthopar#1}%
    {\protect\@ifstar{\newmthoparsty*{mthsty#1}}{\newmthoparsty{mthsty#1}}}}
```

\cmdmthall ... to do!

- \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
  \mthNewCmd{Name}[sub][sup][Ext] = $\texttt{Name}_{sub}^{sup}Ext$
  \mthargNewCmd{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1\Big(Arg^{Ex^{Ex}}\Big)Ext2$
  \mthargNewCmd*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
  \mthoargNewCmd{Name}[sub][sup][Arg^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}\Big(Arg^{Ex^{Ex}}\Big)$
  \mthoargNewCmd*{Name}[sub][sup][Arg^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})$
  \mthparNewCmd{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1\Big[Par^{Ex^{Ex}}\Big]Ext2$
  \mthparNewCmd*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$
  \mthoparNewCmd{Name}[sub][sup][Par^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}\Big[Par^{Ex^{Ex}}\Big]$
  \mthoparNewCmd*{Name}[sub][sup][Par^{Ex^{Ex}}] = $\texttt{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$

```
\DeclareRobustCommand{\cmdmthall}[1]
  {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}

%%*************************************************************************%%
```

`\usrmth` ... to do!

- `\usrmth{cmdName}{Suf}{}`;
  `\cmdNameSuf` $= cmdName$
  `\cmdNameSuf*` $= cmdName$
  `\usrmth{cmdName}{Suf}{arg}`;
  `\cmdNameSuf{Arg^{Ex^{Ex}}}` $= cmdName\Big(Arg^{Ex^{Ex}}\Big)$
  `\cmdNameSuf*{Arg^{Ex^{Ex}}}` $= cmdName(Arg^{Ex^{Ex}})$
  `\usrmth{cmdName}{Suf}{par}`;
  `\cmdNameSuf{Par^{Ex^{Ex}}}` $= cmdName\Big[Par^{Ex^{Ex}}\Big]$
  `\cmdNameSuf*{Par^{Ex^{Ex}}}` $= cmdName[Par^{Ex^{Ex}}]$
- `\usrmth{cmdName}{Suf}{}[newName]`;
  `\cmdNameSuf` $= newName$
  `\cmdNameSuf*` $= newName$
  `\usrmth{cmdName}{Suf}{arg}[newName]`;
  `\cmdNameSuf{Arg^{Ex^{Ex}}}` $= newName\Big(Arg^{Ex^{Ex}}\Big)$
  `\cmdNameSuf*{Arg^{Ex^{Ex}}}` $= newName(Arg^{Ex^{Ex}})$
  `\usrmth{cmdName}{Suf}{par}[newName]`;
  `\cmdNameSuf{Par^{Ex^{Ex}}}` $= newName\Big[Par^{Ex^{Ex}}\Big]$
  `\cmdNameSuf*{Par^{Ex^{Ex}}}` $= newName[Par^{Ex^{Ex}}]$

```
\DeclareRobustCommandx{\usrmth}[4][4=]
  {\csdef{#1#2}%
    {\protect\@ifstar%
      {\csname mth#3\endcsname*{\defval{#4}{#1}}}%
      {\csname mth#3\endcsname{\defval{#4}{#1}}}}}
```

```
%%************************************************************************%%
```

`\usrmthlatlow` ... to do!

```
\DeclareRobustCommandx{\usrmthlatlow}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqoflatlow{#1#2}{mth#3}}
```

`\usrmthlatupp` ... to do!

```
\DeclareRobustCommandx{\usrmthlatupp}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqoflatupp{#1#2}{mth#3}}
```

`\usrmthlatlet` ... to do!

```
\DeclareRobustCommandx{\usrmthlatlet}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqoflatlet{#1#2}{mth#3}}
```

`\usrmthgrklow` ... to do!

```
\DeclareRobustCommandx{\usrmthgrklow}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqofgrklow{#1#2}{mth#3}}
```

`\usrmthgrkupp` ... to do!

```
\DeclareRobustCommandx{\usrmthgrkupp}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqofgrkupp{#1#2}{mth#3}}
```

`\usrmthgrklet` ... to do!

```
\DeclareRobustCommandx{\usrmthgrklet}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqofgrklet{#1#2}{mth#3}}
```

`\usrmthlow` ... to do!

```
\DeclareRobustCommandx{\usrmthlow}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqoflow{#1#2}{mth#3}}
```

`\usrmthupp` ... to do!

```
\DeclareRobustCommandx{\usrmthupp}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqofupp{#1#2}{mth#3}}
```

`\usrmthlet` ... to do!

```
\DeclareRobustCommandx{\usrmthlet}[4][4=]
  {\usrmth{#1}{#2}{#3}[#4]\seqoflet{#1#2}{mth#3}}

%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Text Macro Generators *****************************************************%%
%%*****************************************************************************%%
\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]` = $Name_{sub}^{sup}Ext1[Par]Ext2$

```
%% Style for Definitions
\cmdtxtall{def}
\DeclareRobustCommand{\txtstydef}{\normalfont\bfseries\em}
```

`\cmdtxtdef` ... to do!

- `\cmdtxtdef{cmdName}`;
  `\cmdName[sub][sub][ext]` = $cmdName_{sub}^{sub}ext$
- `\cmdtxtdef{cmdName}[newName]`;
  `\cmdName[sub][sub][ext]` = $newName_{sub}^{sub}ext$

```
\DeclareRobustCommandx{\cmdtxtdef}[2][2=]
  {\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]` = $newName_{sub}^{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdtxtargdef}[2][2=]
  {\usrtxt{#1}{}{argdef}[#2]}
```

`\cmdtxtoargdef` ... to do!

- `\cmdtxtoargdef{cmdName}`;
  `\cmdName[sub][sub][arg]` = $cmdName_{sub}^{sub}(arg)$
- `\cmdtxtoargdef{cmdName}[newName]`;
  `\cmdName[sub][sub][arg]` = $newName_{sub}^{sub}(arg)$

```
\DeclareRobustCommandx{\cmdtxtoargdef}[2][2=]
  {\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]` = $newName_{sub}^{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdtxtpardef}[2][2=]
  {\usrtxt{#1}{}{pardef}[#2]}
```

`\cmdtxtopardef` ... to do!

- `\cmdtxtopardef{cmdName}`;
  `\cmdName[sub][sub][par]` = $cmdName_{sub}^{sub}[par]$
- `\cmdtxtopardef{cmdName}[newName]`;
  `\cmdName[sub][sub][par]` = $newName_{sub}^{sub}[par]$

```
\DeclareRobustCommandx{\cmdtxtopardef}[2][2=]
  {\usrtxt{#1}{}{opardef}[#2]}
```

`\txtabr` ... to do!

...
- `\txtabr{Name}[sub][sup][Ext]` = $Name_{\text{sub}}^{\text{sup}}Ext$
- `\txtargabr{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $Name_{\text{sub}}^{\text{sup}}Ext1(Arg)Ext2$
- `\txtparabr{Name}[sub][sup][Ext1]{Par}[Ext2]` = $Name_{\text{sub}}^{\text{sup}}Ext1[Par]Ext2$

```
%% Style for Abbreviations
\cmdtxtall{abr}
\DeclareRobustCommand{\txtstyabr}{\em}
```

`\cmdtxtabr` ... to do!

- `\cmdtxtabr{cmdName}`;
  `\cmdName[sub][sub][ext]` = $cmdName_{\text{sub}}^{\text{sub}}ext$
- `\cmdtxtabr{cmdName}[newName]`;
  `\cmdName[sub][sub][ext]` = $newName_{\text{sub}}^{\text{sub}}ext$

```
\DeclareRobustCommandx{\cmdtxtabr}[2][2=]
  {\usrtxt{#1}{}{abr}[#2]}
```

`\cmdtxtargabr` ... to do!

- `\cmdtxtargabr{cmdName}`;
  `\cmdName[sub][sub][ext1]{arg}[ext2]` = $cmdName_{\text{sub}}^{\text{sub}}ext1(arg)ext2$
- `\cmdtxtargabr{cmdName}[newName]`;
  `\cmdName[sub][sub][ext1]{arg}[ext2]` = $newName_{\text{sub}}^{\text{sub}}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdtxtargabr}[2][2=]
  {\usrtxt{#1}{}{argabr}[#2]}
```

`\cmdtxtoargabr` ... to do!

- `\cmdtxtoargabr{cmdName}`;
  `\cmdName[sub][sub][arg]` = $cmdName_{\text{sub}}^{\text{sub}}(arg)$
- `\cmdtxtoargabr{cmdName}[newName]`;
  `\cmdName[sub][sub][arg]` = $newName_{\text{sub}}^{\text{sub}}(arg)$

```
\DeclareRobustCommandx{\cmdtxtoargabr}[2][2=]
  {\usrtxt{#1}{}{oargabr}[#2]}
```

`\cmdtxtparabr` ... to do!

- `\cmdtxtparabr{cmdName}`;
  `\cmdName[sub][sub][ext1]{par}[ext2]` = $cmdName_{\text{sub}}^{\text{sub}}ext1[par]ext2$
- `\cmdtxtparabr{cmdName}[newName]`;
  `\cmdName[sub][sub][ext1]{par}[ext2]` = $newName_{\text{sub}}^{\text{sub}}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdtxtparabr}[2][2=]
  {\usrtxt{#1}{}{parabr}[#2]}
```

`\cmdtxtoparabr` ... to do!

- `\cmdtxtoparabr{cmdName}`;
  `\cmdName[sub][sub][par]` = $cmdName_{\text{sub}}^{\text{sub}}[par]$
- `\cmdtxtoparabr{cmdName}[newName]`;
  `\cmdName[sub][sub][par]` = $newName_{\text{sub}}^{\text{sub}}[par]$

```
\DeclareRobustCommandx{\cmdtxtoparabr}[2][2=]
  {\usrtxt{#1}{}{oparabr}[#2]}

%%*************************************************************************%%
```

`\txtname` ... to do!

...
- `\txtname{Name}[sub][sup][Ext]` = $\textsc{Name}_{\text{SUB}}^{\text{SUP}}\textsc{Ext}$
- `\txtargname{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $\textsc{Name}_{\text{SUB}}^{\text{SUP}}\textsc{Ext1}(\textsc{Arg})\textsc{Ext2}$
- `\txtparname{Name}[sub][sup][Ext1]{Par}[Ext2]` = $\textsc{Name}_{\text{SUB}}^{\text{SUP}}\textsc{Ext1}[\textsc{Par}]\textsc{Ext2}$

```
%% Style for Names
\cmdtxtall{name}
\DeclareRobustCommand{\txtstyname}{\normalfont\mdseries\scshape\sffamily}
```

`\cmdtxtname` ... to do!

- `\cmdtxtname{cmdName}`;
  `\cmdName[sub][sub][ext]` = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext}$
- `\cmdtxtname{cmdName}[newName]`;
  `\cmdName[sub][sub][ext]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext}$

```
\DeclareRobustCommandx{\cmdtxtname}[2][2=]
  {\usrtxt{#1}{}{name}[#2]}
```

`\cmdtxtargname` ... to do!

- `\cmdtxtargname{cmdName}`;
  `\cmdName[sub][sub][ext1]{arg}[ext2]` = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}(\textsc{arg})\textsc{ext2}$
- `\cmdtxtargname{cmdName}[newName]`;
  `\cmdName[sub][sub][ext1]{arg}[ext2]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}(\textsc{arg})\textsc{ext2}$

```
\DeclareRobustCommandx{\cmdtxtargname}[2][2=]
  {\usrtxt{#1}{}{argname}[#2]}
```

`\cmdtxtoargname` ... to do!

- `\cmdtxtoargname{cmdName}`;
  `\cmdName[sub][sub][arg]` = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}(\textsc{arg})$
- `\cmdtxtoargname{cmdName}[newName]`;
  `\cmdName[sub][sub][arg]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}(\textsc{arg})$

```
\DeclareRobustCommandx{\cmdtxtoargname}[2][2=]
  {\usrtxt{#1}{}{oargname}[#2]}
```

`\cmdtxtparname` ... to do!

- `\cmdtxtparname{cmdName}`;
  `\cmdName[sub][sub][ext1]{par}[ext2]` = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}[\textsc{par}]\textsc{ext2}$
- `\cmdtxtparname{cmdName}[newName]`;
  `\cmdName[sub][sub][ext1]{par}[ext2]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}[\textsc{par}]\textsc{ext2}$

```
\DeclareRobustCommandx{\cmdtxtparname}[2][2=]
  {\usrtxt{#1}{}{parname}[#2]}
```

`\cmdtxtoparname` ... to do!

- `\cmdtxtoparname{cmdName}`;
  `\cmdName[sub][sub][par]` = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}[\textsc{par}]$
- `\cmdtxtoparname{cmdName}[newName]`;
  `\cmdName[sub][sub][par]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}[\textsc{par}]$

```
\DeclareRobustCommandx{\cmdtxtoparname}[2][2=]
  {\usrtxt{#1}{}{oparname}[#2]}
```

`\txtcom` ... to do!

...

- `\txtcom{Name}[sub][sup][Ext]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext}$
- `\txtargcom{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext1}(\textsc{Arg})\textsc{Ext2}$
- `\txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2]` = $\textsc{Name}^{\textsc{sup}}_{\textsc{sub}}\textsc{Ext1}[\textsc{Par}]\textsc{Ext2}$

```
%% Style for Complexities
\cmdtxtall{com}
\DeclareRobustCommand{\txtstycom}{\normalfont\mdseries\scshape\rmfamily}
```

`\cmdtxtcom` ... to do!

- `\cmdtxtcom{cmdName}`;
  `\cmdName[sub][sub][ext]` = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext}$
- `\cmdtxtcom{cmdName}[newName]`;
  `\cmdName[sub][sub][ext]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext}$

```
\DeclareRobustCommandx{\cmdtxtcom}[2][2=]
  {\usrtxt{#1}{}{com}[#2]}
```

`\cmdtxtargcom` ... to do!

- \cmdtxtargcom{cmdName};
  \cmdName[sub][sub][ext1]{arg}[ext2] = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}(\textsc{arg})\textsc{ext2}$
- \cmdtxtargcom{cmdName}[newName];
  \cmdName[sub][sub][ext1]{arg}[ext2] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}(\textsc{arg})\textsc{ext2}$

```
\DeclareRobustCommandx{\cmdtxtargcom}[2][2=]
  {\usrtxt{#1}{}{argcom}[#2]}
```

\cmdtxtoargcom ... to do!

- \cmdtxtoargcom{cmdName};
  \cmdName[sub][sub][arg] = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}(\textsc{arg})$
- \cmdtxtoargcom{cmdName}[newName];
  \cmdName[sub][sub][arg] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}(\textsc{arg})$

```
\DeclareRobustCommandx{\cmdtxtoargcom}[2][2=]
  {\usrtxt{#1}{}{oargcom}[#2]}
```

\cmdtxtparcom ... to do!

- \cmdtxtparcom{cmdName};
  \cmdName[sub][sub][ext1]{par}[ext2] = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}[\textsc{par}]\textsc{ext2}$
- \cmdtxtparcom{cmdName}[newName];
  \cmdName[sub][sub][ext1]{par}[ext2] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}[\textsc{par}]\textsc{ext2}$

```
\DeclareRobustCommandx{\cmdtxtparcom}[2][2=]
  {\usrtxt{#1}{}{parcom}[#2]}
```

\cmdtxtoparcom ... to do!

- \cmdtxtoparcom{cmdName};
  \cmdName[sub][sub][par] = $\textsc{cmdName}^{\textsc{sub}}_{\textsc{sub}}[\textsc{par}]$
- \cmdtxtoparcom{cmdName}[newName];
  \cmdName[sub][sub][par] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}[\textsc{par}]$

```
\DeclareRobustCommandx{\cmdtxtoparcom}[2][2=]
  {\usrtxt{#1}{}{oparcom}[#2]}

\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Math Macro Generators *****************************************************%%
%%*****************************************************************************%%
\ifmthgen@
```

\mthname ... to do!

...

- \mthname{NAME}[sub][sup][Ext] = $\mathcal{NAME}^{sup}_{sub}Ext$
- \mthargname{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}^{sup}_{sub}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargname*{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparname{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}^{sup}_{sub}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparname*{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Names
\cmdmthall{name}
\DeclareRobustCommand{\mthstyname}{\mathcal}
```

\AName ... to do!

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

```
\seqoflatupp{Name}{mthname}
```

\cmdmthname ... to do!

- \cmdmthname{CMDNAME};
  \CMDNAMEName[sub][sub][ext] = $\mathcal{CMDNAME}^{sub}_{sub}ext$

- `\cmdmthname{cmdName}[NEWNAME]`;
  `\cmdNameName[sub][sub][ext]` $= \mathcal{NEWNAME}^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthname}[2][2=]
  {\usrmth{#1}{Name}{name}[#2]}
```

`\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]` $= \mathcal{NEWNAME}^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargname}[2][2=]
  {\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]` $= \mathcal{NEWNAME}^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargname}[2][2=]
  {\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]` $= \mathcal{NEWNAME}^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparname}[2][2=]
  {\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]` $= \mathcal{NEWNAME}^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparname}[2][2=]
  {\usrmth{#1}{Name}{oparname}[#2]}
```

`\mthfam` ... to do!

...

- `\mthfam{NAME}[sub][sup][Ext]` $= \mathcal{NAME}^{sup}_{sub}Ext$
- `\mthargfam{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` $= \mathcal{NAME}^{sup}_{sub}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- `\mthargfam*{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` $= \mathcal{NAME}^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- `\mthparfam{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` $= \mathcal{NAME}^{sup}_{sub}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- `\mthparfam*{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` $= \mathcal{NAME}^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Families
\cmdmthall{fam}
\DeclareRobustCommand{\mthstyfam}{\mathscr}
```

`\AFam` ... to do!

... $\mathscr{A}, \mathscr{B}, \mathscr{C}, \mathscr{D}, \mathscr{E}, \mathscr{F}, \mathscr{G}, \mathscr{H}, \mathscr{I}, \mathscr{J}, \mathscr{K}, \mathscr{L}, \mathscr{M}, \mathscr{N}, \mathscr{O}, \mathscr{P}, \mathscr{Q}, \mathscr{R}, \mathscr{S}, \mathscr{T}, \mathscr{U}, \mathscr{V}, \mathscr{W}, \mathscr{X}, \mathscr{Y}, \mathscr{Z}$

```
\seqoflatupp{Fam}{mthfam}
```

`\cmdmthfam` ... to do!

- `\cmdmthfam{CMDNAME}`;
  `\CMDNAMEFam[sub][sub][ext]` $= \mathscr{CMDNAME}^{sub}_{sub}ext$
- `\cmdmthfam{cmdName}[NEWNAME]`;
  `\cmdNameFam[sub][sub][ext]` $= \mathscr{NEWNAME}^{sub}_{sub}ext$

```
612 \DeclareRobustCommandx{\cmdmthfam}[2][2=]
613   {\usrmth{#1}{Fam}{fam}[#2]}
```

\cmdmthargfam ... to do!

- \cmdmthargfam{CMDNAME};
  \CMDNAMEFam[sub][sub][ext1]{arg}[ext2] = $\mathscr{CMDNAME}_{sub}^{sub}ext1(arg)ext2$
- \cmdmthargfam{cmdName}[NEWNAME];
  \cmdNameFam[sub][sub][ext1]{arg}[ext2] = $\mathscr{NEWNAME}_{sub}^{sub}ext1(arg)ext2$

```
614 \DeclareRobustCommandx{\cmdmthargfam}[2][2=]
615   {\usrmth{#1}{Fam}{argfam}[#2]}
```

\cmdmthoargfam ... to do!

- \cmdmthoargfam{CMDNAME};
  \CMDNAMEFam[sub][sub][arg] = $\mathscr{CMDNAME}_{sub}^{sub}(arg)$
- \cmdmthoargfam{cmdFam}[NEWNAME];
  \cmdFamFam[sub][sub][arg] = $\mathscr{NEWNAME}_{sub}^{sub}(arg)$

```
616 \DeclareRobustCommandx{\cmdmthoargfam}[2][2=]
617   {\usrmth{#1}{Fam}{oargfam}[#2]}
```

\cmdmthparfam ... to do!

- \cmdmthparfam{CMDNAME};
  \CMDNAMEFam[sub][sub][ext1]{par}[ext2] = $\mathscr{CMDNAME}_{sub}^{sub}ext1[par]ext2$
- \cmdmthparfam{cmdName}[NEWNAME];
  \cmdNameFam[sub][sub][ext1]{par}[ext2] = $\mathscr{NEWNAME}_{sub}^{sub}ext1[par]ext2$

```
618 \DeclareRobustCommandx{\cmdmthparfam}[2][2=]
619   {\usrmth{#1}{Fam}{parfam}[#2]}
```

\cmdmthoparfam ... to do!

- \cmdmthoparfam{CMDNAME};
  \CMDNAMEFam[sub][sub][par] = $\mathscr{CMDNAME}_{sub}^{sub}[par]$
- \cmdmthoparfam{cmdFam}[NEWNAME];
  \cmdFamFam[sub][sub][par] = $\mathscr{NEWNAME}_{sub}^{sub}[par]$

```
620 \DeclareRobustCommandx{\cmdmthoparfam}[2][2=]
621   {\usrmth{#1}{Fam}{oparfam}[#2]}
```

\mthcls ... to do!

...

- \mthcls{NAME}[sub][sup][Ext] = $\mathcal{NAME}_{sub}^{sup}Ext$
- \mthargcls{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargcls*{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparcls{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparcls*{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathcal{NAME}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
622 %% Style for Classes
623 \cmdmthall{cls}
624 \DeclareRobustCommand{\mthstycls}{\matheus}
```

\ACls ... to do!

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

```
625 \seqoflatupp{Cls}{mthcls}
```

\cmdmthcls ... to do!

- \cmdmthcls{CMDNAME};
  \CMDNAMECls[sub][sub][ext] = $\mathcal{CMDNAME}_{sub}^{sub}ext$
- \cmdmthcls{cmdName}[NEWNAME];
  \cmdNameCls[sub][sub][ext] = $\mathcal{NEWNAME}_{sub}^{sub}ext$

```
626 \DeclareRobustCommandx{\cmdmthcls}[2][2=]
627   {\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] = $\mathcal{NEWNAME}^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargcls}[2][2=]
  {\usrmth{#1}{Cls}{argcls}[#2]}
```

\cmdmthoargcls ... to do!

- \cmdmthoargcls{CMDNAME};
  \CMDNAMECls[sub][sub][arg] = $\mathcal{CMDNAME}^{sub}_{sub}(arg)$
- \cmdmthoargcls{cmdCls}[NEWNAME];
  \cmdClsCls[sub][sub][arg] = $\mathcal{NEWNAME}^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargcls}[2][2=]
  {\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] = $\mathcal{NEWNAME}^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparcls}[2][2=]
  {\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] = $\mathcal{NEWNAME}^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparcls}[2][2=]
  {\usrmth{#1}{Cls}{oparcls}[#2]}
```

\mthsig ... to do!

...

- \mthsig{Name}[sub][sup][Ext] = $\mathcal{Name}^{sup}_{sub}Ext$
- \mthargsig{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathcal{Name}^{sup}_{sub}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargsig*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathcal{Name}^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparsig{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathcal{Name}^{sup}_{sub}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparsig*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathcal{Name}^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Signatures
\cmdmthall{sig}
\DeclareRobustCommand{\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
$\mathcal{A}$, $\mathcal{B}$, $\mathcal{C}$, $\mathcal{D}$, $\mathcal{E}$, $\mathcal{F}$, $\mathcal{G}$, $\mathcal{H}$, $\mathcal{I}$, $\mathcal{J}$, $\mathcal{K}$, $\mathcal{L}$, $\mathcal{M}$, $\mathcal{N}$, $\mathcal{O}$, $\mathcal{P}$, $\mathcal{Q}$, $\mathcal{R}$, $\mathcal{S}$, $\mathcal{T}$, $\mathcal{U}$, $\mathcal{V}$, $\mathcal{W}$, $\mathcal{X}$, $\mathcal{Y}$, $\mathcal{Z}$
α, β, γ, δ, ϵ, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, σ, ς, τ, υ, ϕ, φ, χ, ψ, ω

```
\seqoflatlet{Sig}{mthsig}\seqofgrklow{Sig}{mthsig}
```

\cmdmthsig ... to do!

- \cmdmthsig{cmdName};
  \cmdNameSig[sub][sub][ext] = $\mathit{cmd}\mathcal{Name}^{sub}_{sub}ext$
- \cmdmthsig{cmdName}[NewName];
  \cmdNameSig[sub][sub][ext] = $\mathcal{NewName}^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthsig}[2][2=]
  {\usrmth{#1}{Sig}{sig}[#2]}
```

\cmdmthargsig ... to do!

- \cmdmthargsig{cmdName};
  \cmdNameSig[sub][sub][ext1]{arg}[ext2] = $\mathit{cmdName}^{sub}_{sub}ext1(arg)ext2$
- \cmdmthargsig{cmdName}[NewName];
  \cmdNameSig[sub][sub][ext1]{arg}[ext2] = $\mathit{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargsig}[2][2=]
  {\usrmth{#1}{Sig}{argsig}[#2]}
```

\cmdmthoargsig ... to do!

- \cmdmthoargsig{cmdName};
  \cmdNameSig[sub][sub][arg] = $\mathit{cmdName}^{sub}_{sub}(arg)$
- \cmdmthoargsig{cmdSig}[NewName];
  \cmdSigSig[sub][sub][arg] = $\mathit{NewName}^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargsig}[2][2=]
  {\usrmth{#1}{Sig}{oargsig}[#2]}
```

\cmdmthparsig ... to do!

- \cmdmthparsig{cmdName};
  \cmdNameSig[sub][sub][ext1]{par}[ext2] = $\mathit{cmdName}^{sub}_{sub}ext1[par]ext2$
- \cmdmthparsig{cmdName}[NewName];
  \cmdNameSig[sub][sub][ext1]{par}[ext2] = $\mathit{NewName}^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparsig}[2][2=]
  {\usrmth{#1}{Sig}{parsig}[#2]}
```

\cmdmthoparsig ... to do!

- \cmdmthoparsig{cmdName};
  \cmdNameSig[sub][sub][par] = $\mathit{cmdName}^{sub}_{sub}[par]$
- \cmdmthoparsig{cmdSig}[NewName];
  \cmdSigSig[sub][sub][par] = $\mathit{NewName}^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparsig}[2][2=]
  {\usrmth{#1}{Sig}{oparsig}[#2]}
```

\mthstr ... to do!

...

- \mthstr{Name}[sub][sup][Ext] = $\mathfrak{Name}^{sup}_{sub}Ext$
- \mthargstr{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathfrak{Name}^{sup}_{sub}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargstr*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathfrak{Name}^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparstr{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathfrak{Name}^{sup}_{sub}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparstr*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathfrak{Name}^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Structures
\cmdmthall{str}
\DeclareRobustCommand{\mthstystr}{\mathfrak}
```

\aStr ... to do!

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

```
\seqoflatlet{Str}{mthstr}\seqofgrklow{Str}{mthstr}
```

\cmdmthstr ... to do!

- \cmdmthstr{cmdName};
  \cmdNameStr[sub][sub][ext] = $\mathfrak{cmdName}^{sub}_{sub}ext$
- \cmdmthstr{cmdName}[NewName];
  \cmdNameStr[sub][sub][ext] = $\mathfrak{NewName}^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthstr}[2][2=]
  {\usrmth{#1}{Str}{str}[#2]}
```

\cmdmthargstr ... to do!

- \cmdmthargstr{cmdName};
  \cmdNameStr[sub][sub][ext1]{arg}[ext2] = $\mathfrak{cmdName}^{sub}_{sub}ext1(arg)ext2$
- \cmdmthargstr{cmdName}[NewName];
  \cmdNameStr[sub][sub][ext1]{arg}[ext2] = $\mathfrak{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargstr}[2][2=]
  {\usrmth{#1}{Str}{argstr}[#2]}
```

\cmdmthoargstr ... to do!

- \cmdmthoargstr{cmdName};
  \cmdNameStr[sub][sub][arg] = $\mathfrak{cmdName}^{sub}_{sub}(arg)$
- \cmdmthoargstr{cmdStr}[NewName];
  \cmdStrStr[sub][sub][arg] = $\mathfrak{NewName}^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargstr}[2][2=]
  {\usrmth{#1}{Str}{oargstr}[#2]}
```

\cmdmthparstr ... to do!

- \cmdmthparstr{cmdName};
  \cmdNameStr[sub][sub][ext1]{par}[ext2] = $\mathfrak{cmdName}^{sub}_{sub}ext1[par]ext2$
- \cmdmthparstr{cmdName}[NewName];
  \cmdNameStr[sub][sub][ext1]{par}[ext2] = $\mathfrak{NewName}^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparstr}[2][2=]
  {\usrmth{#1}{Str}{parstr}[#2]}
```

\cmdmthoparstr ... to do!

- \cmdmthoparstr{cmdName};
  \cmdNameStr[sub][sub][par] = $\mathfrak{cmdName}^{sub}_{sub}[par]$
- \cmdmthoparstr{cmdStr}[NewName];
  \cmdStrStr[sub][sub][par] = $\mathfrak{NewName}^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparstr}[2][2=]
  {\usrmth{#1}{Str}{oparstr}[#2]}
```

\mthset ... to do!

...

- \mthset{Name}[sub][sup][Ext] = $\mathrm{Name}^{sup}_{sub}Ext$
- \mthargset{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathrm{Name}^{sup}_{sub}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargset*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathrm{Name}^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparset{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathrm{Name}^{sup}_{sub}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparset*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathrm{Name}^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Sets
\cmdmthall{set}
\DeclareRobustCommand{\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
α, β, γ, δ, ϵ, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, σ, ς, τ, υ, ϕ, φ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, $\varTheta$, I, K, K, Λ, M, N, Ξ, O, Π, $\varPi$, P, P, Σ, $\varSigma$, T, Υ, Φ, $\varPhi$, X, Ψ, Ω

```
\seqoflet{Set}{mthset}
```

\cmdmthset ... to do!

- \cmdmthset{cmdName};
  \cmdNameSet[sub][sub][ext] = $\mathrm{cmdName}^{sub}_{sub}ext$
- \cmdmthset{cmdName}[NewName];
  \cmdNameSet[sub][sub][ext] = $\mathrm{NewName}^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthset}[2][2=]
  {\usrmth{#1}{Set}{set}[#2]}
```

`\cmdmthargset` ... to do!

- `\cmdmthargset{cmdName}`;
  `\cmdNameSet[sub][sub][ext1]{arg}[ext2]` = $\mathrm{cmdName}_{sub}^{sub}ext1(arg)ext2$
- `\cmdmthargset{cmdName}[NewName]`;
  `\cmdNameSet[sub][sub][ext1]{arg}[ext2]` = $\mathrm{NewName}_{sub}^{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargset}[2][2=]
  {\usrmth{#1}{Set}{argset}[#2]}
```

`\cmdmthoargset` ... to do!

- `\cmdmthoargset{cmdName}`;
  `\cmdNameSet[sub][sub][arg]` = $\mathrm{cmdName}_{sub}^{sub}(arg)$
- `\cmdmthoargset{cmdSet}[NewName]`;
  `\cmdSetSet[sub][sub][arg]` = $\mathrm{NewName}_{sub}^{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargset}[2][2=]
  {\usrmth{#1}{Set}{oargset}[#2]}
```

`\cmdmthparset` ... to do!

- `\cmdmthparset{cmdName}`;
  `\cmdNameSet[sub][sub][ext1]{par}[ext2]` = $\mathrm{cmdName}_{sub}^{sub}ext1[par]ext2$
- `\cmdmthparset{cmdName}[NewName]`;
  `\cmdNameSet[sub][sub][ext1]{par}[ext2]` = $\mathrm{NewName}_{sub}^{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparset}[2][2=]
  {\usrmth{#1}{Set}{parset}[#2]}
```

`\cmdmthoparset` ... to do!

- `\cmdmthoparset{cmdName}`;
  `\cmdNameSet[sub][sub][par]` = $\mathrm{cmdName}_{sub}^{sub}[par]$
- `\cmdmthoparset{cmdSet}[NewName]`;
  `\cmdSetSet[sub][sub][par]` = $\mathrm{NewName}_{sub}^{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparset}[2][2=]
  {\usrmth{#1}{Set}{oparset}[#2]}
```

`\cmdmthsetext` ... to do!

```
\DeclareRobustCommandx{\cmdmthsetext}[3][2=, 3=]
  {\cmdmthset{#1}[#2]\caselower[q]{#1}%
  \usrmthlet{\thestring}{Sym}{sym}
    [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}]%
  \usrmthlet{\thestring}{Elm}{elm}
    [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}]}
```

`\mthrel` ... to do!

...

- `\mthrel{Name}[sub][sup][Ext]` = $Name_{sub}^{sup}Ext$
- `\mthargrel{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- `\mthargrel*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
- `\mthparrel{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- `\mthparrel*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Relations
\cmdmthall{rel}
\DeclareRobustCommand{\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, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, 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

```
\seqoflet{Rel}{mthrel}
```

`\cmdmthrel` ... to do!

- `\cmdmthrel{cmdName}`;
  `\cmdNameRel[sub][sub][ext]` = $cmdName_{sub}^{sub}ext$
- `\cmdmthrel{cmdName}[NewName]`;
  `\cmdNameRel[sub][sub][ext]` = $NewName_{sub}^{sub}ext$

```
\DeclareRobustCommandx{\cmdmthrel}[2][2=]
  {\usrmth{#1}{Rel}{rel}[#2]}
```

`\cmdmthargrel` ... to do!

- `\cmdmthargrel{cmdName}`;
  `\cmdNameRel[sub][sub][ext1]{arg}[ext2]` = $cmdName_{sub}^{sub}ext1(arg)ext2$
- `\cmdmthargrel{cmdName}[NewName]`;
  `\cmdNameRel[sub][sub][ext1]{arg}[ext2]` = $NewName_{sub}^{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargrel}[2][2=]
  {\usrmth{#1}{Rel}{argrel}[#2]}
```

`\cmdmthoargrel` ... to do!

- `\cmdmthoargrel{cmdName}`;
  `\cmdNameRel[sub][sub][arg]` = $cmdName_{sub}^{sub}(arg)$
- `\cmdmthoargrel{cmdRel}[NewName]`;
  `\cmdRelRel[sub][sub][arg]` = $NewName_{sub}^{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargrel}[2][2=]
  {\usrmth{#1}{Rel}{oargrel}[#2]}
```

`\cmdmthparrel` ... to do!

- `\cmdmthparrel{cmdName}`;
  `\cmdNameRel[sub][sub][ext1]{par}[ext2]` = $cmdName_{sub}^{sub}ext1[par]ext2$
- `\cmdmthparrel{cmdName}[NewName]`;
  `\cmdNameRel[sub][sub][ext1]{par}[ext2]` = $NewName_{sub}^{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparrel}[2][2=]
  {\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]` = $NewName_{sub}^{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparrel}[2][2=]
  {\usrmth{#1}{Rel}{oparrel}[#2]}
```

`\mthfun` ... to do!

...

- `\mthfun{Name}[sub][sup][Ext]` = $\mathsf{Name}_{sub}^{sup}Ext$
- `\mthargfun{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $\mathsf{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- `\mthargfun*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $\mathsf{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
- `\mthparfun{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $\mathsf{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- `\mthparfun*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $\mathsf{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Functions
\cmdmthall{fun}
\DeclareRobustCommand{\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
α, β, γ, δ, ϵ, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, σ, ς, τ, υ, ϕ, φ, χ, ψ, ω
A, B, $\mathsf{\Gamma}$, $\mathsf{\Delta}$, E, E, Z, H, $\mathsf{\Theta}$, $\mathit{\Theta}$, I, K, K, $\mathsf{\Lambda}$, M, N, $\mathsf{\Xi}$, O, $\mathsf{\Pi}$, $\mathit{\Pi}$, P, P, $\mathsf{\Sigma}$, $\mathit{\Sigma}$, T, $\mathsf{\Upsilon}$, $\mathsf{\Phi}$, $\mathit{\Phi}$, X, $\mathsf{\Psi}$, $\mathsf{\Omega}$

```
\seqoflet{Fun}{mthfun}
```

\cmdmthfun ... to do!

- \cmdmthfun{cmdName};
  \cmdNameFun[sub][sub][ext] = cmdName$_{sub}^{sub}ext$
- \cmdmthfun{cmdName}[NewName];
  \cmdNameFun[sub][sub][ext] = NewName$_{sub}^{sub}ext$

```
\DeclareRobustCommandx{\cmdmthfun}[2][2=]
  {\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$_{sub}^{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargfun}[2][2=]
  {\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$_{sub}^{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargfun}[2][2=]
  {\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$_{sub}^{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparfun}[2][2=]
  {\usrmth{#1}{Fun}{parfun}[#2]}
```

\cmdmthoparfun ... to do!

- \cmdmthoparfun{cmdName};
  \cmdNameFun[sub][sub][par] = cmdName$_{sub}^{sub}[par]$
- \cmdmthoparfun{cmdFun}[NewName];
  \cmdFunFun[sub][sub][par] = NewName$_{sub}^{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparfun}[2][2=]
  {\usrmth{#1}{Fun}{oparfun}[#2]}
```

\mthsym ... to do!

...

- \mthsym{Name}[sub][sup][Ext] = Name$_{sub}^{sup}Ext$
- \mthargsym{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name$_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargsym*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name$_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparsym{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name$_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparsym*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name$_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Symbols
\cmdmthall{sym}
\DeclareRobustCommand{\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
α, β, γ, δ, ϵ, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, σ, ς, τ, υ, ϕ, φ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, $\mathit{\Theta}$, I, K, K, Λ, M, N, Ξ, O, Π, $\mathit{\Pi}$, P, P, Σ, $\mathit{\Sigma}$, T, T, Φ, $\mathit{\Phi}$, X, Ψ, Ω

```
\seqoflet{Sym}{mthsym}
```

`\cmdmthsym` ... to do!

- `\cmdmthsym{cmdName}`;
  `\cmdNameSym[sub][sub][ext]` = $\texttt{cmdName}_{sub}^{sub}ext$
- `\cmdmthsym{cmdName}[NewName]`;
  `\cmdNameSym[sub][sub][ext]` = $\texttt{NewName}_{sub}^{sub}ext$

```
\DeclareRobustCommandx{\cmdmthsym}[2][2=]
  {\usrmth{#1}{Sym}{sym}[#2]}
```

`\cmdmthargsym` ... to do!

- `\cmdmthargsym{cmdName}`;
  `\cmdNameSym[sub][sub][ext1]{arg}[ext2]` = $\texttt{cmdName}_{sub}^{sub}ext1(arg)ext2$
- `\cmdmthargsym{cmdName}[NewName]`;
  `\cmdNameSym[sub][sub][ext1]{arg}[ext2]` = $\texttt{NewName}_{sub}^{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargsym}[2][2=]
  {\usrmth{#1}{Sym}{argsym}[#2]}
```

`\cmdmthoargsym` ... to do!

- `\cmdmthoargsym{cmdName}`;
  `\cmdNameSym[sub][sub][arg]` = $\texttt{cmdName}_{sub}^{sub}(arg)$
- `\cmdmthoargsym{cmdSym}[NewName]`;
  `\cmdSymSym[sub][sub][arg]` = $\texttt{NewName}_{sub}^{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargsym}[2][2=]
  {\usrmth{#1}{Sym}{oargsym}[#2]}
```

`\cmdmthparsym` ... to do!

- `\cmdmthparsym{cmdName}`;
  `\cmdNameSym[sub][sub][ext1]{par}[ext2]` = $\texttt{cmdName}_{sub}^{sub}ext1[par]ext2$
- `\cmdmthparsym{cmdName}[NewName]`;
  `\cmdNameSym[sub][sub][ext1]{par}[ext2]` = $\texttt{NewName}_{sub}^{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparsym}[2][2=]
  {\usrmth{#1}{Sym}{parsym}[#2]}
```

`\cmdmthoparsym` ... to do!

- `\cmdmthoparsym{cmdName}`;
  `\cmdNameSym[sub][sub][par]` = $\texttt{cmdName}_{sub}^{sub}[par]$
- `\cmdmthoparsym{cmdSym}[NewName]`;
  `\cmdSymSym[sub][sub][par]` = $\texttt{NewName}_{sub}^{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparsym}[2][2=]
  {\usrmth{#1}{Sym}{oparsym}[#2]}
```

`\mthelm` ... to do!

...

- `\mthelm{Name}[sub][sup][Ext]` = $Name_{sub}^{sup}Ext$
- `\mthargelm{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- `\mthargelm*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
- `\mthparelm{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- `\mthparelm*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Elements
\cmdmthall{elm}
\DeclareRobustCommand{\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, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, 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

```
\seqoflet{Elm}{mthelm}
```

`\cmdmthelm` ... to do!

- `\cmdmthelm{cmdName}`;
  `\cmdNameElm[sub][sub][ext]` = $cmdName^{sub}_{sub}ext$
- `\cmdmthelm{cmdName}[NewName]`;
  `\cmdNameElm[sub][sub][ext]` = $NewName^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthelm}[2][2=]
  {\usrmth{#1}{Elm}{elm}[#2]}
```

`\cmdmthargelm` ... to do!

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

```
\DeclareRobustCommandx{\cmdmthargelm}[2][2=]
  {\usrmth{#1}{Elm}{argelm}[#2]}
```

`\cmdmthoargelm` ... to do!

- `\cmdmthoargelm{cmdName}`;
  `\cmdNameElm[sub][sub][arg]` = $cmdName^{sub}_{sub}(arg)$
- `\cmdmthoargelm{cmdElm}[NewName]`;
  `\cmdElmElm[sub][sub][arg]` = $NewName^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargelm}[2][2=]
  {\usrmth{#1}{Elm}{oargelm}[#2]}
```

`\cmdmthparelm` ... to do!

- `\cmdmthparelm{cmdName}`;
  `\cmdNameElm[sub][sub][ext1]{par}[ext2]` = $cmdName^{sub}_{sub}ext1[par]ext2$
- `\cmdmthparelm{cmdName}[NewName]`;
  `\cmdNameElm[sub][sub][ext1]{par}[ext2]` = $NewName^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparelm}[2][2=]
  {\usrmth{#1}{Elm}{parelm}[#2]}
```

`\cmdmthoparelm` ... to do!

- `\cmdmthoparelm{cmdName}`;
  `\cmdNameElm[sub][sub][par]` = $cmdName^{sub}_{sub}[par]$
- `\cmdmthoparelm{cmdElm}[NewName]`;
  `\cmdElmElm[sub][sub][par]` = $NewName^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparelm}[2][2=]
  {\usrmth{#1}{Elm}{oparelm}[#2]}

%%*************************************************************************%%
```

`\cmdmthsymelm` ... to do!

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

```
\DeclareRobustCommandx{\cmdmthsymelm}[2][2=]
  {\cmdmthsym{#1}[#2]%
   \cmdmthelm{#1}[#2]}
```

`\cmdmthargsymelm` ... to do!

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

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

```
\DeclareRobustCommandx{\cmdmthargsymelm}[2][2=]
  {\cmdmthargsym{#1}[#2]%
   \cmdmthargelm{#1}[#2]}
```

\cmdmthoargsymelm ... to do!

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

```
\DeclareRobustCommandx{\cmdmthoargsymelm}[2][2=]
  {\cmdmthoargsym{#1}[#2]%
   \cmdmthoargelm{#1}[#2]}
```

\cmdmthparsymelm ... to do!

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

```
\DeclareRobustCommandx{\cmdmthparsymelm}[2][2=]
  {\cmdmthparsym{#1}[#2]%
   \cmdmthparelm{#1}[#2]}
```

\cmdmthoparsymelm ... to do!

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

```
\DeclareRobustCommandx{\cmdmthoparsymelm}[2][2=]
  {\cmdmthoparsym{#1}[#2]%
   \cmdmthoparelm{#1}[#2]}

%%*****************************************************************************%%
```

\mthluop ... to do!

...

- \mthluop{\oplus}[sub][sup][Ext] = $\oplus^{sup}_{sub}\,Ext$
- \mthlbop{\oplus}[sub][sup][Ext] = $\oplus^{sup}_{sub}Ext$

```
%% Style for \LaTex Operators
\cmdmth{luop}
\DeclareRobustCommand{\mthstyluop}[1]{\textstyle\mathop{#1}}
\cmdmth{lbop}
\DeclareRobustCommand{\mthstylbop}[1]{\textstyle\mathbin{#1}}
```

\cmdmthluop ... to do!

...

- \cmdmthluop{cmdName};
  \cmdNameUOp[sub][sub][ext] = $cmdName^{sub}_{sub}\,ext$
- \cmdmthluop{cmdName}[\oplus];
  \cmdNameUOp[sub][sub][ext] = $\oplus^{sub}_{sub}\,ext$
- \cmdmthlbop{cmdName};
  \cmdNameBOp[sub][sub][ext] = $cmdName^{sub}_{sub}ext$

- `\cmdmthlbop{cmdName}[\oplus]`;
  `\cmdNameBOp[sub][sub][ext]` $= \oplus_{sub}^{sub} ext$

```
\DeclareRobustCommandx{\cmdmthluop}[2][2=]
  {\usrmth{#1}{UOp}{luop}[#2]}
\DeclareRobustCommandx{\cmdmthlbop}[2][2=]
  {\usrmth{#1}{BOp}{lbop}[#2]}
```

`\mthlrel` ... to do!

- `\mthlrel{\preceq}[sub][sup][Ext]` $= \preceq_{sub}^{sup} Ext$

```
%% Style for \LaTex Relations
\cmdmth{lrel}
\DeclareRobustCommand{\mthstylrel}{\mathrel}
```

`\cmdmthlrel` ... to do!

- `\cmdmthlrel{cmdName}`;
  `\cmdNameRel[sub][sub][ext]` $= cmdName_{sub}^{sub}\, ext$
- `\cmdmthlrel{cmdName}[\preceq]`;
  `\cmdNameRel[sub][sub][ext]` $= \preceq_{sub}^{sub} ext$

```
\DeclareRobustCommandx{\cmdmthlrel}[2][2=]
  {\usrmth{#1}{Rel}{lrel}[#2]}

%%*************************************************************************%%
```

`\mthsnt` ... to do!

`...`

- `\mthsnt{Name}[sub][sup][Ext]` $= \mathsf{Name}_{sub}^{sup} Ext$
- `\mthargsnt{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` $= \mathsf{Name}_{sub}^{sup} Ext1\Big(Arg^{Ex^{Ex}}\Big) Ext2$
- `\mthargsnt*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` $= \mathsf{Name}_{sub}^{sup} Ext1(Arg^{Ex^{Ex}}) Ext2$
- `\mthparsnt{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` $= \mathsf{Name}_{sub}^{sup} Ext1\Big[Par^{Ex^{Ex}}\Big] Ext2$
- `\mthparsnt*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` $= \mathsf{Name}_{sub}^{sup} Ext1[Par^{Ex^{Ex}}] Ext2$

```
%% Style for Sentences
\cmdmthall{snt}
\DeclareRobustCommand{\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
α, β, γ, δ, ϵ, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, σ, ς, τ, υ, ϕ, φ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, $\varTheta$, I, K, K, Λ, M, N, Ξ, O, Π, $\varPi$, P, P, Σ, $\varSigma$, T, ϒ, Φ, $\varPhi$, X, Ψ, Ω

```
\seqoflet{Snt}{mthsnt}
```

`\cmdmthsnt` ... to do!

- `\cmdmthsnt{cmdName}`;
  `\cmdNameSnt[sub][sub][ext]` $= \mathsf{cmdName}_{sub}^{sub} ext$
- `\cmdmthsnt{cmdName}[NewName]`;
  `\cmdNameSnt[sub][sub][ext]` $= \mathsf{NewName}_{sub}^{sub} ext$

```
\DeclareRobustCommandx{\cmdmthsnt}[2][2=]
  {\usrmth{#1}{Snt}{snt}[#2]}
```

`\cmdmthargsnt` ... to do!

- `\cmdmthargsnt{cmdName}`;
  `\cmdNameSnt[sub][sub][ext1]{arg}[ext2]` $= \mathsf{cmdName}_{sub}^{sub} ext1(arg) ext2$
- `\cmdmthargsnt{cmdName}[NewName]`;
  `\cmdNameSnt[sub][sub][ext1]{arg}[ext2]` $= \mathsf{NewName}_{sub}^{sub} ext1(arg) ext2$

```
\DeclareRobustCommandx{\cmdmthargsnt}[2][2=]
  {\usrmth{#1}{Snt}{argsnt}[#2]}
```

`\cmdmthoargsnt` ... to do!

- `\cmdmthoargsnt{cmdName}`;
  `\cmdNameSnt[sub][sub][arg]` = $\mathsf{cmdName}^{sub}_{sub}(arg)$
- `\cmdmthoargsnt{cmdName}[NewName]`;
  `\cmdNameSnt[sub][sub][arg]` = $\mathsf{NewName}^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargsnt}[2][2=]
  {\usrmth{#1}{Snt}{oargsnt}[#2]}
```

`\cmdmthparsnt` ... to do!

- `\cmdmthparsnt{cmdName}`;
  `\cmdNameSnt[sub][sub][ext1]{par}[ext2]` = $\mathsf{cmdName}^{sub}_{sub}ext1[par]ext2$
- `\cmdmthparsnt{cmdName}[NewName]`;
  `\cmdNameSnt[sub][sub][ext1]{par}[ext2]` = $\mathsf{NewName}^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparsnt}[2][2=]
  {\usrmth{#1}{Snt}{parsnt}[#2]}
```

`\cmdmthoparsnt` ... to do!

- `\cmdmthoparsnt{cmdName}`;
  `\cmdNameSnt[sub][sub][par]` = $\mathsf{cmdName}^{sub}_{sub}[par]$
- `\cmdmthoparsnt{cmdName}[NewName]`;
  `\cmdNameSnt[sub][sub][par]` = $\mathsf{NewName}^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparsnt}[2][2=]
  {\usrmth{#1}{Snt}{oparsnt}[#2]}
```

`\mthfrm` ... to do!

`...`

- `\mthfrm{Name}[sub][sup][Ext]` = $Name^{sup}_{sub}Ext$
- `\mthargfrm{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $Name^{sup}_{sub}Ext1\Big(Arg^{Ex^{Ex}}\Big)Ext2$
- `\mthargfrm*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2]` = $Name^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- `\mthparfrm{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $Name^{sup}_{sub}Ext1\Big[Par^{Ex^{Ex}}\Big]Ext2$
- `\mthparfrm*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = $Name^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Formulae
\cmdmthall{frm}
\DeclareRobustCommand{\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, ε, ζ, η, θ, ϑ, ι, κ, $\varkappa$, λ, μ, ν, ξ, o, π, ϖ, ρ, ϱ, 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

```
\seqoflet{Frm}{mthfrm}
```

`\cmdmthfrm` ... to do!

- `\cmdmthfrm{cmdName}`;
  `\cmdNameFrm[sub][sub][ext]` = $cmdName^{sub}_{sub}ext$
- `\cmdmthfrm{cmdName}[NewName]`;
  `\cmdNameFrm[sub][sub][ext]` = $NewName^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthfrm}[2][2=]
  {\usrmth{#1}{Frm}{frm}[#2]}
```

`\cmdmthargfrm` ... to do!

- `\cmdmthargfrm{cmdName}`;
  `\cmdNameFrm[sub][sub][ext1]{arg}[ext2]` = $cmdName^{sub}_{sub}ext1(arg)ext2$
- `\cmdmthargfrm{cmdName}[NewName]`;
  `\cmdNameFrm[sub][sub][ext1]{arg}[ext2]` = $NewName^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargfrm}[2][2=]
  {\usrmth{#1}{Frm}{argfrm}[#2]}
```

\cmdmthoargfrm ... to do!

- \cmdmthoargfrm{cmdName};
  \cmdNameFrm[sub][sub][arg] = $cmdName^{sub}_{sub}(arg)$
- \cmdmthoargfrm{cmdName}[NewName];
  \cmdNameFrm[sub][sub][arg] = $NewName^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargfrm}[2][2=]
  {\usrmth{#1}{Frm}{oargfrm}[#2]}
```

\cmdmthparfrm ... to do!

- \cmdmthparfrm{cmdName};
  \cmdNameFrm[sub][sub][ext1]{par}[ext2] = $cmdName^{sub}_{sub}ext1[par]ext2$
- \cmdmthparfrm{cmdName}[NewName];
  \cmdNameFrm[sub][sub][ext1]{par}[ext2] = $NewName^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparfrm}[2][2=]
  {\usrmth{#1}{Frm}{parfrm}[#2]}
```

\cmdmthoparfrm ... to do!

- \cmdmthoparfrm{cmdName};
  \cmdNameFrm[sub][sub][par] = $cmdName^{sub}_{sub}[par]$
- \cmdmthoparfrm{cmdName}[NewName];
  \cmdNameFrm[sub][sub][par] = $NewName^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparfrm}[2][2=]
  {\usrmth{#1}{Frm}{oparfrm}[#2]}

%%*************************************************************************%%
```

\mthmat ... to do!

...

- \mthmat{Name}[sub][sup][Ext] = $\mathbf{Name}^{sup}_{sub}Ext$
- \mthargmat{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathbf{Name}^{sup}_{sub}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargmat*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\mathbf{Name}^{sup}_{sub}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparmat{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathbf{Name}^{sup}_{sub}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparmat*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\mathbf{Name}^{sup}_{sub}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Matrices
\cmdmthall{mat}
\DeclareRobustCommand{\mthstymat}[1]{\boldsymbol{\mathsf{#1}}}
```

\aMat ... 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
$\boldsymbol{\alpha}$, $\boldsymbol{\beta}$, $\boldsymbol{\gamma}$, $\boldsymbol{\delta}$, $\boldsymbol{\epsilon}$, $\boldsymbol{\varepsilon}$, $\boldsymbol{\zeta}$, $\boldsymbol{\eta}$, $\boldsymbol{\theta}$, $\boldsymbol{\vartheta}$, $\boldsymbol{\iota}$, $\boldsymbol{\kappa}$, $\boldsymbol{\varkappa}$, $\boldsymbol{\lambda}$, $\boldsymbol{\mu}$, $\boldsymbol{\nu}$, $\boldsymbol{\xi}$, o, $\boldsymbol{\pi}$, $\boldsymbol{\varpi}$, $\boldsymbol{\rho}$, $\boldsymbol{\varrho}$, $\boldsymbol{\sigma}$, $\boldsymbol{\varsigma}$, $\boldsymbol{\tau}$, $\boldsymbol{\upsilon}$, $\boldsymbol{\phi}$, $\boldsymbol{\varphi}$, $\boldsymbol{\chi}$, $\boldsymbol{\psi}$, $\boldsymbol{\omega}$
A, B, $\mathsf{\Gamma}$, $\mathsf{\Delta}$, E, E, Z, H, $\mathsf{\Theta}$, $\boldsymbol{\Theta}$, I, K, K, $\mathsf{\Lambda}$, M, N, $\mathsf{\Xi}$, O, $\mathsf{\Pi}$, $\boldsymbol{\Pi}$, P, P, $\mathsf{\Sigma}$, $\boldsymbol{\Sigma}$, T, $\mathsf{\Upsilon}$, $\mathsf{\Phi}$, $\boldsymbol{\Phi}$, X, $\mathsf{\Psi}$, $\mathsf{\Omega}$

```
\seqoflet{Mat}{mthmat}
```

\cmdmthmat ... to do!

- \cmdmthmat{cmdName};
  \cmdNameMat[sub][sub][ext] = $\mathbf{cmdName}^{sub}_{sub}ext$
- \cmdmthmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext] = $\mathbf{NewName}^{sub}_{sub}ext$

```
\DeclareRobustCommandx{\cmdmthmat}[2][2=]
  {\usrmth{#1}{Mat}{mat}[#2]}
```

\cmdmthargmat ... to do!

- \cmdmthargmat{cmdName};
  \cmdNameMat[sub][sub][ext1]{arg}[ext2] = $\mathbf{cmdName}^{sub}_{sub}ext1(arg)ext2$
- \cmdmthargmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext1]{arg}[ext2] = $\mathbf{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargmat}[2][2=]
  {\usrmth{#1}{Mat}{argmat}[#2]}
```

\cmdmthoargmat ... to do!

- \cmdmthoargmat{cmdName};
  \cmdNameMat[sub][sub][arg] = $\mathsf{cmdName}_{sub}^{sub}(arg)$
- \cmdmthoargmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][arg] = $\mathsf{NewName}_{sub}^{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargmat}[2][2=]
  {\usrmth{#1}{Mat}{oargmat}[#2]}
```

\cmdmthparmat ... to do!

- \cmdmthparmat{cmdName};
  \cmdNameMat[sub][sub][ext1]{par}[ext2] = $\mathsf{cmdName}_{sub}^{sub}ext1[par]ext2$
- \cmdmthparmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext1]{par}[ext2] = $\mathsf{NewName}_{sub}^{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparmat}[2][2=]
  {\usrmth{#1}{Mat}{parmat}[#2]}
```

\cmdmthoparmat ... to do!

- \cmdmthoparmat{cmdName};
  \cmdNameMat[sub][sub][par] = $\mathsf{cmdName}_{sub}^{sub}[par]$
- \cmdmthoparmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][par] = $\mathsf{NewName}_{sub}^{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparmat}[2][2=]
  {\usrmth{#1}{Mat}{oparmat}[#2]}
```

\mthvec ... to do!

...

- \mthvec{Name}[sub][sup][Ext] = $\boldsymbol{Name}_{sub}^{sup}Ext$
- \mthargvec{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\boldsymbol{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$
- \mthargvec*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = $\boldsymbol{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$
- \mthparvec{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\boldsymbol{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$
- \mthparvec*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = $\boldsymbol{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

```
%% Style for Vectors
\cmdmthall{vec}
\DeclareRobustCommand{\mthstyvec}[1]{\boldsymbol{\mathit{#1}}}
```

\aVec ... to do!

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

```
\seqoflet{Vec}{mthvec}
```

\cmdmthvec ... to do!

- \cmdmthvec{cmdName};
  \cmdNameVec[sub][sub][ext] = $\boldsymbol{cmdName}_{sub}^{sub}ext$
- \cmdmthvec{cmdName}[NewName];
  \cmdNameVec[sub][sub][ext] = $\boldsymbol{NewName}_{sub}^{sub}ext$

```
\DeclareRobustCommandx{\cmdmthvec}[2][2=]
  {\usrmth{#1}{Vec}{vec}[#2]}
```

\cmdmthargvec ... to do!

- \cmdmthargvec{cmdName};
  \cmdNameVec[sub][sub][ext1]{arg}[ext2] = $\boldsymbol{cmdName}_{sub}^{sub}ext1(arg)ext2$

- `\cmdmthargvec{cmdName}[NewName]`;
  `\cmdNameVec[sub][sub][ext1]{arg}[ext2]` = $\boldsymbol{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\DeclareRobustCommandx{\cmdmthargvec}[2][2=]
  {\usrmth{#1}{Vec}{argvec}[#2]}
```

`\cmdmthoargvec` ... to do!

- `\cmdmthoargvec{cmdName}`;
  `\cmdNameVec[sub][sub][arg]` = $\boldsymbol{cmdName}^{sub}_{sub}(arg)$
- `\cmdmthoargvec{cmdName}[NewName]`;
  `\cmdNameVec[sub][sub][arg]` = $\boldsymbol{NewName}^{sub}_{sub}(arg)$

```
\DeclareRobustCommandx{\cmdmthoargvec}[2][2=]
  {\usrmth{#1}{Vec}{oargvec}[#2]}
```

`\cmdmthparvec` ... to do!

- `\cmdmthparvec{cmdName}`;
  `\cmdNameVec[sub][sub][ext1]{par}[ext2]` = $\boldsymbol{cmdName}^{sub}_{sub}ext1[par]ext2$
- `\cmdmthparvec{cmdName}[NewName]`;
  `\cmdNameVec[sub][sub][ext1]{par}[ext2]` = $\boldsymbol{NewName}^{sub}_{sub}ext1[par]ext2$

```
\DeclareRobustCommandx{\cmdmthparvec}[2][2=]
  {\usrmth{#1}{Vec}{parvec}[#2]}
```

`\cmdmthoparvec` ... to do!

- `\cmdmthoparvec{cmdName}`;
  `\cmdNameVec[sub][sub][par]` = $\boldsymbol{cmdName}^{sub}_{sub}[par]$
- `\cmdmthoparvec{cmdName}[NewName]`;
  `\cmdNameVec[sub][sub][par]` = $\boldsymbol{NewName}^{sub}_{sub}[par]$

```
\DeclareRobustCommandx{\cmdmthoparvec}[2][2=]
  {\usrmth{#1}{Vec}{oparvec}[#2]}

\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Elementary Macros for Text ************************************************%%
%%*****************************************************************************%%
\iftxt@
```

`\dotcheck`

- `A\dotcheck a\dotcheck.a` = A.a. a

```
\DeclareRobustCommand{\dotcheck}
  {\@ifnextchar.{}{.\@}}

%%** Latin Abbreviations *****************************************************%%
```

`\adhoc`

- `\adhoc` = *ad hoc*

```
\cmdtxtabr{adhoc}[ad hoc]
```

`\afortiori`

- `\afortiori` = *a fortiori*

```
\cmdtxtabr{afortiori}[a fortiori]
```

`\apriori`

- `\apriori` = *a priori*

```
\cmdtxtabr{apriori}[a priori]
```

`\aposteriori`

- `\aposteriori` = *a posteriori*

```
\cmdtxtabr{aposteriori}[a posteriori]
```

`\cf`

- `\cf` = *cf.*

```
\cmdtxtabr{cf}[cf.\@]
```

`\dedicto`

- `\dedicto` = *de dicto*

```
\cmdtxtabr{dedicto}[de dicto]
```

\defacto • \defacto = *de facto*

```
\cmdtxtabr{defacto}[de facto]
```

\dere • \dere = *de re*

```
\cmdtxtabr{dere}[de re]
```

\divideetimpera • \divideetimpera = *divide et impera*

```
\cmdtxtabr{divideetimpera}[divide et impera]
```

\eg • \eg = *e.g.*

```
\cmdtxtabr{eg}[e.g.\@]
```

\ergo • \ergo = *ergo*

```
\cmdtxtabr{ergo}
```

\errata • \errata = *errata*

```
\cmdtxtabr{errata}
```

\erratum • \erratum = *erratum*

```
\cmdtxtabr{erratum}
```

\etal • \etal = *et al.*

```
\cmdtxtabr{etal}[et al.\@]
```

\etc • \etc = *etc.*

```
\cmdtxtabr{etc}[etc.\@]
```

\ie • \ie = *i.e.*

```
\cmdtxtabr{ie}[i.e.\@]
```

\mutatismutandis • \mutatismutandis = *mutatis mutandis*

```
\cmdtxtabr{mutatismutandis}[mutatis mutandis]
```

\percontra • \percontra = *per contra*

```
\cmdtxtabr{percontra}[per contra]
```

\primafacie • \primafacie = *prima facie*

```
\cmdtxtabr{primafacie}[prima facie]
```

\viceversa • \viceversa = *vice versa*

```
\cmdtxtabr{viceversa}[vice versa]
```

\vs • \vs = *vs.*

```
\cmdtxtabr{vs}[vs.\@]
```

\viz • \viz = *viz.*

```
\cmdtxtabr{viz}[viz.\@]
```

```
%%*************************************************************************%%
```

\Afortiori • \Afortiori = *A fortiori*

```
\cmdtxtabr{Afortiori}[A fortiori]
```

\Apriori • \Apriori = *A priori*

```
\cmdtxtabr{Apriori}[A priori]
```

\Aposteriori • \Aposteriori = *A posteriori*

```
\cmdtxtabr{Aposteriori}[A posteriori]
```

\Dedicto • \Dedicto = *De dicto*

```
\cmdtxtabr{Dedicto}[De dicto]
```

\Defacto • \Defacto = *De facto*

```
\cmdtxtabr{Defacto}[De facto]
```

\Dere • \Dere = *De re*

```
\cmdtxtabr{Dere}[De re]
```

\Divideetimpera • \Divideetimpera = *Divide et impera*

```
\cmdtxtabr{Divideetimpera}[Divide et impera]
```

\Eg • \Eg = *E.g.*

```
\cmdtxtabr{Eg}[E.g.\@]
```

\Errata • \Errata = *Errata*

```
\cmdtxtabr{Errata}
```

\Erratum • \Erratum = *Erratum*

```
\cmdtxtabr{Erratum}
```

\Mutatismutandis • \Mutatismutandis = *Mutatis mutandis*

```
\cmdtxtabr{Mutatismutandis}[Mutatis mutandis]
```

\Percontra • \Percontra = *Per contra*

```
\cmdtxtabr{Percontra}[Per contra]
```

\Primafacie • \Primafacie = *Prima facie*

```
\cmdtxtabr{Primafacie}[Prima facie]
```

\Viceversa • \Viceversa = *Vice versa*

```
\cmdtxtabr{Viceversa}[Vice versa]
```

```
%%** Italian Abbreviations ************************************************%%
```

...

```
%%*************************************************************************%%
```

...

```
%%** French Abbreviations *************************************************%%
```

\ala • \ala = *à la*

```
\cmdtxtabr{ala}[\`a la]
```

\naif • \naif = *naïf*

```
\cmdtxtabr{naif}[na\"{i}f]
```

\naive • \naive = *naïve*

```
\cmdtxtabr{naive}[na\"{i}ve]
```

\role • \role = *rôle*

```
\cmdtxtabr{role}[r\^{o}le]
```

```
%%*************************************************************************%%
```

\Role • \Role = *Rôle*

```
\cmdtxtabr{Role}[R\^{o}le]
```

```
%%** English Abbreviations ************************************************%%
```

\aka • \aka = *a.k.a.*

```
885 \cmdtxtabr{aka}[a.k.a.\@]
```

\contd • \contd = *contd.*

```
886 \cmdtxtabr{contd}[contd.\@]
```

\iff • \iff = *iff*

```
887 \cmdtxtabr{iff}
```

\iht • \iht = *i.h.t.*

```
888 \cmdtxtabr{iht}[i.h.t.\@]
```

\stx • \stx = *s.t.*

```
889 \cmdtxtabr{stx}[s.t.\@]
```

\resp • \resp = *resp.*

```
890 \cmdtxtabr{resp}[resp.\@]
```

\wrt • \wrt = *w.r.t.*

```
891 \cmdtxtabr{wrt}[w.r.t.\@]
```

\wlogx • \wlogx = *w.l.o.g.*

```
892 \cmdtxtabr{wlogx}[w.l.o.g.\@]

893 %%*************************************************************************%%
```

\Contd • \Contd = *Contd.*

```
894 \cmdtxtabr{Contd}[Contd.\@]
```

\Wlogx • \Wlogx = *W.l.o.g.*

```
895 \cmdtxtabr{Wlogx}[W.l.o.g.\@]

896 \fi
897 %%*************************************************************************%%
898 %%*************************************************************************%%
899 %%** Elementary Macros for Math *******************************************%%
900 %%*************************************************************************%%
901 \ifmth@
902 %%** General Notation *****************************************************%%
```

\defeq ...
\seteq

```
903 \DeclareRobustCommand{\defeq}
904   {\@ifstar%
905     {\mthlbop{\stackrel{\text{\textup{def}}}{=}}%
906     {\mthlbop{\triangleq}}}
907 \DeclareRobustCommand{\seteq}
908   {\@ifstar{\mthlbop{\Coloneqq}}{\mthlbop{\coloneqq}}}
909 %%*************************************************************************%%
```

\limp ...
...

```
910 \DeclareRobustCommand{\limp}
911   {\mthlbop{\rightarrow}}
```

\lcoimp ...
...

```
912 \DeclareRobustCommand{\lcoimp}
913   {\mthlbop{\leftrightarrow}}
914 %%*************************************************************************%%
```

```
\implies ...
     ...  915 \DeclareRobustCommand{\implies}
          916   {\mthlrel{\Rightarrow}}
          917 \DeclareRobustCommand{\notimplies}
          918   {\mthlrel{\not\Rightarrow}}

\impliedby ...
     ...  919 \DeclareRobustCommand{\impliedby}
          920   {\mthlrel{\Leftarrow}}
          921 \DeclareRobustCommand{\notimpliedby}
          922   {\mthlrel{\not\Leftarrow}}

\coimplies ...
     ...  923 \DeclareRobustCommand{\coimplies}
          924   {\mthlrel{\Leftrightarrow}}
          925 \DeclareRobustCommand{\notcoimplies}
          926   {\mthlrel{\not\!\Leftrightarrow}}
          927 %%*************************************************************************%%

\cmodels ...
     ...  928 \DeclareRobustCommand{\cmodels}
          929   {\mthlrel{\models}}
          930 \DeclareRobustCommand{\notcmodels}
          931   {\mthlrel{\not\models}}

 \cequiv ...
     ...  932 \DeclareRobustCommand{\cequiv}
          933   {\mthlrel{\equiv}}
          934 \DeclareRobustCommand{\notcequiv}
          935   {\mthlrel{\not\equiv}}
          936 %%*************************************************************************%%

  \denot ...
          937 \DeclareRobustCommand{\denot}
          938   {\@ifstar{\@sdenot}{\@denot}}
          939 \DeclareRobustCommand{\@denot}[1]
          940   {\mth{\argmid{\left\llbracket}{#1}{\right\rrbracket}}}
          941 \DeclareRobustCommand{\@sdenot}[1]
          942   {\mth*{\argmid{\llbracket}{#1}{\rrbracket}}}
          943 %%*************************************************************************%%

   \dual ...
    \adj  944 \DeclareRobustCommand{\dual}[1]
     ...  945   {\mth{\overline{#1}}}
          946 \DeclareRobustCommand{\adj}[1]
          947   {\mth{\mathring{#1}}}
          948 \DeclareRobustCommand{\der}[1]
          949   {\mth{\widehat{#1}}}
          950 \DeclareRobustCommand{\trn}[1]
          951   {\mth{\widetilde{#1}}}

    \vec ...
          952 \DeclareRobustCommand{\vec}
          953   {\@ifstar{\@svec}{\@vec}}
          954 \DeclareRobustCommand{\@vec}[1]
          955   {\mth{\mathaccent"017E{#1}}}
          956 \DeclareRobustCommand{\@svec}[1]
          957   {\mth{\overline{#1}}}
          958 %%*************************************************************************%%
```

```
\enumeration ...
        ... 959 \varcmd{enumeration}{\mth*}{}{,}{}{}
            960 \varcmd{enumerationx}{\mth*}{}{;}{}{}

  \sequence ...
        ... 961 \DeclareRobustCommand{\sequence}
            962   {\@ifstar{\@ssequence}{\@sequence}}
            963 \varcmd{@sequence}{\mth}{\left[}{,}{\right]}{}
            964 \varcmd{@ssequence}{\mth*}{[}{,}{]}{}
            965 \DeclareRobustCommand{\sequencel}
            966   {\@ifstar{\@ssequencel}{\@sequencel}}
            967 \varcmd{@sequencel}{\mth}{\left[}{,}{\right.}{}
            968 \varcmd{@ssequencel}{\mth*}{[}{,}{}{}
            969 \DeclareRobustCommand{\sequencer}
            970   {\@ifstar{\@ssequencer}{\@sequencer}}
            971 \varcmd{@sequencer}{\mth}{\left.}{,}{\right]}{}
            972 \varcmd{@ssequencer}{\mth*}{}{,}{]}{}
            973 \DeclareRobustCommand{\sequencex}
            974   {\@ifstar{\@ssequencex}{\@sequencex}}
            975 \varcmd{@sequencex}{\mth}{\left[}{;}{\right]}{}
            976 \varcmd{@ssequencex}{\mth*}{[}{;}{]}{}
            977 \DeclareRobustCommand{\sequencexl}
            978   {\@ifstar{\@ssequencexl}{\@sequencexl}}
            979 \varcmd{@sequencexl}{\mth}{\left[}{;}{\right.}{}
            980 \varcmd{@ssequencexl}{\mth*}{[}{;}{}{}
            981 \DeclareRobustCommand{\sequencexr}
            982   {\@ifstar{\@ssequencexr}{\@sequencexr}}
            983 \varcmd{@sequencexr}{\mth}{\left.}{;}{\right]}{}
            984 \varcmd{@ssequencexr}{\mth*}{}{;}{]}{}

     \tuple ...
        ... 985 \DeclareRobustCommand{\tuple}
            986   {\@ifstar{\@stuple}{\@tuple}}
            987 \varcmd{@tuple}{\mth}{\left\langle}{,}{\right\rangle}{}
            988 \varcmd{@stuple}{\mth*}{\langle}{,}{\rangle}{}
            989 \DeclareRobustCommand{\tuplel}
            990   {\@ifstar{\@stuplel}{\@tuplel}}
            991 \varcmd{@tuplel}{\mth}{\left\langle}{,}{\right.}{}
            992 \varcmd{@stuplel}{\mth*}{\langle}{,}{}{}
            993 \DeclareRobustCommand{\tupler}
            994   {\@ifstar{\@stupler}{\@tupler}}
            995 \varcmd{@tupler}{\mth}{\left.}{,}{\right\rangle}{}
            996 \varcmd{@stupler}{\mth*}{}{,}{\rangle}{}
            997 \DeclareRobustCommand{\tuplex}
            998   {\@ifstar{\@stuplex}{\@tuplex}}
            999 \varcmd{@tuplex}{\mth}{\left\langle}{;}{\right\rangle}{}
           1000 \varcmd{@stuplex}{\mth*}{\langle}{;}{\rangle}{}
           1001 \DeclareRobustCommand{\tuplexl}
           1002   {\@ifstar{\@stuplexl}{\@tuplexl}}
           1003 \varcmd{@tuplexl}{\mth}{\left\langle}{;}{\right.}{}
           1004 \varcmd{@stuplexl}{\mth*}{\langle}{;}{}{}
           1005 \DeclareRobustCommand{\tuplexr}
           1006   {\@ifstar{\@stuplexr}{\@tuplexr}}
           1007 \varcmd{@tuplexr}{\mth}{\left.}{;}{\right\rangle}{}
           1008 \varcmd{@stuplexr}{\mth*}{}{;}{\rangle}{}
           1009 %%** Sets ************************************************************%%

       \set ...
        ... 1010 \DeclareRobustCommand{\set}
            1011   {\@ifstar{\@sset{\vert}}{\@set{\vert}}}
            1012 \DeclareRobustCommand{\setx}
            1013   {\@ifstar{\@sset{:}}{\@set{.\!:}}}
            1014 \DeclareRobustCommand{\@set}[3]
```

```
1015   {\mth{\argmid{\left\lbrace}{\argsep{#2}{\,\middle#1\,}{#3}}{\right\rbrace}}}
1016 \DeclareRobustCommand{\@sset}[3]
1017   {\mth*{\argmid{\lbrace}{\argsep{#2}{\,#1\,}{#3}}{\rbrace}}}
1018 \DeclareRobustCommand{\setl}
1019   {\@ifstar{\@ssetl{\vert}}{\@setl{\vert}}}
1020 \DeclareRobustCommand{\setlx}
1021   {\@ifstar{\@ssetl{:}}{\@setl{.\!\!\!:}}}
1022 \DeclareRobustCommand{\@setl}[2]
1023   {\mth{\argmid{\left\lbrace}{#2}{\,\right#1\!}}}
1024 \DeclareRobustCommand{\@ssetl}[2]
1025   {\mth*{\argmid{\lbrace}{#2}{\,#1\!}}}
1026 \DeclareRobustCommand{\setr}
1027   {\@ifstar{\@ssetr}{\@setr}}
1028 \DeclareRobustCommand{\setrx}
1029   {\@ifstar{\@ssetr}{\@setr}}
1030 \DeclareRobustCommand{\@setr}[1]
1031   {\mth{\argmid{\left.}{#1}{\right\rbrace}}}
1032 \DeclareRobustCommand{\@ssetr}[1]
1033   {\mth*{\argmid{}{#1}{\rbrace}}}
```

\card ...

```
1034 \DeclareRobustCommand{\card}
1035   {\@ifstar{\@scard}{\@card}}
1036 \DeclareRobustCommand{\@card}[1]
1037   {\mth{\argmid{\left\lvert}{#1}{\right\rvert}}}
1038 \DeclareRobustCommand{\@scard}[1]
1039   {\mth*{\argmid{\lvert}{#1}{\rvert}}}
```

\pow ...

```
1040 \DeclareRobustCommand{\pow}[1]
1041   {\mth{2^{\defval{#1}{\cdot}}}}
```

```
1042 %%** Relations ******************************************************************%%
```

\emptyrel ...

```
1043 \DeclareRobustCommand{\emptyrel}
1044   {\mth{\varnothing}}
```

```
1045 %%*******************************************************************************%%
```

\dom ...
\cod ...

```
1046 \usrmth{dom}{}{argfun}
1047 \usrmth{cod}{}{argfun}
1048 \usrmth{rng}{}{argfun}
1049 \usrmth{img}{}{argfun}
```

\deg ...

```
1050 \usrmth{deg}{}{argfun}
```

```
1051 %%*******************************************************************************%%
```

\prj ...

```
1052 \DeclareRobustCommand{\prj}
1053   {\mthlbop{\downarrow}}
```

\rst ...

```
1054 \DeclareRobustCommand{\rst}
1055   {\mthlbop{\upharpoonright}}
```

\cmp ...

```
1056 \DeclareRobustCommand{\cmp}
1057   {\mthlbop{\circ}}
```

```
1058 %%** Functions *****************************************************************%%
```

```
\emptyfun ...
          \DeclareRobustCommand{\emptyfun}
            {\mth{\varnothing}}

          %%*************************************************************************%%

     \pto ...
 \pmapsto \DeclareMathOperator{\pto}
            {\ensuremath{\rightharpoonup}}
          \DeclareMathOperator{\pmapsto}
            {\ensuremath{\mathrel{\raisebox{0.5ex}{\footnotesize${\llcorner}$}%
              \kern-1.5ex\rightharpoonup}}}

          %%*************************************************************************%%

     \fix ...
     \ifp \usrmth{fix}{}{fun}
      ... \usrmth{ifp}{}{fun}
          \usrmth{lfp}{}{fun}
          \usrmth{gfp}{}{fun}

          %%*************************************************************************%%

  \Aomega ...
  \AOmega \usrmth{Aomega}{}{argset}[\omega]
          \usrmth{AOmega}{}{argset}[\Omega]

  \Atheta ...
  \ATheta \usrmth{Atheta}{}{argset}[\theta]
          \usrmth{ATheta}{}{argset}[\Theta]

\Aomicron ...
      ... \usrmth{Aomicron}{}{argset}[\omicron]
          \usrmth{AOmicron}{}{argset}[\Omicron]

          %%** Numbers ************************************************************%%

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

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

    \SetN ...
      ... \DeclareRobustCommand{\SetN}
            {\mthset[mathbb]{N}}
          \DeclareRobustCommand{\SetNI}[1][]
            {\SetN[\infty #1]}

    \SetZ ...
      ... \DeclareRobustCommand{\SetZ}
            {\mthset[mathbb]{Z}}
          \DeclareRobustCommand{\SetZI}[1][]
            {\SetZ[\pm\infty #1]}
          \DeclareRobustCommand{\SetZPI}[1][]
            {\SetZ[+\infty #1]}
          \DeclareRobustCommand{\SetZNI}[1][]
            {\SetZ[-\infty #1]}
```

```
\SetQ ...
  ... \DeclareRobustCommand{\SetQ}
      {\mthset[mathbb]{Q}}
\DeclareRobustCommand{\SetQI}[1][]
      {\SetQ[\pm\infty #1]}
\DeclareRobustCommand{\SetQPI}[1][]
      {\SetQ[+\infty #1]}
\DeclareRobustCommand{\SetQNI}[1][]
      {\SetQ[-\infty #1]}

\SetR ...
  ... \DeclareRobustCommand{\SetR}
      {\mthset[mathbb]{R}}
\DeclareRobustCommand{\SetRI}[1][]
      {\SetR[\pm\infty #1]}
\DeclareRobustCommand{\SetRPI}[1][]
      {\SetR[+\infty #1]}
\DeclareRobustCommand{\SetRNI}[1][]
      {\SetR[-\infty #1]}

\SetC ...
  ... \DeclareRobustCommand{\SetC}
      {\mthset[mathbb]{C}}
\DeclareRobustCommand{\SetCI}[1][]
      {\SetC[\infty #1]}
      %%*************************************************************************%%

 \num ...
  ... \DeclareRobustCommand{\num}[1]
      {\mth{[#1]}}
\DeclareRobustCommand{\numcc}[2]
      {\mth{[\argsep{#1}{,}{#2}]}}
\DeclareRobustCommand{\numco}[2]
      {\mth{[\argsep{#1}{,}{#2})}}
\DeclareRobustCommand{\numoc}[2]
      {\mth{(\argsep{#1}{,}{#2}]}}
\DeclareRobustCommand{\numoo}[2]
      {\mth{(\argsep{#1}{,}{#2})}}
      %%*************************************************************************%%

 \abs ...
\norm \DeclareRobustCommand{\abs}
      {\@ifstar{\@sabs}{\@abs}}
\DeclareRobustCommand{\@abs}[1]
      {\mth{\argmid{\left\lvert}{#1}{\right\rvert}}}
\DeclareRobustCommand{\@sabs}[1]
      {\mth*{\argmid{\lvert}{#1}{\rvert}}}
\DeclareRobustCommand{\norm}
      {\@ifstar{\@snorm}{\@norm}}
\DeclareRobustCommand{\@norm}[1]
      {\mth{\argmid{\left\lVert}{#1}{\right\rVert}}}
\DeclareRobustCommand{\@snorm}[1]
      {\mth*{\argmid{\lVert}{#1}{\rVert}}}

\floor ...
\ceil \DeclareRobustCommand{\floor}
      {\@ifstar{\@sfloor}{\@floor}}
\DeclareRobustCommand{\@floor}[1]
      {\mth{\argmid{\left\lfloor}{#1}{\right\rfloor}}}
\DeclareRobustCommand{\@sfloor}[1]
      {\mth*{\argmid{\lfloor}{#1}{\rfloor}}}
\DeclareRobustCommand{\ceil}
```

```
1147   {\@ifstar{\@sceil}{\@ceil}}
1148 \DeclareRobustCommand{\@ceil}[1]
1149   {\mth{\argmid{\left\lceil}{#1}{\right\rceil}}}
1150 \DeclareRobustCommand{\@sceil}[1]
1151   {\mth*{\argmid{\lceil}{#1}{\rceil}}}
1152 %%*****************************************************************************%%
```

\arg ...

```
1153 \usrmth{arg}{}{fun}
```

\evn ...
\odd

```
1154 \usrmth{evn}{}{fun}
1155 \usrmth{odd}{}{fun}
```

\bst ...
...

```
1156 \usrmth{bst}{}{fun}
1157 \usrmth{argbst}{}{fun}[arg\,bst]
```

\min ...
\max

```
1158 \usrmth{min}{}{fun}
```

...

```
1159 \usrmth{max}{}{fun}
1160 \usrmth{argmin}{}{fun}[arg\,min]
1161 \usrmth{argmax}{}{fun}[arg\,max]
```

\inf ...
\sup

```
1162 \usrmth{inf}{}{fun}
1163 \usrmth{sup}{}{fun}
```

\gcd ...
\lcm

```
1164 \usrmth{gcd}{}{fun}
1165 \usrmth{lcm}{}{fun}
1166 %%** Sequences *************************************************************%%
```

\emptyseq ...

```
1167 \DeclareRobustCommand{\emptyseq}
1168   {\mth{\varepsilon}}
```

\len ...

```
1169 \DeclareRobustCommand{\len}
1170   {\@ifstar{\@slen}{\@len}}
1171 \DeclareRobustCommand{\@len}[1]
1172   {\mth{\argmid{\left\lvert}{#1}{\right\rvert}}}
1173 \DeclareRobustCommand{\@slen}[1]
1174   {\mth*{\argmid{\lvert}{#1}{\rvert}}}
```

\fst ...
\lst

```
1175 \usrmth{fst}{}{argfun}
1176 \usrmth{lst}{}{argfun}
1177 \fi
1178 %%*****************************************************************************%%
1179 %%*****************************************************************************%%
1180 %%** Macros for Computational-Complexity Classes ****************************%%
1181 %%*****************************************************************************%%
1182 \ifcom@
```

\defcomcls ... to do!

- \defcomcls{CompClass};

  \CompClass[sub][sup][arg] = $\textsc{CompClass}_{\textsc{sub}}^{\textsc{sup}}(\textsc{arg})$

- `\defcomcls{CompClass}[NewClass]`;

  `\CompClass[sub][sup][arg]` = $\textsc{NewClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

```
1183 \DeclareRobustCommandx{\defcomcls}[2][2=]
1184   {\csdef{#1}{\txtoargcom{\defval{#2}{#1}}}}
```

`\defcomclsgrp` ... to do!

- `\defcomclsgrp{CompClass}`;

  `\CompClass[sub][sup][arg]` = $\textsc{CompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClass[sub][sup][arg]` = $\textsc{CoCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CompClassE[sub][sup][arg]` = $\textsc{CompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClassE[sub][sup][arg]` = $\textsc{CoCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CompClassH[sub][sup][arg]` = $\textsc{CompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClassH[sub][sup][arg]` = $\textsc{CoCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CompClassC[sub][sup][arg]` = $\textsc{CompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClassC[sub][sup][arg]` = $\textsc{CoCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

  `\DCompClass[sub][sup][arg]` = $\textsc{DCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoDCompClass[sub][sup][arg]` = $\textsc{CoDCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DCompClassE[sub][sup][arg]` = $\textsc{DCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoDCompClassE[sub][sup][arg]` = $\textsc{CoDCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DCompClassH[sub][sup][arg]` = $\textsc{DCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoDCompClassH[sub][sup][arg]` = $\textsc{CoDCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DCompClassC[sub][sup][arg]` = $\textsc{DCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoDCompClassC[sub][sup][arg]` = $\textsc{CoDCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

  `\NCompClass[sub][sup][arg]` = $\textsc{NCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoNCompClass[sub][sup][arg]` = $\textsc{CoNCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NCompClassE[sub][sup][arg]` = $\textsc{NCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoNCompClassE[sub][sup][arg]` = $\textsc{CoNCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NCompClassH[sub][sup][arg]` = $\textsc{NCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoNCompClassH[sub][sup][arg]` = $\textsc{CoNCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NCompClassC[sub][sup][arg]` = $\textsc{NCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoNCompClassC[sub][sup][arg]` = $\textsc{CoNCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

  `\UCompClass[sub][sup][arg]` = $\textsc{UCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoUCompClass[sub][sup][arg]` = $\textsc{CoUCompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\UCompClassE[sub][sup][arg]` = $\textsc{UCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoUCompClassE[sub][sup][arg]` = $\textsc{CoUCompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\UCompClassH[sub][sup][arg]` = $\textsc{UCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoUCompClassH[sub][sup][arg]` = $\textsc{CoUCompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\UCompClassC[sub][sup][arg]` = $\textsc{UCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoUCompClassC[sub][sup][arg]` = $\textsc{CoUCompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

  `\ACompClass[sub][sup][arg]` = $\textsc{ACompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoACompClass[sub][sup][arg]` = $\textsc{CoACompClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ACompClassE[sub][sup][arg]` = $\textsc{ACompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoACompClassE[sub][sup][arg]` = $\textsc{CoACompClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ACompClassH[sub][sup][arg]` = $\textsc{ACompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoACompClassH[sub][sup][arg]` = $\textsc{CoACompClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ACompClassC[sub][sup][arg]` = $\textsc{ACompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoACompClassC[sub][sup][arg]` = $\textsc{CoACompClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

- `\defcomclsgrp{CompClass}[NewClass]`;

  `\CompClass[sub][sup][arg]` = $\textsc{NewClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClass[sub][sup][arg]` = $\textsc{CoNewClass}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CompClassE[sub][sup][arg]` = $\textsc{NewClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClassE[sub][sup][arg]` = $\textsc{CoNewClass-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CompClassH[sub][sup][arg]` = $\textsc{NewClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClassH[sub][sup][arg]` = $\textsc{CoNewClass-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CompClassC[sub][sup][arg]` = $\textsc{NewClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\CoCompClassC[sub][sup][arg]` = $\textsc{CoNewClass-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

\DCompClass[sub][sup][arg] = DNewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoDCompClass[sub][sup][arg] = CoDNewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\DCompClassE[sub][sup][arg] = DNewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoDCompClassE[sub][sup][arg] = CoDNewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\DCompClassH[sub][sup][arg] = DNewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoDCompClassH[sub][sup][arg] = CoDNewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\DCompClassC[sub][sup][arg] = DNewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoDCompClassC[sub][sup][arg] = CoDNewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)

\NCompClass[sub][sup][arg] = NNewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoNCompClass[sub][sup][arg] = CoNNewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\NCompClassE[sub][sup][arg] = NNewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoNCompClassE[sub][sup][arg] = CoNNewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\NCompClassH[sub][sup][arg] = NNewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoNCompClassH[sub][sup][arg] = CoNNewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\NCompClassC[sub][sup][arg] = NNewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoNCompClassC[sub][sup][arg] = CoNNewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)

\UCompClass[sub][sup][arg] = UNewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoUCompClass[sub][sup][arg] = CoUNewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\UCompClassE[sub][sup][arg] = UNewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoUCompClassE[sub][sup][arg] = CoUNewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\UCompClassH[sub][sup][arg] = UNewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoUCompClassH[sub][sup][arg] = CoUNewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\UCompClassC[sub][sup][arg] = UNewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoUCompClassC[sub][sup][arg] = CoUNewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)

\ACompClass[sub][sup][arg] = ANewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoACompClass[sub][sup][arg] = CoANewClass$^{\text{SUP}}_{\text{SUB}}$(ARG)
\ACompClassE[sub][sup][arg] = ANewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoACompClassE[sub][sup][arg] = CoANewClass-easy$^{\text{SUP}}_{\text{SUB}}$(ARG)
\ACompClassH[sub][sup][arg] = ANewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoACompClassH[sub][sup][arg] = CoANewClass-hard$^{\text{SUP}}_{\text{SUB}}$(ARG)
\ACompClassC[sub][sup][arg] = ANewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)
\CoACompClassC[sub][sup][arg] = CoANewClass-complete$^{\text{SUP}}_{\text{SUB}}$(ARG)

```
\DeclareRobustCommandx{\defcomclsgrp}[2][2=]
  {\defcomclsgrpsem{#1}{\defval{#2}{#1}}%
  \defcomclsgrpsem{#1}{\defval{#2}{#1}}[Co]}
\DeclareRobustCommandx{\defcomclsgrpsem}[3][3=]
  {\defcomclsgrpred{#3#1}{#2}[#3]%
  \defcomclsgrpred{#3D#1}{#2}[#3D]%
  \defcomclsgrpred{#3N#1}{#2}[#3N]%
  \defcomclsgrpred{#3U#1}{#2}[#3U]%
  \defcomclsgrpred{#3A#1}{#2}[#3A]}
\DeclareRobustCommandx{\defcomclsgrpred}[3][3=]
  {\defcomclsgrpcmd{#1}{#2}[#3]%
  \defcomclsgrpcmd{#1E}{#2}[#3][-easy]%
  \defcomclsgrpcmd{#1H}{#2}[#3][-hard]%
  \defcomclsgrpcmd{#1C}{#2}[#3][-complete]}%
\DeclareRobustCommandx{\defcomclsgrpcmd}[4][3=, 4=]
  {\csdef{#1}{\txtoargcom{#3#2#4}}}
```

`\defcomhrc` ... to do!

- `\defcomhrc{CompHierarchy}`;

  `CompHierarchy[sub][sup][par]` = CompHierarchy$^{\text{SUP}}_{\text{SUB}}$[PAR]

- `\defcomhrc{CompHierarchy}[NewHierarchy]`;

  `CompHierarchy[sub][sup][par]` = NewHierarchy$^{\text{SUP}}_{\text{SUB}}$[PAR]

```
\DeclareRobustCommandx{\defcomhrc}[2][2=]
  {\csdef{#1}{\txtoparcom{\defval{#2}{#1}}}}
```

```
%%*************************************************************************%%
```

\Easy
\Hard
...

```
\cmdtxtcom{Easy}
\cmdtxtcom{Hard}
\cmdtxtcom{Complete}
```

```
%%*************************************************************************%%
```

\FPT
...

- \FPT[sub][sup][arg] = $\mathrm{FPT}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \FPLin[sub][sup][arg] = $\mathrm{FPL}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \FPQdr[sub][sup][arg] = $\mathrm{FPQ}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \FPCub[sub][sup][arg] = $\mathrm{FPC}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$

```
\defcomcls{FPT}
\defcomcls{FPLin}[FPL]
\defcomcls{FPQdr}[FPQ]
\defcomcls{FPCub}[FPC]
```

```
%%*************************************************************************%%
```

\Time
...

- \Time[sub][sup][arg] = $\textsc{Time}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \TimeE[sub][sup][arg] = $\textsc{Time-easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \TimeH[sub][sup][arg] = $\textsc{Time-hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \TimeC[sub][sup][arg] = $\textsc{Time-complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \DTime[sub][sup][arg] = $\mathrm{DTime}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \DTimeE[sub][sup][arg] = $\mathrm{DTime\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \DTimeH[sub][sup][arg] = $\mathrm{DTime\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \DTimeC[sub][sup][arg] = $\mathrm{DTime\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \NTime[sub][sup][arg] = $\mathrm{NTime}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \NTimeE[sub][sup][arg] = $\mathrm{NTime\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \NTimeH[sub][sup][arg] = $\mathrm{NTime\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \NTimeC[sub][sup][arg] = $\mathrm{NTime\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \UTime[sub][sup][arg] = $\mathrm{UTime}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \UTimeE[sub][sup][arg] = $\mathrm{UTime\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \UTimeH[sub][sup][arg] = $\mathrm{UTime\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \UTimeC[sub][sup][arg] = $\mathrm{UTime\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \ATime[sub][sup][arg] = $\mathrm{ATime}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \ATimeE[sub][sup][arg] = $\mathrm{ATime\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \ATimeH[sub][sup][arg] = $\mathrm{ATime\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \ATimeC[sub][sup][arg] = $\mathrm{ATime\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$

```
\defcomclsgrp{Time}
```

\Space
...

- \Space[sub][sup][arg] = $\textsc{Space}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \SpaceE[sub][sup][arg] = $\textsc{Space-easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \SpaceH[sub][sup][arg] = $\textsc{Space-hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \SpaceC[sub][sup][arg] = $\textsc{Space-complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \DSpace[sub][sup][arg] = $\mathrm{DSpace}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \DSpaceE[sub][sup][arg] = $\mathrm{DSpace\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \DSpaceH[sub][sup][arg] = $\mathrm{DSpace\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \DSpaceC[sub][sup][arg] = $\mathrm{DSpace\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \NSpace[sub][sup][arg] = $\mathrm{NSpace}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \NSpaceE[sub][sup][arg] = $\mathrm{NSpace\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \NSpaceH[sub][sup][arg] = $\mathrm{NSpace\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \NSpaceC[sub][sup][arg] = $\mathrm{NSpace\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- \USpace[sub][sup][arg] = $\mathrm{USpace}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \USpaceE[sub][sup][arg] = $\mathrm{USpace\text{-}easy}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \USpaceH[sub][sup][arg] = $\mathrm{USpace\text{-}hard}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  \USpaceC[sub][sup][arg] = $\mathrm{USpace\text{-}complete}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$

- `\ASpace[sub][sup][arg]` = $\textsc{aspace}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ASpaceE[sub][sup][arg]` = $\textsc{aspace-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ASpaceH[sub][sup][arg]` = $\textsc{aspace-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ASpaceC[sub][sup][arg]` = $\textsc{aspace-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

1214 `\defcomclsgrp{Space}`

`\LogTime` ...

- `\LogTime[sub][sup][arg]` = $\textsc{logtime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\LogTimeE[sub][sup][arg]` = $\textsc{logtime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\LogTimeH[sub][sup][arg]` = $\textsc{logtime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\LogTimeC[sub][sup][arg]` = $\textsc{logtime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\DLogTime[sub][sup][arg]` = $\textsc{dlogtime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DLogTimeE[sub][sup][arg]` = $\textsc{dlogtime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DLogTimeH[sub][sup][arg]` = $\textsc{dlogtime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DLogTimeC[sub][sup][arg]` = $\textsc{dlogtime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\NLogTime[sub][sup][arg]` = $\textsc{nlogtime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NLogTimeE[sub][sup][arg]` = $\textsc{nlogtime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NLogTimeH[sub][sup][arg]` = $\textsc{nlogtime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NLogTimeC[sub][sup][arg]` = $\textsc{nlogtime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\ULogTime[sub][sup][arg]` = $\textsc{ulogtime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ULogTimeE[sub][sup][arg]` = $\textsc{ulogtime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ULogTimeH[sub][sup][arg]` = $\textsc{ulogtime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ULogTimeC[sub][sup][arg]` = $\textsc{ulogtime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\ALogTime[sub][sup][arg]` = $\textsc{alogtime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ALogTimeE[sub][sup][arg]` = $\textsc{alogtime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ALogTimeH[sub][sup][arg]` = $\textsc{alogtime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ALogTimeC[sub][sup][arg]` = $\textsc{alogtime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

1215 `\defcomclsgrp{LogTime}`

`\LogSpace` ...

- `\LogSpace[sub][sup][arg]` = $\textsc{logspace}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\LogSpaceE[sub][sup][arg]` = $\textsc{logspace-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\LogSpaceH[sub][sup][arg]` = $\textsc{logspace-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\LogSpaceC[sub][sup][arg]` = $\textsc{logspace-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\DLogSpace[sub][sup][arg]` = $\textsc{dlogspace}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DLogSpaceE[sub][sup][arg]` = $\textsc{dlogspace-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DLogSpaceH[sub][sup][arg]` = $\textsc{dlogspace-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DLogSpaceC[sub][sup][arg]` = $\textsc{dlogspace-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\NLogSpace[sub][sup][arg]` = $\textsc{nlogspace}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NLogSpaceE[sub][sup][arg]` = $\textsc{nlogspace-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NLogSpaceH[sub][sup][arg]` = $\textsc{nlogspace-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\NLogSpaceC[sub][sup][arg]` = $\textsc{nlogspace-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\ULogSpace[sub][sup][arg]` = $\textsc{ulogspace}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ULogSpaceE[sub][sup][arg]` = $\textsc{ulogspace-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ULogSpaceH[sub][sup][arg]` = $\textsc{ulogspace-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ULogSpaceC[sub][sup][arg]` = $\textsc{ulogspace-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\ALogSpace[sub][sup][arg]` = $\textsc{alogspace}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ALogSpaceE[sub][sup][arg]` = $\textsc{alogspace-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ALogSpaceH[sub][sup][arg]` = $\textsc{alogspace-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\ALogSpaceC[sub][sup][arg]` = $\textsc{alogspace-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

1216 `\defcomclsgrp{LogSpace}`

`\PTime` ...

- `\PTime[sub][sup][arg]` = $\textsc{ptime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\PTimeE[sub][sup][arg]` = $\textsc{ptime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\PTimeH[sub][sup][arg]` = $\textsc{ptime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\PTimeC[sub][sup][arg]` = $\textsc{ptime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
- `\DPTime[sub][sup][arg]` = $\textsc{dptime}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DPTimeE[sub][sup][arg]` = $\textsc{dptime-easy}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DPTimeH[sub][sup][arg]` = $\textsc{dptime-hard}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$
  `\DPTimeC[sub][sup][arg]` = $\textsc{dptime-complete}^{\textsc{sup}}_{\textsc{sub}}(\textsc{arg})$

- `\NPTime[sub][sup][arg]` = $\mathrm{NPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NPTimeE[sub][sup][arg]` = $\mathrm{NPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NPTimeH[sub][sup][arg]` = $\mathrm{NPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NPTimeC[sub][sup][arg]` = $\mathrm{NPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\UPTime[sub][sup][arg]` = $\mathrm{UPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UPTimeE[sub][sup][arg]` = $\mathrm{UPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UPTimeH[sub][sup][arg]` = $\mathrm{UPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UPTimeC[sub][sup][arg]` = $\mathrm{UPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\APTime[sub][sup][arg]` = $\mathrm{APTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\APTimeE[sub][sup][arg]` = $\mathrm{APTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\APTimeH[sub][sup][arg]` = $\mathrm{APTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\APTimeC[sub][sup][arg]` = $\mathrm{APTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$

1217 `\defcomclsgrp{PTime}`

`\PSpace` ...

- `\PSpace[sub][sup][arg]` = $\mathrm{PSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\PSpaceE[sub][sup][arg]` = $\mathrm{PSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\PSpaceH[sub][sup][arg]` = $\mathrm{PSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\PSpaceC[sub][sup][arg]` = $\mathrm{PSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\DPSpace[sub][sup][arg]` = $\mathrm{DPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\DPSpaceE[sub][sup][arg]` = $\mathrm{DPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\DPSpaceH[sub][sup][arg]` = $\mathrm{DPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\DPSpaceC[sub][sup][arg]` = $\mathrm{DPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\NPSpace[sub][sup][arg]` = $\mathrm{NPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NPSpaceE[sub][sup][arg]` = $\mathrm{NPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NPSpaceH[sub][sup][arg]` = $\mathrm{NPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NPSpaceC[sub][sup][arg]` = $\mathrm{NPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\UPSpace[sub][sup][arg]` = $\mathrm{UPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UPSpaceE[sub][sup][arg]` = $\mathrm{UPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UPSpaceH[sub][sup][arg]` = $\mathrm{UPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UPSpaceC[sub][sup][arg]` = $\mathrm{UPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\APSpace[sub][sup][arg]` = $\mathrm{APSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\APSpaceE[sub][sup][arg]` = $\mathrm{APSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\APSpaceH[sub][sup][arg]` = $\mathrm{APSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\APSpaceC[sub][sup][arg]` = $\mathrm{APSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$

1218 `\defcomclsgrp{PSpace}`

`\QPTime` ...

- `\QPTime[sub][sup][arg]` = $\mathrm{QPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\QPTimeE[sub][sup][arg]` = $\mathrm{QPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\QPTimeH[sub][sup][arg]` = $\mathrm{QPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\QPTimeC[sub][sup][arg]` = $\mathrm{QPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\DQPTime[sub][sup][arg]` = $\mathrm{DQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\DQPTimeE[sub][sup][arg]` = $\mathrm{DQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\DQPTimeH[sub][sup][arg]` = $\mathrm{DQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\DQPTimeC[sub][sup][arg]` = $\mathrm{DQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\NQPTime[sub][sup][arg]` = $\mathrm{NQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NQPTimeE[sub][sup][arg]` = $\mathrm{NQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NQPTimeH[sub][sup][arg]` = $\mathrm{NQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\NQPTimeC[sub][sup][arg]` = $\mathrm{NQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\UQPTime[sub][sup][arg]` = $\mathrm{UQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UQPTimeE[sub][sup][arg]` = $\mathrm{UQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UQPTimeH[sub][sup][arg]` = $\mathrm{UQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\UQPTimeC[sub][sup][arg]` = $\mathrm{UQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
- `\AQPTime[sub][sup][arg]` = $\mathrm{AQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\AQPTimeE[sub][sup][arg]` = $\mathrm{AQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\AQPTimeH[sub][sup][arg]` = $\mathrm{AQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$
  `\AQPTimeC[sub][sup][arg]` = $\mathrm{AQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}(\mathrm{ARG})$

1219 `\defcomclsgrp{QPTime}`

\QPSpace ...

- \QPSpace[sub][sup][arg] = $\mathrm{QPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \QPSpaceE[sub][sup][arg] = $\mathrm{QPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \QPSpaceH[sub][sup][arg] = $\mathrm{QPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \QPSpaceC[sub][sup][arg] = $\mathrm{QPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \DQPSpace[sub][sup][arg] = $\mathrm{DQPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DQPSpaceE[sub][sup][arg] = $\mathrm{DQPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DQPSpaceH[sub][sup][arg] = $\mathrm{DQPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DQPSpaceC[sub][sup][arg] = $\mathrm{DQPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \NQPSpace[sub][sup][arg] = $\mathrm{NQPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NQPSpaceE[sub][sup][arg] = $\mathrm{NQPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NQPSpaceH[sub][sup][arg] = $\mathrm{NQPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NQPSpaceC[sub][sup][arg] = $\mathrm{NQPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \UQPSpace[sub][sup][arg] = $\mathrm{UQPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UQPSpaceE[sub][sup][arg] = $\mathrm{UQPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UQPSpaceH[sub][sup][arg] = $\mathrm{UQPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UQPSpaceC[sub][sup][arg] = $\mathrm{UQPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \AQPSpace[sub][sup][arg] = $\mathrm{AQPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \AQPSpaceE[sub][sup][arg] = $\mathrm{AQPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \AQPSpaceH[sub][sup][arg] = $\mathrm{AQPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \AQPSpaceC[sub][sup][arg] = $\mathrm{AQPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$

1220 \defcomclsgrp{QPSpace}

\ExpTime ...

- \ExpTime[sub][sup][arg] = $\mathrm{EXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \ExpTimeE[sub][sup][arg] = $\mathrm{EXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \ExpTimeH[sub][sup][arg] = $\mathrm{EXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \ExpTimeC[sub][sup][arg] = $\mathrm{EXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \DExpTime[sub][sup][arg] = $\mathrm{DEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DExpTimeE[sub][sup][arg] = $\mathrm{DEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DExpTimeH[sub][sup][arg] = $\mathrm{DEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DExpTimeC[sub][sup][arg] = $\mathrm{DEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \NExpTime[sub][sup][arg] = $\mathrm{NEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NExpTimeE[sub][sup][arg] = $\mathrm{NEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NExpTimeH[sub][sup][arg] = $\mathrm{NEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NExpTimeC[sub][sup][arg] = $\mathrm{NEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \UExpTime[sub][sup][arg] = $\mathrm{UEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UExpTimeE[sub][sup][arg] = $\mathrm{UEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UExpTimeH[sub][sup][arg] = $\mathrm{UEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UExpTimeC[sub][sup][arg] = $\mathrm{UEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \AExpTime[sub][sup][arg] = $\mathrm{AEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \AExpTimeE[sub][sup][arg] = $\mathrm{AEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \AExpTimeH[sub][sup][arg] = $\mathrm{AEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \AExpTimeC[sub][sup][arg] = $\mathrm{AEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$

1221 \defcomclsgrp{ExpTime}

\ExpSpace ...

- \ExpSpace[sub][sup][arg] = $\mathrm{EXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \ExpSpaceE[sub][sup][arg] = $\mathrm{EXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \ExpSpaceH[sub][sup][arg] = $\mathrm{EXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \ExpSpaceC[sub][sup][arg] = $\mathrm{EXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \DExpSpace[sub][sup][arg] = $\mathrm{DEXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DExpSpaceE[sub][sup][arg] = $\mathrm{DEXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DExpSpaceH[sub][sup][arg] = $\mathrm{DEXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \DExpSpaceC[sub][sup][arg] = $\mathrm{DEXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \NExpSpace[sub][sup][arg] = $\mathrm{NEXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NExpSpaceE[sub][sup][arg] = $\mathrm{NEXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NExpSpaceH[sub][sup][arg] = $\mathrm{NEXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \NExpSpaceC[sub][sup][arg] = $\mathrm{NEXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
- \UExpSpace[sub][sup][arg] = $\mathrm{UEXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UExpSpaceE[sub][sup][arg] = $\mathrm{UEXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UExpSpaceH[sub][sup][arg] = $\mathrm{UEXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  \UExpSpaceC[sub][sup][arg] = $\mathrm{UEXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$

- `\AExpSpace[sub][sup][arg]` = $\mathrm{AExpSpace}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  `\AExpSpaceE[sub][sup][arg]` = $\mathrm{AExpSpace\text{-}easy}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  `\AExpSpaceH[sub][sup][arg]` = $\mathrm{AExpSpace\text{-}hard}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$
  `\AExpSpaceC[sub][sup][arg]` = $\mathrm{AExpSpace\text{-}complete}_{\mathrm{SUB}}^{\mathrm{SUP}}(\mathrm{ARG})$

```
\defcomclsgrp{ExpSpace}
%%*****************************************************************************%%
```

`\PH` - `\PH[sub][sup][par]` = $\mathrm{PH}_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$

```
\defcomhrc{PH}
```

`\WH` - `\WH[sub][sup][par]` = $\mathrm{W}_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$

```
\defcomhrc{WH}[W]
```

`\AH` - `\AH[sub][sup][par]` = $\mathrm{A}_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$

```
\defcomhrc{AH}[A]
```

`\DLH` - `\DLH[sub][sup][par]` = $\Delta_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$
`\DBH` - `\DBH[sub][sup][par]` = $\boldsymbol{\Delta}_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$

```
\defcomhrc{DLH}[{\mth{\Delta}}]
\defcomhrc{DBH}[{\mth[mathbf]{\Delta}}]
```

`\ELH` - `\ELH[sub][sup][par]` = $\Sigma_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$
`\EBH` - `\EBH[sub][sup][par]` = $\boldsymbol{\Sigma}_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$

```
\defcomhrc{ELH}[{\mth{\Sigma}}]
\defcomhrc{EBH}[{\mth[mathbf]{\Sigma}}]
```

`\ULH` - `\ULH[sub][sup][par]` = $\Pi_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$
`\UBH` - `\UBH[sub][sup][par]` = $\boldsymbol{\Pi}_{\mathrm{SUB}}^{\mathrm{SUP}}[\mathrm{PAR}]$

```
\defcomhrc{ULH}[{\mth{\Pi}}]
\defcomhrc{UBH}[{\mth[mathbf]{\Pi}}]

\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Macros for Graphs *********************************************************%%
%%*****************************************************************************%%
\ifgrp@
%%** Syntax *******************************************************************%%
```

`\GrpName` ...
...
```
\newcommand{\grpname}{G}
\usrmthlatupp{Grp}{Name}{name}[\grpname]
```

`\VerSet` ...
...
```
\newcommand{\versym}{v}
\newcommand{\verset}{V}
\cmdmthsetext{Ver}[\verset][\versym]
\cmdmthsymelm{iver}[\versym_{I}]
\cmdmthsymelm{fver}[\versym_{F}]
```

`\EdgRel` ...
```
\newcommand{\edgrel}{E}
\cmdmthrel{Edg}[\edgrel]

%%** Semantics ****************************************************************%%
```

`\PthSet` ...
`\pthFun`
```
\newcommand{\pthsym}{\pi}
\newcommand{\pthset}{Pth}
\cmdmthsetext{Pth}[\pthset][\pthsym]
\usrmth{path}{}{argfun}
```

```
      \pre ...
      \suc 1254 \usrmth{pre}{}{oargfun}
           1255 \usrmth{suc}{}{oargfun}
           1256 \fi
           1257 %%*****************************************************************************%%
           1258 %%*****************************************************************************%%
           1259 %%** Macros for Games ********************************************************%%
           1260 %%*****************************************************************************%%
           1261 \ifgam@
           1262 %%** Logic Games ************************************************************%%

     \SATG ...
       ... 1263 %% Satisfiability Games
           1264 \cmdtxtoparname{SATG}[Sat]
           1265
           1266 %% Validity Games
           1267 \cmdtxtoparname{VALG}[Val]
           1268
           1269 %% Evaluation Games
           1270 \cmdtxtoparname{EVLG}[Evl]
           1271
           1272 %% Synthesis Games
           1273 \cmdtxtoparname{SYNG}[Syn]
           1274
           1275 %% Model-Checking Games
           1276 \cmdtxtoparname{MCG}[MC]
           1277
           1278 %% Ehrenfeucht-Fraisse Games
           1279 \cmdtxtoparname{EFG}[EF]
           1280 %%** Syntax ***************************************************************%%

   \PlrSym ...
   \OppSym 1281 \newcommand{\plrsym}{E}
           1282 \cmdmthsym{Plr}[\plrsym]
           1283 \newcommand{\oppsym}{A}
           1284 \cmdmthsym{Opp}[\oppsym]

\ArenaName ...
       ... 1285 \newcommand{\arenaname}{A}
           1286 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

   \PosSet ...
       ... 1287 \newcommand{\possym}{v}
           1288 \newcommand{\posset}{Ps}
           1289 \cmdmthsetext{Pos}[\posset][\possym]
           1290 \cmdmthsymelm{ipos}[\possym_{I}]
           1291 \cmdmthsymelm{fpos}[\possym_{F}]
           1292 \cmdmthset{PPos}[\posset_{\PlrSym}]
           1293 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
           1294 \cmdmthset{OPos}[\posset_{\OppSym}]
           1295 \cmdmthsymelm{opos}[\possym_{\OppSym}]

   \PlrFun ...
           1296 \newcommand{\plrfun}{pl}
           1297 \cmdmthfun{plr}[\plrfun]

   \MovRel ...
           1298 \newcommand{\movrel}{Mv}
           1299 \cmdmthrel{Mov}[\movrel]
```

```
\GameName ...
      ... 1300 \newcommand{\gamename}{\Game}
          1301 \usrmthlatupp{Game}{Name}{name}[\gamename]

  \WinSet ...
          1302 \newcommand{\winset}{Wn}
          1303 \cmdmthset{Win}[\winset]

  \ObsSet ...
  \obsFun 1304 \newcommand{\obsset}{Ob}
          1305 \cmdmthset{Obs}[\obsset]
          1306 \cmdmthfun{obs}

          1307 %%** Semantics *****************************************************************%%

  \HstSet ...
      ... 1308 \newcommand{\hstsym}{\varpi}
          1309 \newcommand{\hstset}{Hst}
          1310 \cmdmthsetext{Hst}[\hstset][\hstsym]
          1311 \cmdmthset{PHst}[\hstset_{\PlrSym}]
          1312 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
          1313 \cmdmthset{OHst}[\hstset_{\OppSym}]
          1314 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
          1315 \usrmth{play}{}{argfun}

 \PlaySet ...
 \playFun 1316 \newcommand{\playsym}{\pi}
          1317 \newcommand{\playset}{Play}
          1318 \cmdmthsetext{Play}[\playset][\playsym]
          1319 \usrmth{hst}{}{argfun}

  \StrSet ...
      ... 1320 \newcommand{\strsym}{\sigma}
          1321 \newcommand{\strset}{Str}
          1322 \cmdmthsetext{Str}[\strset][\strsym]
          1323 \cmdmthset{PStr}[\strset_{\PlrSym}]
          1324 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
          1325 \cmdmthset{OStr}[\strset_{\OppSym}]
          1326 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

  \PrfSet ...
  \prfFun 1327 \newcommand{\prfsym}{\xi}
          1328 \newcommand{\prfset}{Prf}
          1329 \cmdmthsetext{Prf}[\prfset][\prfsym]

     \ent ...
     \esc 1330 \usrmth{ent}{}{oargfun}
          1331 \usrmth{esc}{}{oargfun}

     \int ...
     \out 1332 \usrmth{int}{}{oargfun}
          1333 \usrmth{out}{}{oargfun}

     \atr ...
     \rch 1334 \usrmth{atr}{}{oargfun}
          1335 \usrmth{rch}{}{oargfun}

    \lift ...
          1336 \usrmth{lift}{}{oargfun}

     \sol ...
          1337 \usrmth{sol}{}{oargfun}
```

```
%%** Qualitative Games on Graph ***********************************************%%

\BG ...
... %% Buchi Games
\cmdtxtoparname{BG}

%% Co-Buchi Games
\cmdtxtoparname{CG}

%% Parity Games
\cmdtxtoparname{PG}

%% Rabin Games
\cmdtxtoparname{RG}

%% Streett Games
\cmdtxtoparname{SG}

%% Muller Games
\cmdtxtoparname{MG}

%%** Syntax ********************************************************************%%

\EvnSym ...
\OddSym \newcommand{\evnsym}{0}
\cmdmthsym{Evn}[\evnsym]
\newcommand{\oddsym}{1}
\cmdmthsym{Odd}[\oddsym]

\PrtSet ...
\prtFun \newcommand{\prtsym}{p}
\newcommand{\prtset}{Pr}
\cmdmthsetext{Prt}[\prtset][\prtsym]
\cmdmthfun{prt}[pr]

%%** Semantics ********************************************************************%%

   ...

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

\EG ...
... %% Energy Games
\cmdtxtoparname{EG}

%% Mean-Payoff Games
\cmdtxtoparname{MPG}

%% Discounted-Payoff Games
\cmdtxtoparname{DPG}

%%** Syntax ********************************************************************%%

\MaxSym ...
\MinSym \newcommand{\maxsym}{\oplus}
\cmdmthsym{Max}[\maxsym]
\newcommand{\minsym}{\boxminus}
\cmdmthsym{Min}[\minsym]

\WghSet ...
\wghFun \newcommand{\wghsym}{w}
\newcommand{\wghset}{Wg}
\cmdmthsetext{Wgh}[\wghset][\wghsym]
\cmdmthfun{wgh}[wg]

%%** Semantics ********************************************************************%%
```

```
...
\fi
%%****************************************************************************%%
%%****************************************************************************%%
%%** Macros for Logics *********************************************************%%
%%****************************************************************************%%
\iflog@
%%** Propositional Logics *****************************************************%%

  \BF ...
 \QBF
  ... % Boolean Formulae
      \cmdtxtoparname{BF}

      % Quantified Boolean Formulae
      \DeclareRobustCommand{\QBF}
        {{\txtname{Q}}\BF}
      \DeclareRobustCommand{\EBF}
        {\ensuremath{\exists}\BF}
      \DeclareRobustCommand{\UBF}
        {\ensuremath{\forall}\BF}
%%** Syntax ******************************************************************%%

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

  \Tt ...
  \Ff \newcommand{\ttsym}{\top}
      \usrmth{Tt}{}{sym}[\ttsym]
      \newcommand{\ffsym}{\bot}
      \usrmth{Ff}{}{sym}[\ffsym]

 \LNeg ...
 \LNot \newcommand{\lnegsym}{\neg}
       \usrmth{LNeg}{}{luop}[\lnegsym]
       \newcommand{\lnotsym}{\sim}
       \usrmth{LNot}{}{luop}[\lnotsym]

 \LCon ...
 \LDis \newcommand{\lconsym}{\land}
       \usrmth{LCon}{}{lbop}[\lconsym]
       \newcommand{\ldissym}{\lor}
       \usrmth{LDis}{}{lbop}[\ldissym]

 \LImp ...
 \LCoi \newcommand{\limpsym}{\rightarrow}
       \usrmth{LImp}{}{lbop}[\limpsym]
       \newcommand{\lcoisym}{\leftrightarrow}
       \usrmth{LCoi}{}{lbop}[\lcoisym]

 \LExs ...
 \LAll \newcommand{\lexssym}{\exists}
       \usrmth{LExs}{}{luop}[\lexssym]
       \newcommand{\lallsym}{\forall}
       \usrmth{LAll}{}{luop}[\lallsym]

\APSet ...
   ... \newcommand{\apsym}{p}
       \newcommand{\apset}{AP}
       \cmdmthsetext{AP}[\apset][\apsym]
       \usrmth{ap}{}{argfun}
```

```
   \sub ...
        \usrmth{sub}{}{argfun}

   \Cnt ...
   \Qnt \usrmth{Cnt}{}{sym}[C]
   \Sym \usrmth{Qnt}{}{sym}[Q]
        \usrmth{Sym}{}{sym}[\odot]

   \QAE ...
   \QEA \usrmth{QAE}{}{sym}[\forall\exists]
        \usrmth{QEA}{}{sym}[\exists\forall]

\QntSet ...
    ... \newcommand{\qntsym}{\wp}
        \newcommand{\qntset}{Qn}
        \cmdmthsetext{Qnt}[\qntset][\qntsym]

  \free ...
 \bound \usrmth{free}{}{argfun}
        \usrmth{bound}{}{argfun}

   \dep ...
   \alt \usrmth{dep}{}{argfun}
        \usrmth{alt}{}{argfun}

   \cnf ...
   \dnf \cmdtxtabr{cnf}
    ... \cmdtxtabr{dnf}
        \cmdtxtabr{pnf}
        \cmdtxtabr{nnf}

        %%** Semantics *********************************************************%%

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

\ValSet ...
    ... \newcommand{\valsym}{\xi}
        \newcommand{\valset}{Val}
        \cmdmthsetext{Val}[\valset][\valsym]

\AsgSet ...
    ... \newcommand{\asgsym}{\chi}
        \newcommand{\asgset}{Asg}
        \cmdmthsetext{Asg}[\asgset][\asgsym]

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

   \FOL ...
    ... % First-Order Logic
        \cmdtxtoparname{FOL}[Fol]
        \cmdtxtoparname{FO}[FO]

        % Monadic First-Order Logic
        \DeclareRobustCommand{\MFOL}
          {{\txtname{M}}\FOL}
        \DeclareRobustCommand{\MFO}
          {{\txtname{M}}\FO}

        %%** Syntax ************************************************************%%
```

```
\VarSig ...
    ... 1466 \newcommand{\varsig}{V}
        1467 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
        1468 \newcommand{\varsym}{x}
        1469 \newcommand{\varset}{Vr}
        1470 \cmdmthsetext{Var}[\varset][\varsym]
        1471 \usrmth{var}{}{argfun}[vr]
        1472 \usrmth{dim}{}{argfun}[dm]

\ConSig ...
    ... 1473 \newcommand{\consig}{C}
        1474 \usrmthlatupp{Con}{Sig}{sig}[\consig]
        1475 \newcommand{\consym}{c}
        1476 \newcommand{\conset}{Cn}
        1477 \cmdmthsetext{Con}[\conset][\consym]
        1478 \usrmth{con}{}{argfun}[cn]

\FunSig ...
    ... 1479 \newcommand{\funsig}{F}
        1480 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
        1481 \newcommand{\funsym}{f}
        1482 \newcommand{\funset}{Fn}
        1483 \cmdmthsetext{Fun}[\funset][\funsym]
        1484 \usrmth{fun}{}{argfun}[fn]
        1485 \usrmth{art}{}{argfun}[ar]

\TerSig ...
    ... 1486 \newcommand{\tersig}{T}
        1487 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
        1488 \newcommand{\tersym}{t}
        1489 \newcommand{\terset}{Tr}
        1490 \cmdmthsetext{Ter}[\terset][\tersym]
        1491 \usrmth{ter}{}{argfun}

\RelSig ...
    ... 1492 \newcommand{\relsig}{R}
        1493 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
        1494 \newcommand{\relsym}{r}
        1495 \newcommand{\relset}{Rl}
        1496 \cmdmthsetext{Rel}[\relset][\relsym]
        1497 \usrmth{rel}{}{argfun}[rl]

   \skm ...
        1498 \usrmth{skm}{}{argfun}

        1499 %%** Semantics ****************************************************************%%

\ConStr ...
    ... 1500 \newcommand{\constr}{C}
        1501 \usrmthlatupp{Con}{Str}{str}[\constr]

\FunStr ...
    ... 1502 \newcommand{\funstr}{F}
        1503 \usrmthlatupp{Fun}{Str}{str}[\funstr]

\TerStr ...
    ... 1504 \newcommand{\terstr}{T}
        1505 \usrmthlatupp{Ter}{Str}{str}[\terstr]

\RelStr ...
    ... 1506 \newcommand{\relstr}{R}
        1507 \usrmthlatupp{Rel}{Str}{str}[\relstr]
```

```
%%** First-Order Logics II ***************************************************%%

\DF ...
\IF
... % Dependence-Friendly Logic
\cmdtxtoparname{DF}

% Independence-Friendly Logic
\cmdtxtoparname{IF}

% Dependence/Independence-Friendly Logic
\cmdtxtoparname{DIF}

% Dence Logic
\cmdtxtoparname{DL}

% Team Logic
\cmdtxtoparname{TL}

% Alternating Dependence-Friendly Logic
\cmdtxtoparname{ADF}

% Alternating Independence-Friendly Logic
\cmdtxtoparname{AIF}

% Alternating Dependence/Independence-Friendly Logic
\cmdtxtoparname{ADIF}

   ...

%%** Syntax *******************************************************************%%

\LEExs ...
\LAAll
\newcommand{\leexssym}{\Sigma}
\usrmth{LEExs}{}{luop}[\leexssym]
\newcommand{\laallsym}{\Pi}
\usrmth{LAAll}{}{luop}[\laallsym]

%%** Semantics ****************************************************************%%

   ...

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

\SOL ...
... % Second-Order Logic
\cmdtxtoparname{SOL}[Sol]
\cmdtxtoparname{SO}

% Weak Second-Order Logic
\DeclareRobustCommand{\WSOL}
  {{\txtname{W}}\SOL}
\DeclareRobustCommand{\WSO}
  {{\txtname{W}}\SO}

% coWeak Second-Order Logic
\DeclareRobustCommand{\coWSOL}
  {{\txtname{coW}}\SOL}
\DeclareRobustCommand{\coWSO}
  {{\txtname{coW}}\SO}

% Monadic Second-Order Logic
\DeclareRobustCommand{\MSOL}
  {{\txtname{M}}\SOL}
\DeclareRobustCommand{\MSO}
  {{\txtname{M}}\SO}
```

```
% Weak Monadic Second-Order Logic
\DeclareRobustCommand{\WMSOL}
  {{\txtname{W}}\MSOL}
\DeclareRobustCommand{\WMSO}
  {{\txtname{W}}\MSO}

% coWeak Monadic Second-Order Logic
\DeclareRobustCommand{\coWMSOL}
  {{\txtname{coW}}\MSOL}
\DeclareRobustCommand{\coWMSO}
  {{\txtname{coW}}\MSO}
```

```
%%** Syntax ************************************************************%%
```

\FVarSet ...

```
\newcommand{\fvarsym}{x}
\newcommand{\fvarset}{FVr}
\cmdmthsetext{FVar}[\fvarset][\fvarsym]
```

\SVarSet ...

```
\newcommand{\svarsym}{X}
\newcommand{\svarset}{SVr}
\cmdmthsetext{SVar}[\svarset][\svarsym]
```

```
%%** Semantics *********************************************************%%
```

...

```
%%** Second-Order Logics II ********************************************%%
```

\TL ...
\CL
\PL
...

```
% Tree Logic
\cmdtxtoparname{TL}

% Weak Tree Logic
\DeclareRobustCommand{\WTL}
  {{\txtname{W}}\TL}

% coWeak Tree Logic
\DeclareRobustCommand{\coWTL}
  {{\txtname{coW}}\TL}

% Monadic Tree Logic
\DeclareRobustCommand{\MTL}
  {{\txtname{M}}\TL}

% Weak Monadic Tree Logic
\DeclareRobustCommand{\WMTL}
  {{\txtname{W}}\MTL}

% coWeak Monadic Tree Logic
\DeclareRobustCommand{\coWMTL}
  {{\txtname{coW}}\MTL}

% Chain Logic
\cmdtxtoparname{CL}

% Weak Chain Logic
\DeclareRobustCommand{\WCL}
  {{\txtname{W}}\CL}

% coWeak Chain Logic
\DeclareRobustCommand{\coWCL}
  {{\txtname{coW}}\CL}
```

```
% Monadic Chain Logic
\DeclareRobustCommand{\MCL}
  {{\txtname{M}}\CL}

% Weak Monadic Chain Logic
\DeclareRobustCommand{\WMCL}
  {{\txtname{W}}\MCL}

% coWeak Monadic Chain Logic
\DeclareRobustCommand{\coWMCL}
  {{\txtname{coW}}\MCL}

% Path Logic
\cmdtxtoparname{PL}

% Weak Path Logic
\DeclareRobustCommand{\WPL}
  {{\txtname{W}}\PL}

% coWeak Path Logic
\DeclareRobustCommand{\coWPL}
  {{\txtname{coW}}\PL}

% Monadic Path Logic
\DeclareRobustCommand{\MPL}
  {{\txtname{M}}\PL}

% Weak Monadic Path Logic
\DeclareRobustCommand{\WMPL}
  {{\txtname{W}}\MPL}

% coWeak Monadic Path Logic
\DeclareRobustCommand{\coWMPL}
  {{\txtname{coW}}\MPL}
%%** Syntax ************************************************************%%
  ...
%%** Semantics *********************************************************%%
  ...
%%** Modal Logics I *****************************************************%%

\ML ...
\GML
... % Modal Logic
\cmdtxtoparname{ML}

% Graded Modal Logic
\DeclareRobustCommand{\GML}
  {{\txtname{G}}\ML}

% Quantified Modal Logic
\DeclareRobustCommand{\QML}
  {{\txtname{Q}}\ML}
\DeclareRobustCommand{\EML}
  {\ensuremath{\exists}\ML}
\DeclareRobustCommand{\UML}
  {\ensuremath{\forall}\ML}
%%** Syntax ************************************************************%%

\Opr ...
\usrmth{Opr}{}{sym}[Op]
```

```
  \DMod ...
  \BMod 1668 \usrmth{DMod}{}{sym}[\Diamond]
        1669 \usrmth{BMod}{}{sym}[\Box]

   \Exs ...
   \All 1670 \DeclareRobustCommand{\Exs}
        1671   {\@ifstar{\@sexs}{\@exs}}
        1672 \DeclareRobustCommand{\@sexs}[1]
        1673   {\mth{\DMod}[#1]}
        1674 \DeclareRobustCommand{\@exs}[1]
        1675   {\mth{\defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
        1676 \DeclareRobustCommand{\All}
        1677   {\@ifstar{\@sall}{\@all}}
        1678 \DeclareRobustCommand{\@sall}[1]
        1679   {\mth{\BMod}[#1]}
        1680 \DeclareRobustCommand{\@all}[1]
        1681   {\mth{\defval{\argmid{\left[}{#1}{\right]}}{\BMod}}}
        1682 %%** Semantics *****************************************************************%%

\KrpStr ...
    ... 1683 \newcommand{\krpstr}{K}
        1684 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

\WrlSet ...
    ... 1685 \newcommand{\wrlsym}{w}
        1686 \newcommand{\wrlset}{W}
        1687 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
        1688 \cmdmthsymelm{iwrl}[\wrlsym_{I}]

\AccRel ...
\TrnRel 1689 \newcommand{\accsym}{R}
        1690 \cmdmthrel{Acc}[\accsym]
        1691 \cmdmthrel{Trn}[\accsym]

\labFun ...
        1692 \newcommand{\labsym}{\lambda}
        1693 \cmdmthfun{lab}[\labsym]

\PthSet ...
    ... 1694 \providecommand{\pthsym}{\pi}
        1695 \providecommand{\pthset}{Pth}
        1696 \cmdmthsetext{Pth}[\pthset][\pthsym]
        1697 \usrmth{path}{}{argfun}
        1698 %%** Modal Logics II ***********************************************************%%

    \MC ...
   \GMC 1699 % Mu Calculus
    ... 1700 \cmdtxtoparname{MC}[\ensuremath{\mu}-Calculus]
        1701
        1702 % Graded Mu Calculus
        1703 \DeclareRobustCommand{\GMC}
        1704   {{\txtname{G}}\MC}
        1705
        1706 % Quantified Mu Calculus
        1707 \DeclareRobustCommand{\QMC}
        1708   {{\txtname{Q}}\MC}
        1709 \DeclareRobustCommand{\EMC}
        1710   {\ensuremath{\exists}\MC}
        1711 \DeclareRobustCommand{\UMC}
        1712   {\ensuremath{\forall}\MC}
        1713
        1714 % Alternation-Free Mu Calculus
```

```
\DeclareRobustCommand{\AFMC}
  {{\txtname{AF}}\MC}

% Alternation-Free Graded Mu Calculus
\DeclareRobustCommand{\AFGMC}
  {{\txtname{AF}}\GMC}

% Quantified Alternation-Free Mu Calculus
\DeclareRobustCommand{\QAFMC}
  {{\txtname{Q}}\AFMC}
\DeclareRobustCommand{\EAFMC}
  {\ensuremath{\exists}\AFMC}
\DeclareRobustCommand{\UAFMC}
  {\ensuremath{\forall}\AFMC}

%%** Syntax ************************************************************%%
   ...
%%** Semantics *********************************************************%%
   ...
%%** Temporal Logics I **************************************************%%

\PTL ...
\LTL
% Propositional Temporal Logic
\cmdtxtoparname{PTL}

% Quantified Propositional Temporal Logic
\DeclareRobustCommand{\QPTL}
  {{\txtname{Q}}\PTL}
\DeclareRobustCommand{\EPTL}
  {\ensuremath{\exists}\PTL}
\DeclareRobustCommand{\UPTL}
  {\ensuremath{\forall}\PTL}

% Linear Temporal Logic
\cmdtxtoparname{LTL}

% Quantified Linear Temporal Logic
\DeclareRobustCommand{\QLTL}
  {{\txtname{Q}}\LTL}
\DeclareRobustCommand{\ELTL}
  {\ensuremath{\exists}\LTL}
\DeclareRobustCommand{\ULTL}
  {\ensuremath{\forall}\LTL}

%%** Syntax ************************************************************%%

 \X ...
\usrmth{X}{}{sym}[X\,]
\usrmth{F}{}{sym}[F\,]
\usrmth{G}{}{sym}[G\,]
\usrmth{U}{}{sym}[\,U\,]
\usrmth{R}{}{sym}[\,R\,]

 \Y ...
\usrmth{Y}{}{sym}[G\,]
\usrmth{P}{}{sym}[P\,]\let\SavePilcrow\P
\usrmth{H}{}{sym}[H\,]\let\SaveDoubleAcute\H
\usrmth{S}{}{sym}[\,S\,]\let\SaveSectionSymbol\S
\usrmth{B}{}{sym}[\,B\,]

%%** Semantics *********************************************************%%
```

```
        ...
1766 %%** Temporal Logics II ******************************************************%%

\PDL ...
\CTL 1767 % Propositional Dynamic Logic
 ... 1768 \cmdtxtoparname{PDL}
     1769
     1770 % Computation Tree Logic
     1771 \cmdtxtoparname{CTL}
     1772
     1773 % Weak Computation Tree Logic
     1774 \DeclareRobustCommand{\WCTL}
     1775   {{\txtname{W}}\CTL}
     1776
     1777 % Quantified Computation Tree Logic
     1778 \DeclareRobustCommand{\QCTL}
     1779   {{\txtname{Q}}\CTL}
     1780 \DeclareRobustCommand{\ECTL}
     1781   {\ensuremath{\exists}\CTL}
     1782 \DeclareRobustCommand{\UCTL}
     1783   {\ensuremath{\forall}\CTL}
     1784
     1785 % Improved Computation Tree Logic
     1786 \cmdtxtoparname{CTLP}[CTL$^{+}$]
     1787
     1788 % Weak Improved Computation Tree Logic
     1789 \DeclareRobustCommand{\WCTLP}
     1790   {{\txtname{W}}\CTLP}
     1791
     1792 % Quantified Improved Computation Tree Logic
     1793 \DeclareRobustCommand{\QCTLP}
     1794   {{\txtname{Q}}\CTLP}
     1795 \DeclareRobustCommand{\ECTLP}
     1796   {\ensuremath{\exists}\CTLP}
     1797 \DeclareRobustCommand{\UCTLP}
     1798   {\ensuremath{\forall}\CTLP}
     1799
     1800 % Full Computation Tree Logic
     1801 \cmdtxtoparname{CTLS}[CTL*]
     1802
     1803 % Weak Full Computation Tree Logic
     1804 \DeclareRobustCommand{\WCTLS}
     1805   {{\txtname{W}}\CTLS}
     1806
     1807 % Quantified Full Computation Tree Logic
     1808 \DeclareRobustCommand{\QCTLS}
     1809   {{\txtname{Q}}\CTLS}
     1810 \DeclareRobustCommand{\ECTLS}
     1811   {\ensuremath{\exists}\CTLS}
     1812 \DeclareRobustCommand{\UCTLS}
     1813   {\ensuremath{\forall}\CTLS}
     1814 %%** Syntax ************************************************************%%

  \E ...
  \A 1815 \usrmth{E}{}{sym}
     1816 \usrmth{A}{}{sym}
     1817 %%** Semantics ********************************************************%%
        ...
     1818 %%** Game Logics I *****************************************************%%

\ATL ...
 ...
```

```
% Alternating Temporal Logic
\cmdtxtoparname{ATL}

% Weak Alternating Tree Logic
\DeclareRobustCommand{\WATL}
  {{\txtname{W}}\ATL}

% Quantified Alternating Temporal Logic
\DeclareRobustCommand{\QATL}
  {{\txtname{Q}}\ATL}
\DeclareRobustCommand{\EATL}
  {\ensuremath{\exists}\ATL}
\DeclareRobustCommand{\UATL}
  {\ensuremath{\forall}\ATL}

% Improved Alternating Temporal Logic
\cmdtxtoparname{ATLP}[ATL$^{+}$]

% Weak Improved Alternating Tree Logic
\DeclareRobustCommand{\WATLP}
  {{\txtname{W}}\ATLP}

% Quantified Improved Alternating Temporal Logic
\DeclareRobustCommand{\QATLP}
  {{\txtname{Q}}\ATLP}
\DeclareRobustCommand{\EATLP}
  {\ensuremath{\exists}\ATLP}
\DeclareRobustCommand{\UATLP}
  {\ensuremath{\forall}\ATLP}

% Full Alternating Temporal Logic
\cmdtxtoparname{ATLS}[ATL*]

% Weak Full Alternating Tree Logic
\DeclareRobustCommand{\WATLS}
  {{\txtname{W}}\ATLS}

% Quantified Full Alternating Temporal Logic
\DeclareRobustCommand{\QATLS}
  {{\txtname{Q}}\ATLS}
\DeclareRobustCommand{\EATLS}
  {\ensuremath{\exists}\ATLS}
\DeclareRobustCommand{\UATLS}
  {\ensuremath{\forall}\ATLS}
%%** Syntax ************************************************************%%

\EExs ...
\AAll \DeclareRobustCommand{\EExs}[1]
  {\mth{\argmid{\langle\!\langle}{\defval{#1}{\emptyset}}{\rangle\!\rangle}}}
\DeclareRobustCommand{\AAll}[1]
  {\mth{\argmid{\left[\left[}{\defval{#1}{\emptyset}}{\right]\right]}}}
%%** Semantics ********************************************************%%

 \CGS ...
\cmdtxtname{CGS}

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

\AgnSet ...
    ... \newcommand{\agnsym}{a}
```

```
1873 \newcommand{\agnset}{Ag}
1874 \cmdmthsetext{Agn}[\agnset][\agnsym]

\ActSet ...
    ... 1875 \newcommand{\actsym}{c}
1876 \newcommand{\actset}{Ac}
1877 \cmdmthsetext{Act}[\actset][\actsym]

\PosSet ...
    ... 1878 \providecommand{\possym}{v}
1879 \providecommand{\posset}{Ps}
1880 \cmdmthsetext{Pos}[\posset][\possym]
1881 \cmdmthsymelm{ipos}[\possym_{I}]
1882 \cmdmthsymelm{fpos}[\possym_{F}]
1883 \cmdmthset{PPos}[\posset_{\PlrSym}]
1884 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1885 \cmdmthset{OPos}[\posset_{\OppSym}]
1886 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\SttSet ...
    ... 1887 \newcommand{\sttsym}{s}
1888 \newcommand{\sttset}{St}
1889 \cmdmthsetext{Stt}[\sttset][\sttsym]
1890 \cmdmthset{IStt}[\sttset_{I}]
1891 \cmdmthsymelm{istt}[\sttsym_{I}]
1892 \cmdmthset{FStt}[\sttset_{F}]
1893 \cmdmthsymelm{fstt}[\sttsym_{F}]

\DecSet ...
    ... 1894 \newcommand{\decsym}{d}
1895 \newcommand{\decset}{Dc}
1896 \cmdmthsetext{Dec}[\decset][\decsym]

\movFun ...
\movRel 1897 \newcommand{\movsym}{\tau}
1898 \cmdmthfun{mov}[\movsym]
1899 \cmdmthrel{mov}[\movsym]

\trnFun ...
\trnRel 1900 \newcommand{\trnsym}{\delta}
1901 \cmdmthfun{trn}[\trnsym]
1902 \cmdmthrel{trn}[\trnsym]

\PrfSet ...
1903 \providecommand{\prfsym}{\xi}
1904 \providecommand{\prfset}{Prf}
1905 \cmdmthsetext{Prf}[\prfset][\prfsym]

\HstSet ...
    ... 1906 \providecommand{\hstsym}{\varpi}
1907 \providecommand{\hstset}{Hst}
1908 \cmdmthsetext{Hst}[\hstset][\hstsym]
1909 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1910 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1911 \cmdmthset{OHst}[\hstset_{\OppSym}]
1912 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1913 \usrmth{hst}{}{argfun}

\PlaySet ...
    ... 1914 \providecommand{\playsym}{\pi}
1915 \providecommand{\playset}{Play}
1916 \cmdmthsetext{Play}[\playset][\playsym]
1917 \usrmth{play}{}{argfun}
```

```
\PlnSet ...
    ... \providecommand{\plnsym}{\rho}
        \providecommand{\plnset}{Pln}
        \cmdmthsetext{Pln}[\plnset][\plnsym]
        \cmdmthset{PPln}[\plnset_{\PlrSym}]
        \cmdmthsymelm{pPln}[\plnsym_{\PlrSym}]
        \cmdmthset{OPln}[\plnset_{\OppSym}]
        \cmdmthsymelm{oPln}[\plnsym_{\OppSym}]

\StrSet ...
    ... \providecommand{\strsym}{\sigma}
        \providecommand{\strset}{Str}
        \cmdmthsetext{Str}[\strset][\strsym]
        \cmdmthset{PStr}[\strset_{\PlrSym}]
        \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
        \cmdmthset{OStr}[\strset_{\OppSym}]
        \cmdmthsymelm{ostr}[\strsym_{\OppSym}]
        %%** Game Logics II ***********************************************************%%

    \PL ...
    ... % Plan Logic
        \cmdtxtoparname{PL}

        \DeclareRobustCommand{\EPL}
          {\ensuremath{\exists}\PL}
        \DeclareRobustCommand{\UPL}
          {\ensuremath{\forall}\PL}

        \DeclareRobustCommand{\FPL}
          {{\txtname{F}}\PL}

        \DeclareRobustCommand{\EFPL}
          {\ensuremath{\exists}\FPL}
        \DeclareRobustCommand{\UFPL}
          {\ensuremath{\forall}\FPL}

        % One-Goal Plan Logic
        \DeclareRobustCommandx{\OGPL}[3][1=, 2=, 3=]
          {\PL[#1][#2][1g\arglef{,}{#3}]}

        \DeclareRobustCommand{\EOGPL}
          {\ensuremath{\exists}\OGPL}
        \DeclareRobustCommand{\UOGPL}
          {\ensuremath{\forall}\OGPL}

        \DeclareRobustCommand{\FOGPL}
          {{\txtname{F}}\OGPL}

        \DeclareRobustCommand{\EFOGPL}
          {\ensuremath{\exists}\FOGPL}
        \DeclareRobustCommand{\UFOGPL}
          {\ensuremath{\forall}\FOGPL}

        % Conjunctive-Goal Plan Logic
        \DeclareRobustCommandx{\CGPL}[3][1=, 2=, 3=]
          {\PL[#1][#2][cg\arglef{,}{#3}]}

        \DeclareRobustCommand{\ECGPL}
          {\ensuremath{\exists}\CGPL}
        \DeclareRobustCommand{\UCGPL}
          {\ensuremath{\forall}\CGPL}

        \DeclareRobustCommand{\FCGPL}
```

```
  {{\txtname{F}}\CGPL}

\DeclareRobustCommand{\EFCGPL}
  {\ensuremath{\exists}\FCGPL}
\DeclareRobustCommand{\UFCGPL}
  {\ensuremath{\forall}\FCGPL}

% Disjunctive-Goal Plan Logic
\DeclareRobustCommandx{\DGPL}[3][1=, 2=, 3=]
  {\PL[#1][#2][dg\arglef{,}{#3}]}

\DeclareRobustCommand{\EDGPL}
  {\ensuremath{\exists}\DGPL}
\DeclareRobustCommand{\UDGPL}
  {\ensuremath{\forall}\DGPL}

\DeclareRobustCommand{\FDGPL}
  {{\txtname{F}}\DGPL}

\DeclareRobustCommand{\EFDGPL}
  {\ensuremath{\exists}\FDGPL}
\DeclareRobustCommand{\UFDGPL}
  {\ensuremath{\forall}\FDGPL}

% Alternating-Goal Plan Logic
\DeclareRobustCommandx{\AGPL}[3][1=, 2=, 3=]
  {\PL[#1][#2][ag\arglef{,}{#3}]}

\DeclareRobustCommand{\EAGPL}
  {\ensuremath{\exists}\AGPL}
\DeclareRobustCommand{\UAGPL}
  {\ensuremath{\forall}\AGPL}

\DeclareRobustCommand{\FAGPL}
  {{\txtname{F}}\AGPL}

\DeclareRobustCommand{\EFAGPL}
  {\ensuremath{\exists}\FAGPL}
\DeclareRobustCommand{\UFAGPL}
  {\ensuremath{\forall}\FAGPL}

% Extended-Goal Plan Logic
\DeclareRobustCommandx{\EGPL}[3][1=, 2=, 3=]
  {\PL[#1][#2][eg\arglef{,}{#3}]}

\DeclareRobustCommand{\EEGPL}
  {\ensuremath{\exists}\EGPL}
\DeclareRobustCommand{\UEGPL}
  {\ensuremath{\forall}\EGPL}

\DeclareRobustCommand{\FEGPL}
  {{\txtname{F}}\EGPL}

\DeclareRobustCommand{\EFEGPL}
  {\ensuremath{\exists}\FEGPL}
\DeclareRobustCommand{\UFEGPL}
  {\ensuremath{\forall}\FEGPL}

% Boolean-Goal Plan Logic
\DeclareRobustCommandx{\BGPL}[3][1=, 2=, 3=]
  {\PL[#1][#2][bg\arglef{,}{#3}]}

\DeclareRobustCommand{\EBGPL}
```

```
  {\ensuremath{\exists}\BGPL}
\DeclareRobustCommand{\UBGPL}
  {\ensuremath{\forall}\BGPL}

\DeclareRobustCommand{\FBGPL}
  {{\txtname{F}}\BGPL}

\DeclareRobustCommand{\EFBGPL}
  {\ensuremath{\exists}\FBGPL}
\DeclareRobustCommand{\UFBGPL}
  {\ensuremath{\forall}\FBGPL}

% Undefined-Goal Plan Logic
\DeclareRobustCommandx{\XGPL}[3][1=, 2=, 3=]
  {\PL[#1][#2][xg\arglef{,}{#3}]}

\DeclareRobustCommand{\EXGPL}
  {\ensuremath{\exists}\XGPL}
\DeclareRobustCommand{\UXGPL}
  {\ensuremath{\forall}\XGPL}

\DeclareRobustCommand{\FXGPL}
  {{\txtname{F}}\XGPL}

\DeclareRobustCommand{\EFXGPL}
  {\ensuremath{\exists}\FXGPL}
\DeclareRobustCommand{\UFXGPL}
  {\ensuremath{\forall}\FXGPL}
```

\SL ...

```
... % Strategy Logic
\cmdtxtoparname{SL}

\DeclareRobustCommand{\ESL}
  {\ensuremath{\exists}\SL}
\DeclareRobustCommand{\USL}
  {\ensuremath{\forall}\SL}

\DeclareRobustCommand{\FSL}
  {{\txtname{F}}\SL}

\DeclareRobustCommand{\EFSL}
  {\ensuremath{\exists}\FSL}
\DeclareRobustCommand{\UFSL}
  {\ensuremath{\forall}\FSL}

% One-Goal Strategy Logic
\DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][1g\arglef{,}{#3}]}

\DeclareRobustCommand{\EOGSL}
  {\ensuremath{\exists}\OGSL}
\DeclareRobustCommand{\UOGSL}
  {\ensuremath{\forall}\OGSL}

\DeclareRobustCommand{\FOGSL}
  {{\txtname{F}}\OGSL}

\DeclareRobustCommand{\EFOGSL}
  {\ensuremath{\exists}\FOGSL}
\DeclareRobustCommand{\UFOGSL}
  {\ensuremath{\forall}\FOGSL}

% Conjunctive-Goal Strategy Logic
```

```
\DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][cg\arglef{,}{#3}]}

\DeclareRobustCommand{\ECGSL}
  {\ensuremath{\exists}\CGSL}
\DeclareRobustCommand{\UCGSL}
  {\ensuremath{\forall}\CGSL}

\DeclareRobustCommand{\FCGSL}
  {{\txtname{F}}\CGSL}

\DeclareRobustCommand{\EFCGSL}
  {\ensuremath{\exists}\FCGSL}
\DeclareRobustCommand{\UFCGSL}
  {\ensuremath{\forall}\FCGSL}

% Disjunctive-Goal Strategy Logic
\DeclareRobustCommandx{\DGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][dg\arglef{,}{#3}]}

\DeclareRobustCommand{\EDGSL}
  {\ensuremath{\exists}\DGSL}
\DeclareRobustCommand{\UDGSL}
  {\ensuremath{\forall}\DGSL}

\DeclareRobustCommand{\FDGSL}
  {{\txtname{F}}\DGSL}

\DeclareRobustCommand{\EFDGSL}
  {\ensuremath{\exists}\FDGSL}
\DeclareRobustCommand{\UFDGSL}
  {\ensuremath{\forall}\FDGSL}

% Alternating-Goal Strategy Logic
\DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][ag\arglef{,}{#3}]}

\DeclareRobustCommand{\EAGSL}
  {\ensuremath{\exists}\AGSL}
\DeclareRobustCommand{\UAGSL}
  {\ensuremath{\forall}\AGSL}

\DeclareRobustCommand{\FAGSL}
  {{\txtname{F}}\AGSL}

\DeclareRobustCommand{\EFAGSL}
  {\ensuremath{\exists}\FAGSL}
\DeclareRobustCommand{\UFAGSL}
  {\ensuremath{\forall}\FAGSL}

% Extended-Goal Strategy Logic
\DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][eg\arglef{,}{#3}]}

\DeclareRobustCommand{\EEGSL}
  {\ensuremath{\exists}\EGSL}
\DeclareRobustCommand{\UEGSL}
  {\ensuremath{\forall}\EGSL}

\DeclareRobustCommand{\FEGSL}
  {{\txtname{F}}\EGSL}

\DeclareRobustCommand{\EFEGSL}
```

```
  {\ensuremath{\exists}\FEGSL}
\DeclareRobustCommand{\UFEGSL}
  {\ensuremath{\forall}\FEGSL}

% Boolean-Goal Strategy Logic
\DeclareRobustCommandx{\BGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][bg\arglef{,}{#3}]}

\DeclareRobustCommand{\EBGSL}
  {\ensuremath{\exists}\BGSL}
\DeclareRobustCommand{\UBGSL}
  {\ensuremath{\forall}\BGSL}

\DeclareRobustCommand{\FBGSL}
  {{\txtname{F}}\BGSL}

\DeclareRobustCommand{\EFBGSL}
  {\ensuremath{\exists}\FBGSL}
\DeclareRobustCommand{\UFBGSL}
  {\ensuremath{\forall}\FBGSL}

% Nested-Goal Strategy Logic
\DeclareRobustCommandx{\NGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][ng\arglef{,}{#3}]}

\DeclareRobustCommand{\ENGSL}
  {\ensuremath{\exists}\NGSL}
\DeclareRobustCommand{\UNGSL}
  {\ensuremath{\forall}\NGSL}

\DeclareRobustCommand{\FNGSL}
  {{\txtname{F}}\NGSL}

\DeclareRobustCommand{\EFNGSL}
  {\ensuremath{\exists}\FNGSL}
\DeclareRobustCommand{\UFNGSL}
  {\ensuremath{\forall}\FNGSL}

% Undefined-Goal Strategy Logic
\DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
  {\SL[#1][#2][xg\arglef{,}{#3}]}

\DeclareRobustCommand{\EXGSL}
  {\ensuremath{\exists}\XGSL}
\DeclareRobustCommand{\UXGSL}
  {\ensuremath{\forall}\XGSL}

\DeclareRobustCommand{\FXGSL}
  {{\txtname{F}}\XGSL}

\DeclareRobustCommand{\EFXGSL}
  {\ensuremath{\exists}\FXGSL}
\DeclareRobustCommand{\UFXGSL}
  {\ensuremath{\forall}\FXGSL}

%% Syntax ******************************************************************%%
```

\BndSet ...

```
\newcommand{\bndsym}{\flat}
\newcommand{\bndset}{Bn}
\cmdmthsetext{Bnd}[\bndset][\bndsym]
\cmdmthsymelm{idbnd}[\bndsym_{\text{id}}]
\usrmth{bnd}{}{argfun}
```

```
\psn ...
     \usrmth{psn}{}{argfun}

     %%** Semantics ********************************************************%%

\nxt ...
     \usrmth{nxt}{}{argfun}

     \fi
     %%*************************************************************************%%
     %%*************************************************************************%%
     %%** Macros for Automata ***********************************************%%
     %%*************************************************************************%%
     \ifaut@
     %%** Finite Word Automata **********************************************%%

\DFA ...
 ... \cmdtxtoparname{DFA}\cmdtxtoparname{NFA}\cmdtxtoparname{UFA}\cmdtxtoparname{AFA}

     \cmdtxtoparname{DWA}\cmdtxtoparname{NWA}\cmdtxtoparname{UWA}\cmdtxtoparname{AWA}

     \cmdtxtoparname{DFW}\cmdtxtoparname{NFW}\cmdtxtoparname{UFW}\cmdtxtoparname{AFW}
     \cmdtxtoparname{DWW}\cmdtxtoparname{NWW}\cmdtxtoparname{UWW}\cmdtxtoparname{AWW}
     \cmdtxtoparname{DBW}\cmdtxtoparname{NBW}\cmdtxtoparname{UBW}\cmdtxtoparname{ABW}
     \cmdtxtoparname{DCW}\cmdtxtoparname{NCW}\cmdtxtoparname{UCW}\cmdtxtoparname{ACW}
     \cmdtxtoparname{DPW}\cmdtxtoparname{NPW}\cmdtxtoparname{UPW}\cmdtxtoparname{APW}
     \cmdtxtoparname{DRW}\cmdtxtoparname{NRW}\cmdtxtoparname{URW}\cmdtxtoparname{ARW}
     \cmdtxtoparname{DSW}\cmdtxtoparname{NSW}\cmdtxtoparname{USW}\cmdtxtoparname{ASW}
     \cmdtxtoparname{DMW}\cmdtxtoparname{NMW}\cmdtxtoparname{UMW}\cmdtxtoparname{AMW}

\GFG ...
 ... \cmdtxtoparname{GFG}

     \cmdtxtoparname{PD}
     \cmdtxtoparname{PN}

     \cmdtxtoparname{LD}
     \cmdtxtoparname{LN}

     %%** Syntax *************************************************************%%

\AutName ...
     ... \newcommand{\autname}{A}
     \usrmthlatupp{Aut}{Name}{name}[\autname]
     \newcommand{\autset}{Aut}
     \cmdmthset{Aut}[\autset]

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

 \SymSet ...
     ... \newcommand{\symsym}{\sigma}
     \newcommand{\symset}{\Sigma}
     \cmdmthsetext{Sym}[\symset][\symsym]

 \SttSet ...
     ... \providecommand{\sttsym}{q}
     \providecommand{\sttset}{Q}
     \cmdmthsetext{Stt}[\sttset][\sttsym]
     \cmdmthset{IStt}[\sttset_{I}]
     \cmdmthsymelm{istt}[\sttsym_{I}]
     \cmdmthset{FStt}[\sttset_{F}]
     \cmdmthsymelm{fstt}[\sttsym_{F}]
```

```
\trnFun ...
\trnRel 2270 \providecommand{\trnsym}{\delta}
        2271 \cmdmthfun{trn}[\trnsym]
        2272 \cmdmthrel{trn}[\trnsym]
        2273 %%** Semantics ********************************************************%%

\WrdSet ...
    ... 2274 \newcommand{\wrdsym}{w}
        2275 \newcommand{\wrdset}{Wr}
        2276 \cmdmthsetext{Wrd}[\wrdset][\wrdsym]

  \Lang ...
        2277 \usrmth{Lang}{}{argfun}[L]

        2278 %%** Finite Tree Automata ***********************************************%%

   \DTA ...
    ... 2279 \cmdtxtoparname{DTA}\cmdtxtoparname{NTA}\cmdtxtoparname{UTA}\cmdtxtoparname{ATA}
        2280
        2281 \cmdtxtoparname{DFT}\cmdtxtoparname{NFT}\cmdtxtoparname{UFT}\cmdtxtoparname{AFT}
        2282 \cmdtxtoparname{DWT}\cmdtxtoparname{NWT}\cmdtxtoparname{UWT}\cmdtxtoparname{AWT}
        2283 \cmdtxtoparname{DBT}\cmdtxtoparname{NBT}\cmdtxtoparname{UBT}\cmdtxtoparname{ABT}
        2284 \cmdtxtoparname{DCT}\cmdtxtoparname{NCT}\cmdtxtoparname{UCT}\cmdtxtoparname{ACT}
        2285 \cmdtxtoparname{DPT}\cmdtxtoparname{NPT}\cmdtxtoparname{UPT}\cmdtxtoparname{APT}
        2286 \cmdtxtoparname{DRT}\cmdtxtoparname{NRT}\cmdtxtoparname{URT}\cmdtxtoparname{ART}
        2287 \cmdtxtoparname{DST}\cmdtxtoparname{NST}\cmdtxtoparname{UST}\cmdtxtoparname{AST}
        2288 \cmdtxtoparname{DMT}\cmdtxtoparname{NMT}\cmdtxtoparname{UMT}\cmdtxtoparname{AMT}
        2289 %%** Syntax *************************************************************%%

\TAutSet ...
        2290 \newcommand{\tautset}{TAut}
        2291 \cmdmthset{TAut}[\tautset]

 \DirSet ...
    ... 2292 \newcommand{\dirsym}{d}
        2293 \newcommand{\dirset}{\Lambda}
        2294 \cmdmthsetext{Dir}[\dirset][\dirsym]
        2295 %%** Semantics *************************************************************%%

\TreeSet ...
    ... 2296 \newcommand{\treesym}{T}
        2297 \newcommand{\treeset}{Tr}
        2298 \cmdmthsetext{Tree}[\treeset][\treesym]

   \wot ...
        2299 \usrmth{wot}{}{argfun}

        2300 \fi
        2301 %%*****************************************************************************%%
        2302 %%*****************************************************************************%%
        2303 %%** Format Tricks ***********************************************************%%
        2304 %%*****************************************************************************%%
        2305 \iffrm@

    ... ...
        2306 %%...

        2307 \fi
        2308 %%*****************************************************************************%%
```

```
%%*****************************************************************************%%
%%** Figure Tricks ************************************************************%%
%%*****************************************************************************%%
\iffig@
\RequirePackage{tikz}
\usetikzlibrary{calc,arrows,shapes,patterns,graphs,matrix}
\tikzstyle{every node} =
  [draw = none, fill = none, black, thin]
\tikzstyle{every edge} +=
  [black, thick]
\tikzstyle{noall} =
  [draw = none, fill = none]
\tikzstyle{nodraw} =
  [draw = none, fill = white]
\tikzstyle{nofill} =
  [draw = black, fill = none]
\ifwrpfig@
  % Wrapfig Package
  \RequirePackage{wrapfig}
\fi
\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Table Tricks *************************************************************%%
%%*****************************************************************************%%
\iftab@
... ...
%%...
\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Algorithm Tricks *********************************************************%%
%%*****************************************************************************%%
\ifalg@
\RequirePackage[ruled,vlined]{algorithm2e}
\DontPrintSemicolon
\SetInd{0.25em}{0.5em}
\setlength{\algomargin}{1.25em}
\Signature ...
\SetKw{Signature}{signature}
  \Macro ...
    ... \SetKwFor{Macro}{macro}{}{}
\SetKwFor{Function}{function}{}{}
\SetKwFor{Procedure}{procedure}{}{}
    \Let ...
\SetKwFor{Let}{let}{in}{}
   \True ...
  \False \SetKw{True}{true}
\SetKw{False}{false}
   \From ...
    ... \SetKw{From}{from}
\SetKw{To}{to}
\SetKw{DownTo}{downto}
```

```
\GoTo ...
   ... \SetKw{GoTo}{goto}
       \SetKw{Break}{break}
       \SetKw{Continue}{continue}

\Guess ...
   ... \SetKw{Guess}{guess}
       \SetKw{ExsGuess}{$\exists$-guess}
       \SetKw{AllGuess}{$\forall$-guess}

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

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

       \fi
       %%*****************************************************************************%%
       \endinput
       ⟨/package⟩
```

2 Change History

3 Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols

A

D

E

M

N

O

P

Q

R

S

T

U

V

W

X

Y