fmocdmac — FM's OCD LaTeX Macro*

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Abstract

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

1 Implementation & Usage

1 ⟨*package⟩

Required external packages:

2
3 `\RequirePackage{etoolbox}`
4
5 `\RequirePackage{xargs}`
6 `\RequirePackage{xspace}`
7 `\RequirePackage{stringstrings}`
8

Package options:

9
10 `%% Auxiliary packages`
11 `\newif\ifaux@ \aux@false`
12 `\DeclareOption{aux}{\aux@true}`
13 `\DeclareOption{noaux}{\aux@false}`
14
15
16 `%% AMS defaults`
17 `\newif\ifamsdef@ \amsdef@true`
18 `\DeclareOption{noamsdef}{\amsdef@false}`
19
20 `%% AMS theorem tools`
21 `\newif\ifamsthm@ \amsthm@true`
22 `\DeclareOption{noamsthm}{\amsthm@false}`
23
24 `%% Theorem tools`
25 `\newif\ifthmtls@ \thmtls@true`
26 `\DeclareOption{nothmtls}{\thmtls@false}`
27
28 `%% Enumeration tools`
29 `\newif\ifenmtls@ \enmtls@true`
30 `\DeclareOption{noenmtls}{\enmtls@false}`
31
32 `%% Hyper reference`
33 `\newif\ifhypref@ \hypref@true`
34 `\DeclareOption{nohypref}{\hypref@false}`
35
36 `%% Font tools`

*This document describes version v0.4 of the fmocdmac package, last revised 2021/05/10.

```
\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\text@false\com@false\gam@false\log@false\aut@false}

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


%% Elementary macros for text
\newif\iftext@ \text@false
\DeclareOption{text}{\text@true\txtgen@true}
\DeclareOption{notext}{\text@false}

%% Elementary macros for math
\newif\ifmath@ \math@false
\DeclareOption{math}{\math@true\mthgen@true}
\DeclareOption{nomath}{\math@false}


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

%% 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,text,math,com,gam,log,aut}%

\ProcessOptions\relax%

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

%%****************************************************************************%%
%%** Auxiliary Tricks ********************************************************%%
%%****************************************************************************%%
\ifaux@

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

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

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

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

\ifhypref@
  % Hyper References
  \RequirePackage{hyperref}
\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}}

%%****************************************************************************%%
%%****************************************************************************%%
%%** 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{`$\langle A\rangle$`}{`$\langle B\rangle$`}` evaluates to the empty string, if Argument $\langle A\rangle$ is empty, and to Argument $\langle B\rangle$, otherwise.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

`\argsep` **Separators:** `\argsep{`$\langle A\rangle$`}{`$\langle B\rangle$`}{`$\langle C\rangle$`}` evaluates to Argument $\langle C\rangle$, if Argument $\langle A\rangle$ is empty, to Argument $\langle A\rangle$, if Argument $\langle C\rangle$ is empty, and to the concatenation $\langle ABC\rangle$, otherwise.

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

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

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

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

```
\newcommand{\varcmd}[6]
  {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
    {\csname check#1arg\endcsname{\argsep{##1}{#4}{##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!

```
\newcommand{\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!

```
\newcommand{\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!

```
\newcommand{\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!

```
\newcommand{\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!

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

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

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

```
\newcommand{\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!

```
\newcommand{\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!

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

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

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

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

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

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

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

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

```
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** 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] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext}$"

```
\newcommandx{\newtxt}[5][1=, 3=, 4=, 5=]
  {\text{#1#2\txtsubsup[#1]{#3}{#4}#5}\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] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{Ext}$"

```
\newcommandx{\newtxtsty}[2][2=]
  {\newtxt[\defval{#2}{#1}]}
```

\newtxtarg ... to do!

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

```
\newcommandx{\newtxtarg}[7][1=, 3=, 4=, 5=, 7=]
  {\newtxt[#1]{#2}[#3][#4][#5\argmid{(}{#6}{)}#7]}
```

\newtxtargsty ... to do!

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

```
\newcommandx{\newtxtargsty}[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] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{(Arg)}$"

```
\newcommandx{\newtxtoarg}[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] = "$\mathtt{Name}_{\mathtt{sub}}^{\mathtt{sup}}\mathtt{(Arg)}$"

```
\newcommandx{\newtxtoargsty}[2][2=]
  {\newtxtoarg[\defval{#2}{#1}]}
```

\newtxtpar ... to do!

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

```
\newcommandx{\newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
  {\newtxt[#1]{#2}[#3][#4][#5\argmid{[}{#6}{]}#7]}
```

`\newtxtparsty` ... to do!

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

```
\newcommandx{\newtxtparsty}[2][2=]
  {\newtxtpar[\defval{#2}{#1}]}
```

`\newtxtopar` ... to do!

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

```
\newcommandx{\newtxtopar}[5][1=, 3=, 4=, 5=]
  {\newtxtpar[#1]{#2}[#3][#4][]{#5}[]}
```

`\newtxtoparsty` ... to do!

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

```
\newcommandx{\newtxtoparsty}[2][2=]
  {\newtxtopar[\defval{#2}{#1}]}
```

`\txtsubsup` ... to do!

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

```
\newcommand{\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]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext}$"

```
\newcommand{\txt}
  {\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]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext1(Arg)Ext2}$"

```
\newcommand{\txtarg}
  {\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]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{(Arg)}$"

```
\newcommand{\txtoarg}
  {\newtxtoargsty{\txtsty}}
```

`\txtpar` ... to do!

- `\txtpar{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}]\mathrm{Ext2}$"
- `\txtpar[\scshape]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "NAME$_{\text{SUB}}^{\text{SUP}}$EXT1[PAR]EXT2"
- `\txtpar[\bfseries]{Name}[sub][sup][Ext1]{Par}[Ext2]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{Ext1[Par]Ext2}$"

```
\newcommand{\txtpar}
  {\newtxtparsty{\txtsty}}
```

`\txtopar` ... to do!

- `\txtopar{Name}[sub][sup][Par]` = "$\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}]$"
- `\txtopar[\scshape]{Name}[sub][sup][Par]` = "NAME$_{\text{SUB}}^{\text{SUP}}$[PAR]"
- `\txtopar[\bfseries]{Name}[sub][sup][Par]` = "$\mathbf{Name}_{\mathbf{sub}}^{\mathbf{sup}}\mathbf{[Par]}$"

```
\newcommand{\txtopar}
  {\newtxtoparsty{\txtsty}}
```

`\txtsty` ... to do!

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

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

`\cmdtxt` ... to do!

- `\cmdtxt{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`; `\txtNewCmd{Name}[sub][sup][Ext]` = NAME$_{\text{SUB}}^{\text{SUP}}$EXT

```
\newcommand{\cmdtxt}[1]
  {\csdef{txt#1}{\newtxtsty{\csname txtsty#1\endcsname}}}
```

`\cmdtxtarg` ... to do!

- `\cmdtxtarg{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`; `\txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2]` = NAME$_{\text{SUB}}^{\text{SUP}}$EXT1(ARG)EXT2

```
\newcommand{\cmdtxtarg}[1]
  {\csdef{txtarg#1}{\newtxtargsty{\csname txtsty#1\endcsname}}}
```

`\cmdtxtoarg` ... to do!

- `\cmdtxtoarg{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`; `\txtoargNewCmd{Name}[sub][sup][Arg]` = NAME$_{\text{SUB}}^{\text{SUP}}$(ARG)

```
\newcommand{\cmdtxtoarg}[1]
  {\csdef{txtoarg#1}{\newtxtoargsty{\csname txtsty#1\endcsname}}}
```

`\cmdtxtpar` ... to do!

- `\cmdtxtpar{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`; `\txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2]` = NAME$_{\text{SUB}}^{\text{SUP}}$EXT1[PAR]EXT2

```
\newcommand{\cmdtxtpar}[1]
  {\csdef{txtpar#1}{\newtxtparsty{\csname txtsty#1\endcsname}}}
```

`\cmdtxtopar` ... to do!

- `\cmdtxtopar{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`; `\txtoparNewCmd{Name}[sub][sup][Par]` = NAME$_{\text{SUB}}^{\text{SUP}}$[PAR]

```
\newcommand{\cmdtxtopar}[1]
  {\csdef{txtopar#1}{\newtxtoparsty{\csname txtsty#1\endcsname}}}
```

`\cmdtxtall` ... to do!

- `\cmdtxtall{NewCmd}`; `\newcommand{txtstyNewCmd}{\scshape\ttfamily}`;
  `\txtNewCmd{Name}[sub][sup][Ext]` = NAME$_{\text{SUB}}^{\text{SUP}}$EXT
  `\txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2]` = NAME$_{\text{SUB}}^{\text{SUP}}$EXT1(ARG)EXT2
  `\txtoargNewCmd{Name}[sub][sup][Arg]` = NAME$_{\text{SUB}}^{\text{SUP}}$(ARG)
  `\txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2]` = NAME$_{\text{SUB}}^{\text{SUP}}$EXT1[PAR]EXT2
  `\txtoparNewCmd{Name}[sub][sup][Par]` = NAME$_{\text{SUB}}^{\text{SUP}}$[PAR]

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

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

`\usrtxt` ... to do!

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

```
\newcommandx{\usrtxt}[4][4=]
  {\csdef{#1#2}{\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]` = "$\mathtt{Name}_{sub}^{sup}Ext$"

```
\newcommandx{\newmth}[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]` = "$\mathtt{Name}_{sub}^{sup}Ext$"

```
\newcommandx{\newmthsty}[2][2=]
  {\newmth[\defval{#2}{#1}]}
```

`\newmtharg` ... to do!

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

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

`\newmthargsty` ... to do!

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

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

`\newmthoarg` ... to do!

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

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

`\newmthoargsty` ... to do!

- `\newmthoargsty{mathrm}{Name}[sub][sup][Arg]` = "$\mathrm{Name}_{sub}^{sup}(Arg)$"

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

```
\newcommandx{\newmthoargsty}[2][2=]
  {\newmthoarg[\defval{#2}{#1}]}
```

`\newmthpar` ... to do!

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

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

`\newmthparsty` ... to do!

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

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

`\newmthopar` ... to do!

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

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

`\newmthoparsty` ... to do!

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

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

`\mthsubsup` ... to do!

```
\newcommand{\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]` = "$\mathtt{Name}_{sub}^{sup}Ext$"

```
\newcommand{\mth}
  {\newmthsty{\mthsty}}
```

`\mtharg` ... to do!

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

```
\newcommand{\mtharg}
  {\newmthargsty{\mthsty}}
```

`\mthoarg` ... to do!

- `\mthoarg{Name}[sub][sup][Arg]` = "$Name_{sub}^{sup}(Arg)$"

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

```
\newcommand{\mthoarg}
  {\newmthoargsty{\mthsty}}
```

`\mthpar` ... to do!

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

```
\newcommand{\mthpar}
  {\newmthparsty{\mthsty}}
```

`\mthopar` ... to do!

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

```
\newcommand{\mthopar}
  {\newmthoparsty{\mthsty}}
```

`\mthsty` ... to do!

```
\newcommand{\mthsty}
  {}
```

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

`\cmdmth` ... to do!

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

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

`\cmdmtharg` ... to do!

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

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

`\cmdmthoarg` ... to do!

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

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

`\cmdmthpar` ... to do!

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

```
\newcommand{\cmdmthpar}[1]
  {\csdef{mthpar#1}{\newmthparsty{mthsty#1}}}
```

`\cmdmthopar` ... to do!

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

```
\newcommand{\cmdmthopar}[1]
  {\csdef{mthopar#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}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1(Arg)Ext2$
  \mthoargNewCmd{Name}[sub][sup][Arg] = $\texttt{Name}_{sub}^{sup}(Arg)$
  \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = $\texttt{Name}_{sub}^{sup}Ext1[Par]Ext2$
  \mthoparNewCmd{Name}[sub][sup][Par] = $\texttt{Name}_{sub}^{sup}[Par]$

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

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

\usrmth ... to do!

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

```
\newcommandx{\usrmth}[4][4=]
  {\csdef{#1#2}{\csname mth#3\endcsname{\defval{#4}{#1}}}}

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

\usrmthlatlow ... to do!

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

\usrmthlatupp ... to do!

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

\usrmthlatlet ... to do!

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

\usrmthgrklow ... to do!

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

\usrmthgrkupp ... to do!

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

\usrmthgrklet ... to do!

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

\usrmthlow ... to do!

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

\usrmthupp ... to do!

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

\usrmthlet ... to do!

```
\newcommandx{\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]` = $\boldsymbol{Name^{sup}_{sub}Ext}$
- `\txtargdef{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $\boldsymbol{Name^{sup}_{sub}Ext1(Arg)Ext2}$
- `\txtpardef{Name}[sub][sup][Ext1]{Par}[Ext2]` = $\boldsymbol{Name^{sup}_{sub}Ext1[Par]Ext2}$

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

`\cmdtxtdef` ... to do!

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

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

`\cmdtxtargdef` ... to do!

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

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

`\cmdtxtoargdef` ... to do!

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

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

`\cmdtxtpardef` ... to do!

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

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

`\cmdtxtopardef` ... to do!

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

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

`\txtabr, ...` ... to do!

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

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

`\cmdtxtabr` ... to do!

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

```
\newcommandx{\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]` = $newName_{\text{sub}}^{\text{sub}}ext1(arg)ext2$

```
\newcommandx{\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]` = $newName_{\text{sub}}^{\text{sub}}(arg)$

```
\newcommandx{\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]` = $newName_{\text{sub}}^{\text{sub}}ext1[par]ext2$

```
\newcommandx{\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]` = $newName_{\text{sub}}^{\text{sub}}[par]$

```
\newcommandx{\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}\newcommand{\txtstyname}{\mdseries\scshape\sffamily}
```

`\cmdtxtname` ... to do!

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

```
\newcommandx{\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]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}(\textsc{arg})\textsc{ext2}$

```
\newcommandx{\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]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}(\textsc{arg})$

```
\newcommandx{\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]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}[\textsc{par}]\textsc{ext2}$

```
\newcommandx{\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]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}[\textsc{par}]$

```
\newcommandx{\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}\newcommand{\txtstycom}{\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]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext}$

```
\newcommandx{\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]` = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}(\textsc{arg})\textsc{ext2}$

```
\newcommandx{\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] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}(\textsc{arg})$

```
\newcommandx{\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] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}\textsc{ext1}[\textsc{par}]\textsc{ext2}$

```
\newcommandx{\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] = $\textsc{newName}^{\textsc{sub}}_{\textsc{sub}}[\textsc{par}]$

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

\fi
%%%
```

\cmdmthoargname ... to do!

- \cmdmthoargname{CMDNAME};
  \CMDNAMEName[sub][sub][arg] = $\mathcal{CMDNAME}^{sub}_{sub}(arg)$
- \cmdmthoargname{cmdName}[NEWNAME];
  \cmdNameName[sub][sub][arg] = $\mathcal{NEWNAME}^{sub}_{sub}(arg)$

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

```
\newcommandx{\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] = $\mathcal{NEWNAME}^{sub}_{sub}[par]$

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

\mthfam, ... to do!

- \mthfam{NAME}[sub][sup][Ext] = $\mathscr{NAME}^{sup}_{sub}Ext$
- \mthargfam{NAME}[sub][sup][Ext1]{Arg}[Ext2] = $\mathscr{NAME}^{sup}_{sub}Ext1(Arg)Ext2$
- \mthparfam{NAME}[sub][sup][Ext1]{Par}[Ext2] = $\mathscr{NAME}^{sup}_{sub}Ext1[Par]Ext2$

```
%% Style for Families
\cmdmthall{fam}\newcommand{\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] = $\mathscr{NEWNAME}^{sub}_{sub}ext$

```
\newcommandx{\cmdmthfam}[2][2=]
  {\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] = $\mathscr{NEWNAME}^{sub}_{sub}ext1(arg)ext2$

```
\newcommandx{\cmdmthargfam}[2][2=]
  {\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] = $\mathscr{NEWNAME}^{sub}_{sub}(arg)$

```
\newcommandx{\cmdmthoargfam}[2][2=]
  {\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]` = $\mathscr{NEWNAME}^{sub}_{sub}ext1[par]ext2$

```
\newcommandx{\cmdmthparfam}[2][2=]
  {\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]` = $\mathscr{NEWNAME}^{sub}_{sub}[par]$

```
\newcommandx{\cmdmthoparfam}[2][2=]
  {\usrmth{#1}{Fam}{oparfam}[#2]}
```

`\mthcls, ...` ... to do!

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

```
%% Style for Classes
\cmdmthall{cls}\newcommand{\mthstycls}{\matheus}
```

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

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

`\cmdmthcls` ... to do!

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

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

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

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

```
\newcommandx{\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]` = $\mathcal{NEWNAME}^{sub}_{sub}[par]$

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

`\mthsig, ...` ... to do!

- `\mthsig{Name}[sub][sup][Ext]` = $\mathit{Name}^{sup}_{sub}Ext$
- `\mthargsig{Name}[sub][sup][Ext1]{Arg}[Ext2]` = $\mathit{Name}^{sup}_{sub}Ext1(Arg)Ext2$
- `\mthparsig{Name}[sub][sup][Ext1]{Par}[Ext2]` = $\mathit{Name}^{sup}_{sub}Ext1[Par]Ext2$

```
%% Style for Signatures
\cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}
```

`\aSig, ...` ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
$\mathcal{A}$, $\mathcal{B}$, $\mathcal{C}$, $\mathcal{D}$, $\mathcal{E}$, $\mathcal{F}$, $\mathcal{G}$, $\mathcal{H}$, $\mathcal{I}$, $\mathcal{J}$, $\mathcal{K}$, $\mathcal{L}$, $\mathcal{M}$, $\mathcal{N}$, $\mathcal{O}$, $\mathcal{P}$, $\mathcal{Q}$, $\mathcal{R}$, $\mathcal{S}$, $\mathcal{T}$, $\mathcal{U}$, $\mathcal{V}$, $\mathcal{W}$, $\mathcal{X}$, $\mathcal{Y}$, $\mathcal{Z}$
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]` = $\mathit{cmdName}^{sub}_{sub}ext$
- `\cmdmthsig{cmdName}[NewName]`;
  `\cmdNameSig[sub][sub][ext]` = $\mathit{NewName}^{sub}_{sub}ext$

```
\newcommandx{\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]` = $\mathit{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\newcommandx{\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]` = $\mathit{NewName}^{sub}_{sub}(arg)$

```
\newcommandx{\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]` = $\mathit{NewName}^{sub}_{sub}ext1[par]ext2$

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

\cmdmthoparsig ... to do!

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

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

\mthstr, ... to do!

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

```
%% Style for Structures
\cmdmthall{str}\newcommand{\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] = $\mathfrak{NewName}_{sub}^{sub}ext$

```
\newcommandx{\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] = $\mathfrak{NewName}_{sub}^{sub}ext1(arg)ext2$

```
\newcommandx{\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] = $\mathfrak{NewName}_{sub}^{sub}(arg)$

```
\newcommandx{\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] = $\mathfrak{NewName}_{sub}^{sub}ext1[par]ext2$

```
\newcommandx{\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]` = $\mathfrak{NewName}_{sub}^{sub}[par]$

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

`\mthset, ...` ... to do!

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

```
%% Style for Sets
\cmdmthall{set}\newcommand{\mthstyset}{\mathrm}
```

`\aSet, ...` ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
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]` = $\mathrm{NewName}_{sub}^{sub}ext$

```
\newcommandx{\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]` = $\mathrm{NewName}_{sub}^{sub}ext1(arg)ext2$

```
\newcommandx{\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]` = $\mathrm{NewName}_{sub}^{sub}(arg)$

```
\newcommandx{\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]` = $\mathrm{NewName}_{sub}^{sub}ext1[par]ext2$

```
\newcommandx{\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]` = $\mathrm{NewName}_{sub}^{sub}[par]$

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

`\cmdmthsetext` ... to do!

```
\newcommandx{\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}[Ext2]` = $Name_{sub}^{sup}Ext1(Arg)Ext2$
- `\mthparrel{Name}[sub][sup][Ext1]{Par}[Ext2]` = $Name_{sub}^{sup}Ext1[Par]Ext2$

```
%% Style for Relations
\cmdmthall{rel}\newcommand{\mthstyrel}{\mathit}
```

`\aRel, ...` ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, L, T, U, V, W, X, Y, Z
α, β, γ, δ, ϵ, 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]` = $NewName_{sub}^{sub}ext$

```
\newcommandx{\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]` = $NewName_{sub}^{sub}ext1(arg)ext2$

```
\newcommandx{\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]` = $NewName_{sub}^{sub}(arg)$

```
\newcommandx{\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]` = $NewName_{sub}^{sub}ext1[par]ext2$

```
\newcommandx{\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] = $NewName_{sub}^{sub}[par]$

```
\newcommandx{\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}[Ext2] = $\mathsf{Name}_{sub}^{sup}Ext1(Arg)Ext2$
- \mthparfun{Name}[sub][sup][Ext1]{Par}[Ext2] = $\mathsf{Name}_{sub}^{sup}Ext1[Par]Ext2$

```
%% Style for Functions
\cmdmthall{fun}\newcommand{\mthstyfun}{\mathsf}
```

\aFun, ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
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{Fun}{mthfun}
```

\cmdmthfun ... to do!

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

```
\newcommandx{\cmdmthfun}[2][2=]
  {\usrmth{#1}{Fun}{fun}[#2]}
```

\cmdmthargfun ... to do!

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

```
\newcommandx{\cmdmthargfun}[2][2=]
  {\usrmth{#1}{Fun}{argfun}[#2]}
```

\cmdmthoargfun ... to do!

- \cmdmthoargfun{cmdName};
  \cmdNameFun[sub][sub][arg] = $\mathsf{cmdName}_{sub}^{sub}(arg)$
- \cmdmthoargfun{cmdFun}[NewName];
  \cmdFunFun[sub][sub][arg] = $\mathsf{NewName}_{sub}^{sub}(arg)$

```
\newcommandx{\cmdmthoargfun}[2][2=]
  {\usrmth{#1}{Fun}{oargfun}[#2]}
```

\cmdmthparfun ... to do!

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

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

\cmdmthoparfun ... to do!

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

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

\mthsym, ... to do!

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

```
%% Style for Symbols
\cmdmthall{sym}\newcommand{\mthstysym}{\mathtt}
```

\aSym, ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
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, T, Φ, $\varPhi$, 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] = $\texttt{NewName}_{sub}^{sub}ext$

```
\newcommandx{\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] = $\texttt{NewName}_{sub}^{sub}ext1(arg)ext2$

```
\newcommandx{\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] = $\texttt{NewName}_{sub}^{sub}(arg)$

```
\newcommandx{\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] = $\texttt{NewName}_{sub}^{sub}ext1[par]ext2$

```
\newcommandx{\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] = $\texttt{NewName}_{sub}^{sub}[par]$

```
\newcommandx{\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}[Ext2] = $Name_{sub}^{sup}Ext1(Arg)Ext2$

- `\mthparelm{Name}[sub][sup][Ext1]{Par}[Ext2]` = $Name_{sub}^{sup}Ext1[Par]Ext2$

```
584 %% Style for Elements
585 \cmdmthall{elm}\newcommand{\mthstyelm}{\mathnormal}
```

`\aElm, ...` ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ϵ, 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

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

`\cmdmthelm` ... to do!

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

```
587 \newcommandx{\cmdmthelm}[2][2=]
588   {\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]` = $NewName_{sub}^{sub}ext1(arg)ext2$

```
589 \newcommandx{\cmdmthargelm}[2][2=]
590   {\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]` = $NewName_{sub}^{sub}(arg)$

```
591 \newcommandx{\cmdmthoargelm}[2][2=]
592   {\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]` = $NewName_{sub}^{sub}ext1[par]ext2$

```
593 \newcommandx{\cmdmthparelm}[2][2=]
594   {\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]` = $NewName_{sub}^{sub}[par]$

```
595 \newcommandx{\cmdmthoparelm}[2][2=]
596   {\usrmth{#1}{Elm}{oparelm}[#2]}

597 %%*************************************************************************%%
```

`\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]` = $NewName_{sub}^{sub}ext$

```
\newcommandx{\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]` = $\texttt{NewName}_{sub}^{sub}ext1(arg)ext2$
  `\cmdNameElm[sub][sub][ext1]{arg}[ext2]` = $NewName_{sub}^{sub}ext1(arg)ext2$

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

`\cmdmthoargsymelm` ... to do!

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

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

`\cmdmthparsymelm` ... to do!

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

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

`\cmdmthoparsymelm` ... to do!

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

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

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

`\mthlopr, ...` ... to do!

- `\mthlopr{\oplus}[sub][sup][Ext]` = $\oplus_{sub}^{sup}Ext$

```
%% Style for Sentences
\cmdmth{lopr}\newcommand{\mthstylopr}[1]{\textstyle\mathop{#1}}
```

`\cmdmthlopr` ... to do!

- `\cmdmthlopr{cmdName}`;
  `\cmdNameOpr[sub][sub][ext]` $= cmdName^{sub}_{sub}\,ext$
- `\cmdmthlopr{cmdName}[\oplus]`;
  `\cmdNameOpr[sub][sub][ext]` $= \oplus^{sub}_{sub}\,ext$

```
\newcommandx{\cmdmthlopr}[2][2=]
  {\usrmth{#1}{Opr}{lopr}[#2]}
```

`\mthlrel, ...` ... to do!

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

```
%% Style for Sentences
\cmdmth{lrel}\newcommand{\mthstylrel}{\mathrel}
```

`\cmdmthlrel` ... to do!

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

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

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

`\mthsnt, ...` ... to do!

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

```
%% Style for Sentences
\cmdmthall{snt}\newcommand{\mthstysnt}{\mathsf}
```

`\aSnt, ...` ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
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]` $= \mathsf{NewName}^{sub}_{sub}ext$

```
\newcommandx{\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]` $= \mathsf{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\newcommandx{\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]` $= \mathsf{NewName}^{sub}_{sub}(arg)$

```
\newcommandx{\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]` = $\mathsf{NewName}^{sub}_{sub}ext1[par]ext2$

```
\newcommandx{\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]` = $\mathsf{NewName}^{sub}_{sub}[par]$

```
\newcommandx{\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}[Ext2]` = $Name^{sup}_{sub}Ext1(Arg)Ext2$
- `\mthparfrm{Name}[sub][sup][Ext1]{Par}[Ext2]` = $Name^{sup}_{sub}Ext1[Par]Ext2$

```
%% Style for Formulae
\cmdmthall{frm}\newcommand{\mthstyfrm}{\mathit}
```

`\aFrm, ...` ... to do!

a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ϵ, 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]` = $NewName^{sub}_{sub}ext$

```
\newcommandx{\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]` = $NewName^{sub}_{sub}ext1(arg)ext2$

```
\newcommandx{\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]` = $NewName^{sub}_{sub}(arg)$

```
\newcommandx{\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] = $NewName^{sub}_{sub}ext1[par]ext2$

```
\newcommandx{\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] = $NewName^{sub}_{sub}[par]$

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

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

\mthmat, ... to do!

- \mthmat{Name}[sub][sup][Ext] = $\mathsf{Name}^{sup}_{sub}Ext$
- \mthargmat{Name}[sub][sup][Ext1]{Arg}[Ext2] = $\mathsf{Name}^{sup}_{sub}Ext1(Arg)Ext2$
- \mthparmat{Name}[sub][sup][Ext1]{Par}[Ext2] = $\mathsf{Name}^{sup}_{sub}Ext1[Par]Ext2$

```
%% Style for Matrices
\cmdmthall{mat}\newcommand{\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] = $\mathsf{cmdName}^{sub}_{sub}ext$
- \cmdmthmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext] = $\mathsf{NewName}^{sub}_{sub}ext$

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

\cmdmthargmat ... to do!

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

```
\newcommandx{\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] = $\mathsf{NewName}^{sub}_{sub}(arg)$

```
\newcommandx{\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]` = $\mathbf{NewName}^{sub}_{sub}ext1[par]ext2$

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

`\cmdmthoparmat` ... to do!

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

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

`\mthvec, ...` ... to do!

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

```
%% Style for Vectors
\cmdmthall{vec}\newcommand{\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]` = $\boldsymbol{NewName}^{sub}_{sub}ext$

```
\newcommandx{\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]` = $\boldsymbol{NewName}^{sub}_{sub}ext1(arg)ext2$

```
\newcommandx{\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]` = $\boldsymbol{NewName}^{sub}_{sub}(arg)$

```
\newcommandx{\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]` = $\boldsymbol{NewName}^{sub}_{sub}ext1[par]ext2$

```
\newcommandx{\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] = $\boldsymbol{NewName}^{sub}_{sub}[par]$

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

\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Elementary Macros for Text ************************************************%%
%%*****************************************************************************%%
\iftext@
%%** 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.]
```

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

\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}
```

\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 *************************************************%%
```

...

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

...

```
718 %%** French Abbreviations ***************************************************%%
```

\role • \role = *rôle*

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

```
720 %%*****************************************************************************%%
```

\Role • \Role = *Rôle*

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

```
722 %%** English Abbreviations ***************************************************%%
```

\aka • \aka = *a.k.a.*

```
723 \cmdtxtabr{aka}[a.k.a.]
```

\contd • \contd = *contd.*

```
724 \cmdtxtabr{contd}[contd.]
```

\iff • \iff = *iff*

```
725 \cmdtxtabr{iff}
```

\stx • \stx = *s.t.*

```
726 \cmdtxtabr{stx}[s.t.]
```

\resp • \resp = *resp.*

```
727 \cmdtxtabr{resp}[resp.]
```

\wrt • \wrt = *w.r.t.*

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

\wlogx • \wlogx = *w.l.o.g.*

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

```
730 %%*****************************************************************************%%
```

\Contd • \Contd = *Contd.*

```
731 \cmdtxtabr{Contd}[Contd.]
```

\Wlogx • \Wlogx = *W.l.o.g.*

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

```
733 \fi
734 %%*****************************************************************************%%
735 %%*****************************************************************************%%
736 %%** Elementary Macros for Math ***********************************************%%
737 %%*****************************************************************************%%
738 \ifmath@
739 %%** General Notation *********************************************************%%
```

\defeq, \seteq ...

```
740 \DeclareRobustCommand{\defeq}
741   {\mthlopr{\triangleq}}
742 \DeclareRobustCommand{\seteq}
743   {\mthlopr{:=}}
```

```
744 %%*****************************************************************************%%
```

```
   \implies, ...  ...
                  \DeclareRobustCommand{\implies}
                    {\mthlrel{\Rightarrow}}
                  \DeclareRobustCommand{\notimplies}
                    {\mthlrel{\not\Rightarrow}}

 \coimplies, ...  ...
                  \DeclareRobustCommand{\coimplies}
                    {\mthlrel{\Leftrightarrow}}
                  \DeclareRobustCommand{\notcoimplies}
                    {\mthlrel{\not\!\Leftrightarrow}}

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

   \cmodels, ...  ...
                  \DeclareRobustCommand{\cmodels}
                    {\mthlrel{\models}}
                  \DeclareRobustCommand{\notcmodels}
                    {\mthlrel{\not\models}}

    \cequiv, ...  ...
                  \DeclareRobustCommand{\cequiv}
                    {\mthlrel{\equiv}}
                  \DeclareRobustCommand{\notcequiv}
                    {\mthlrel{\not\equiv}}

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

\dual, \adj, ...  ...
                  \DeclareRobustCommand{\dual}[1]
                    {\mth{\overline{#1}}}
                  \DeclareRobustCommand{\adj}[1]
                    {\mth{\mathring{#1}}}
                  \DeclareRobustCommand{\der}[1]
                    {\mth{\widehat{#1}}}
                  \DeclareRobustCommand{\trn}[1]
                    {\mth{\widetilde{#1}}}

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

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

\enumeration, ...  ...
                  \varcmd{enumeration}{\mth}{}{,}{}{}
                  \varcmd{enumerationx}{\mth}{}{;}{}{}

  \sequence, ...  ...
                  \varcmd{sequence}{\mth}{\left[}{,}{\right]}{}
                  \varcmd{sequencel}{\mth}{\left[}{,}{\right.}{}
                  \varcmd{sequencer}{\mth}{\left.}{,}{\right]}{}
                  \varcmd{sequencex}{\mth}{\left[}{;}{\right]}{}
                  \varcmd{sequencexl}{\mth}{\left[}{;}{\right.}{}
                  \varcmd{sequencexr}{\mth}{\left.}{;}{\right]}{}

     \tuple, ...  ...
                  \varcmd{tuple}{\mth}{\left\langle}{,}{\right\rangle}{}
                  \varcmd{tuplel}{\mth}{\left\langle}{,}{\right.}{}
                  \varcmd{tupler}{\mth}{\left.}{,}{\right\rangle}{}
                  \varcmd{tuplex}{\mth}{\left\langle}{;}{\right\rangle}{}
                  \varcmd{tuplexl}{\mth}{\left\langle}{;}{\right.}{}
                  \varcmd{tuplexr}{\mth}{\left.}{;}{\right\rangle}{}
```

```
%%** Sets ********************************************************************%%

\set ...
\DeclareRobustCommand{\set}[2]
  {\argmid{\{}{\argsep{#1}{\mid}{#2}}{\}}}

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

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

\denot ...
\DeclareRobustCommand{\denot}[1]
  {\mth{\argmid{\lVert}{#1}{\rVert}}}

%%** Relations ****************************************************************%%

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

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

\dom, \cod, ... ...
\DeclareRobustCommand{\dom}
  {\mthargfun{dom}}
\DeclareRobustCommand{\cod}
  {\mthargfun{cod}}
\DeclareRobustCommand{\rng}
  {\mthargfun{rng}}
\DeclareRobustCommand{\img}
  {\mthargfun{img}}

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

\prj ...
\DeclareRobustCommand{\prj}
  {\mthargfun{prj}}

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

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

%%** 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}}}
```

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

\Aomega, \AOmega ...

```
\DeclareRobustCommand{\Aomega}
  {\mthargset{\omega}}
\DeclareRobustCommand{\AOmega}
  {\mthargset{\Omega}}
```

\Atheta, \ATheta ...

```
\DeclareRobustCommand{\Atheta}
  {\mthargset{\theta}}
\DeclareRobustCommand{\ATheta}
  {\mthargset{\Theta}}
```

\Aomicron, ...

```
\DeclareRobustCommand{\Aomicron}
  {\mthargset{\omicron}}
\DeclareRobustCommand{\AOmicron}
  {\mthargset{\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})}}

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

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

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

         \arg  ...
                \DeclareRobustCommand{\arg}
                  {\mthfun{arg}}

    \evn, \odd  ...
                \DeclareRobustCommand{\evn}
                  {\mthfun{evn}}
                \DeclareRobustCommand{\odd}
                  {\mthfun{odd}}

     \bst, ...  ...
                \DeclareRobustCommand{\bst}
                  {\mthfun{bst}}
                \DeclareRobustCommand{\argbst}
                  {\mthfun{arg bst}}

\min, \max, ...  ...
                \DeclareRobustCommand{\min}
                  {\mthfun{min}}
                \DeclareRobustCommand{\max}
                  {\mthfun{max}}
                \DeclareRobustCommand{\argmin}
                  {\mthfun{arg min}}
                \DeclareRobustCommand{\argmax}
                  {\mthfun{arg max}}

    \inf, \sup  ...
                \DeclareRobustCommand{\inf}
                  {\mthfun{inf}}
                \DeclareRobustCommand{\sup}
                  {\mthfun{sup}}

                %%** Sequences ************************************************************%%
```

\emptyseq ...

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

\fst, \lst ...

```
\DeclareRobustCommand{\fst}
  {\mthargfun{fst}}
\DeclareRobustCommand{\lst}
  {\mthargfun{lst}}
```

```
\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Macros for Computational-Complexity Classes ***************************%%
%%*****************************************************************************%%
\ifcom@
```

\defcomcls ... to do!

- \defcomcls{CompClass};

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

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

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

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

- \defcomcls{CompClass}[NewClass];

  \CompClass[sub][sup][ext] = $\textsc{NewClass}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$;
  \CoCompClass[sub][sup][ext] = $\textsc{CoNewClass}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \CompClassE[sub][sup][ext] = $\textsc{NewClass-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$;
  \CoCompClassE[sub][sup][ext] = $\textsc{CoNewClass-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \CompClassH[sub][sup][ext] = $\textsc{NewClass-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$;
  \CoCompClassH[sub][sup][ext] = $\textsc{CoNewClass-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$

\CompClassC[sub][sup][ext] = NewClass-complete$_{\text{SUB}}^{\text{SUP}}$EXT;
\CoCompClassC[sub][sup][ext] = CoNewClass-complete$_{\text{SUB}}^{\text{SUP}}$EXT

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

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

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

```
\newcommandx{\defcomcls}[2][2=]
  {\defcomclssem{#1}{\defval{#2}{#1}}%
  \defcomclssem{#1}{\defval{#2}{#1}}[Co]}
\newcommandx{\defcomclssem}[3][3=]
  {\defcomclsred{#3#1}{#2}[#3]%
  \defcomclsred{#3N#1}{#2}[#3N]%
  \defcomclsred{#3U#1}{#2}[#3U]%
  \defcomclsred{#3A#1}{#2}[#3A]}
\newcommandx{\defcomclsred}[3][3=]
  {\defcomclscmd{#1}{#2}[#3]%
  \defcomclscmd{#1E}{#2}[#3][-easy]%
  \defcomclscmd{#1H}{#2}[#3][-hard]%
  \defcomclscmd{#1C}{#2}[#3][-complete]}%
\newcommandx{\defcomclscmd}[4][3=, 4=]
  {\csdef{#1}{\txtcom{#3#2#4}}}

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

\Time, ...

- \Time[sub][sup][ext] = Time$_{\text{SUB}}^{\text{SUP}}$EXT
  \TimeE[sub][sup][ext] = Time-easy$_{\text{SUB}}^{\text{SUP}}$EXT
  \TimeH[sub][sup][ext] = Time-hard$_{\text{SUB}}^{\text{SUP}}$EXT
  \TimeC[sub][sup][ext] = Time-complete$_{\text{SUB}}^{\text{SUP}}$EXT
- \NTime[sub][sup][ext] = NTime$_{\text{SUB}}^{\text{SUP}}$EXT
  \NTimeE[sub][sup][ext] = NTime-easy$_{\text{SUB}}^{\text{SUP}}$EXT
  \NTimeH[sub][sup][ext] = NTime-hard$_{\text{SUB}}^{\text{SUP}}$EXT
  \NTimeC[sub][sup][ext] = NTime-complete$_{\text{SUB}}^{\text{SUP}}$EXT
- \UTime[sub][sup][ext] = UTime$_{\text{SUB}}^{\text{SUP}}$EXT
  \UTimeE[sub][sup][ext] = UTime-easy$_{\text{SUB}}^{\text{SUP}}$EXT
  \UTimeH[sub][sup][ext] = UTime-hard$_{\text{SUB}}^{\text{SUP}}$EXT
  \UTimeC[sub][sup][ext] = UTime-complete$_{\text{SUB}}^{\text{SUP}}$EXT
- \ATime[sub][sup][ext] = ATime$_{\text{SUB}}^{\text{SUP}}$EXT
  \ATimeE[sub][sup][ext] = ATime-easy$_{\text{SUB}}^{\text{SUP}}$EXT
  \ATimeH[sub][sup][ext] = ATime-hard$_{\text{SUB}}^{\text{SUP}}$EXT
  \ATimeC[sub][sup][ext] = ATime-complete$_{\text{SUB}}^{\text{SUP}}$EXT

943 \defcomcls{Time}

\Space, ...

- \Space[sub][sup][ext] = $\textsc{Space}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \SpaceE[sub][sup][ext] = $\textsc{Space-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \SpaceH[sub][sup][ext] = $\textsc{Space-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \SpaceC[sub][sup][ext] = $\textsc{Space-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \NSpace[sub][sup][ext] = $\textsc{NSpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NSpaceE[sub][sup][ext] = $\textsc{NSpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NSpaceH[sub][sup][ext] = $\textsc{NSpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NSpaceC[sub][sup][ext] = $\textsc{NSpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \USpace[sub][sup][ext] = $\textsc{USpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \USpaceE[sub][sup][ext] = $\textsc{USpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \USpaceH[sub][sup][ext] = $\textsc{USpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \USpaceC[sub][sup][ext] = $\textsc{USpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \ASpace[sub][sup][ext] = $\textsc{ASpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ASpaceE[sub][sup][ext] = $\textsc{ASpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ASpaceH[sub][sup][ext] = $\textsc{ASpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ASpaceC[sub][sup][ext] = $\textsc{ASpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$

944 \defcomcls{Space}

\LogTime, ...

- \LogTime[sub][sup][ext] = $\textsc{LogTime}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \LogTimeE[sub][sup][ext] = $\textsc{LogTime-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \LogTimeH[sub][sup][ext] = $\textsc{LogTime-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \LogTimeC[sub][sup][ext] = $\textsc{LogTime-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \NLogTime[sub][sup][ext] = $\textsc{NLogTime}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NLogTimeE[sub][sup][ext] = $\textsc{NLogTime-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NLogTimeH[sub][sup][ext] = $\textsc{NLogTime-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NLogTimeC[sub][sup][ext] = $\textsc{NLogTime-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \ULogTime[sub][sup][ext] = $\textsc{ULogTime}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ULogTimeE[sub][sup][ext] = $\textsc{ULogTime-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ULogTimeH[sub][sup][ext] = $\textsc{ULogTime-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ULogTimeC[sub][sup][ext] = $\textsc{ULogTime-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \ALogTime[sub][sup][ext] = $\textsc{ALogTime}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ALogTimeE[sub][sup][ext] = $\textsc{ALogTime-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ALogTimeH[sub][sup][ext] = $\textsc{ALogTime-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ALogTimeC[sub][sup][ext] = $\textsc{ALogTime-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$

945 \defcomcls{LogTime}

\LogSpace, ...

- \LogSpace[sub][sup][ext] = $\textsc{LogSpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \LogSpaceE[sub][sup][ext] = $\textsc{LogSpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \LogSpaceH[sub][sup][ext] = $\textsc{LogSpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \LogSpaceC[sub][sup][ext] = $\textsc{LogSpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \NLogSpace[sub][sup][ext] = $\textsc{NLogSpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NLogSpaceE[sub][sup][ext] = $\textsc{NLogSpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NLogSpaceH[sub][sup][ext] = $\textsc{NLogSpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \NLogSpaceC[sub][sup][ext] = $\textsc{NLogSpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \ULogSpace[sub][sup][ext] = $\textsc{ULogSpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ULogSpaceE[sub][sup][ext] = $\textsc{ULogSpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ULogSpaceH[sub][sup][ext] = $\textsc{ULogSpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ULogSpaceC[sub][sup][ext] = $\textsc{ULogSpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
- \ALogSpace[sub][sup][ext] = $\textsc{ALogSpace}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ALogSpaceE[sub][sup][ext] = $\textsc{ALogSpace-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ALogSpaceH[sub][sup][ext] = $\textsc{ALogSpace-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \ALogSpaceC[sub][sup][ext] = $\textsc{ALogSpace-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$

946 \defcomcls{LogSpace}

\PTime, ...

- \PTime[sub][sup][ext] = $\textsc{PTime}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \PTimeE[sub][sup][ext] = $\textsc{PTime-easy}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \PTimeH[sub][sup][ext] = $\textsc{PTime-hard}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$
  \PTimeC[sub][sup][ext] = $\textsc{PTime-complete}^{\textsc{sup}}_{\textsc{sub}}\textsc{ext}$

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

947 `\defcomcls{PTime}`

`\PSpace, ...`

- `\PSpace[sub][sup][ext]` = $\mathrm{PSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\PSpaceE[sub][sup][ext]` = $\mathrm{PSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\PSpaceH[sub][sup][ext]` = $\mathrm{PSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\PSpaceC[sub][sup][ext]` = $\mathrm{PSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\NPSpace[sub][sup][ext]` = $\mathrm{NPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NPSpaceE[sub][sup][ext]` = $\mathrm{NPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NPSpaceH[sub][sup][ext]` = $\mathrm{NPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NPSpaceC[sub][sup][ext]` = $\mathrm{NPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\UPSpace[sub][sup][ext]` = $\mathrm{UPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\UPSpaceE[sub][sup][ext]` = $\mathrm{UPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\UPSpaceH[sub][sup][ext]` = $\mathrm{UPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\UPSpaceC[sub][sup][ext]` = $\mathrm{UPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\APSpace[sub][sup][ext]` = $\mathrm{APSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\APSpaceE[sub][sup][ext]` = $\mathrm{APSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\APSpaceH[sub][sup][ext]` = $\mathrm{APSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\APSpaceC[sub][sup][ext]` = $\mathrm{APSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$

948 `\defcomcls{PSpace}`

`\QPTime, ...`

- `\QPTime[sub][sup][ext]` = $\mathrm{QPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\QPTimeE[sub][sup][ext]` = $\mathrm{QPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\QPTimeH[sub][sup][ext]` = $\mathrm{QPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\QPTimeC[sub][sup][ext]` = $\mathrm{QPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\NQPTime[sub][sup][ext]` = $\mathrm{NQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NQPTimeE[sub][sup][ext]` = $\mathrm{NQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NQPTimeH[sub][sup][ext]` = $\mathrm{NQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NQPTimeC[sub][sup][ext]` = $\mathrm{NQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\UQPTime[sub][sup][ext]` = $\mathrm{UQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\UQPTimeE[sub][sup][ext]` = $\mathrm{UQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\UQPTimeH[sub][sup][ext]` = $\mathrm{UQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\UQPTimeC[sub][sup][ext]` = $\mathrm{UQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\AQPTime[sub][sup][ext]` = $\mathrm{AQPTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\AQPTimeE[sub][sup][ext]` = $\mathrm{AQPTIME\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\AQPTimeH[sub][sup][ext]` = $\mathrm{AQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\AQPTimeC[sub][sup][ext]` = $\mathrm{AQPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$

949 `\defcomcls{QPTime}`

`\QPSpace, ...`

- `\QPSpace[sub][sup][ext]` = $\mathrm{QPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\QPSpaceE[sub][sup][ext]` = $\mathrm{QPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\QPSpaceH[sub][sup][ext]` = $\mathrm{QPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\QPSpaceC[sub][sup][ext]` = $\mathrm{QPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
- `\NQPSpace[sub][sup][ext]` = $\mathrm{NQPSPACE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NQPSpaceE[sub][sup][ext]` = $\mathrm{NQPSPACE\text{-}EASY}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NQPSpaceH[sub][sup][ext]` = $\mathrm{NQPSPACE\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$
  `\NQPSpaceC[sub][sup][ext]` = $\mathrm{NQPSPACE\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}$

- `\UQPSpace[sub][sup][ext]` = $\mathrm{UQPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UQPSpaceE[sub][sup][ext]` = $\mathrm{UQPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UQPSpaceH[sub][sup][ext]` = $\mathrm{UQPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UQPSpaceC[sub][sup][ext]` = $\mathrm{UQPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\AQPSpace[sub][sup][ext]` = $\mathrm{AQPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AQPSpaceE[sub][sup][ext]` = $\mathrm{AQPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AQPSpaceH[sub][sup][ext]` = $\mathrm{AQPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AQPSpaceC[sub][sup][ext]` = $\mathrm{AQPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$

```
\defcomcls{QPSpace}
```

`\ExpTime, ...`

- `\ExpTime[sub][sup][ext]` = $\mathrm{EXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\ExpTimeE[sub][sup][ext]` = $\mathrm{EXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\ExpTimeH[sub][sup][ext]` = $\mathrm{EXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\ExpTimeC[sub][sup][ext]` = $\mathrm{EXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\NExpTime[sub][sup][ext]` = $\mathrm{NEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\NExpTimeE[sub][sup][ext]` = $\mathrm{NEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\NExpTimeH[sub][sup][ext]` = $\mathrm{NEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\NExpTimeC[sub][sup][ext]` = $\mathrm{NEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\UExpTime[sub][sup][ext]` = $\mathrm{UEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UExpTimeE[sub][sup][ext]` = $\mathrm{UEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UExpTimeH[sub][sup][ext]` = $\mathrm{UEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UExpTimeC[sub][sup][ext]` = $\mathrm{UEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\AExpTime[sub][sup][ext]` = $\mathrm{AEXPTIME}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AExpTimeE[sub][sup][ext]` = $\mathrm{AEXPTIME\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AExpTimeH[sub][sup][ext]` = $\mathrm{AEXPTIME\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AExpTimeC[sub][sup][ext]` = $\mathrm{AEXPTIME\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$

```
\defcomcls{ExpTime}
```

`\ExpSpace, ...`

- `\ExpSpace[sub][sup][ext]` = $\mathrm{EXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\ExpSpaceE[sub][sup][ext]` = $\mathrm{EXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\ExpSpaceH[sub][sup][ext]` = $\mathrm{EXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\ExpSpaceC[sub][sup][ext]` = $\mathrm{EXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\NExpSpace[sub][sup][ext]` = $\mathrm{NEXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\NExpSpaceE[sub][sup][ext]` = $\mathrm{NEXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\NExpSpaceH[sub][sup][ext]` = $\mathrm{NEXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\NExpSpaceC[sub][sup][ext]` = $\mathrm{NEXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\UExpSpace[sub][sup][ext]` = $\mathrm{UEXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UExpSpaceE[sub][sup][ext]` = $\mathrm{UEXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UExpSpaceH[sub][sup][ext]` = $\mathrm{UEXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\UExpSpaceC[sub][sup][ext]` = $\mathrm{UEXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
- `\AExpSpace[sub][sup][ext]` = $\mathrm{AEXPSPACE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AExpSpaceE[sub][sup][ext]` = $\mathrm{AEXPSPACE\text{-}EASY}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AExpSpaceH[sub][sup][ext]` = $\mathrm{AEXPSPACE\text{-}HARD}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$
  `\AExpSpaceC[sub][sup][ext]` = $\mathrm{AEXPSPACE\text{-}COMPLETE}_{\mathrm{SUB}}^{\mathrm{SUP}}\mathrm{EXT}$

```
\defcomcls{ExpSpace}

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

...

```
\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Macros for Games ********************************************************%%
%%*****************************************************************************%%
\ifgam@
%%** Logic Games *************************************************************%%
```

`\SATG, ...` ...

```
%% Satisfiability Games
\cmdtxtoparname{SATG}[Sat]
```

```
963
964 %% Validity Games
965 \cmdtxtoparname{VALG}[Val]
966
967 %% Evaluation Games
968 \cmdtxtoparname{EVLG}[Evl]
969
970 %% Synthesis Games
971 \cmdtxtoparname{SYNG}[Syn]
972
973 %% Model-Checking Games
974 \cmdtxtoparname{MCG}[MC]
975
976 %% Ehrenfeucht-Fraisse Games
977 \cmdtxtoparname{EFG}[EF]

978 %%** Syntax ************************************************************%%

\PlrSym, \OppSym  ...
979 \newcommand{\plrsym}{E}
980 \cmdmthsym{Plr}[\plrsym]
981 \newcommand{\oppsym}{A}
982 \cmdmthsym{Opp}[\oppsym]

 \ArenaName, ...  ...
983 \newcommand{\arenaname}{A}
984 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

    \PosSet, ...  ...
985 \newcommand{\possym}{v}
986 \newcommand{\posset}{Ps}
987 \cmdmthsetext{Pos}[\posset][\possym]
988 \cmdmthsymelm{ipos}[\possym_{I}]
989 \cmdmthsymelm{fpos}[\possym_{F}]
990 \cmdmthset{PPos}[\posset_{\PlrSym}]
991 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
992 \cmdmthset{OPos}[\posset_{\OppSym}]
993 \cmdmthsymelm{opos}[\possym_{\OppSym}]

        \MovRel  ...
994 \newcommand{\movrel}{Mv}
995 \cmdmthrel{Mov}[\movrel]

  \GameName, ...  ...
996 \newcommand{\gamename}{\Game}
997 \usrmthlatupp{Game}{Name}{name}[\gamename]

        \WinSet  ...
998 \newcommand{\winset}{Wn}
999 \cmdmthset{Win}[\winset]

\ObsSet, \obsFun  ...
1000 \newcommand{\obsset}{Ob}
1001 \cmdmthset{Obs}[\obsset]
1002 \cmdmthfun{obs}

1003 %%** Semantics ********************************************************%%

\PthSet, \pthFun  ...
1004 \newcommand{\pthsym}{\pi}
1005 \newcommand{\pthset}{Pth}
1006 \cmdmthsetext{Pth}[\pthset][\pthsym]
1007 \cmdmthfun{pth}
```

\HstSet, ...

```
\newcommand{\hstsym}{\rho}
\newcommand{\hstset}{Hst}
\cmdmthsetext{Hst}[\hstset][\hstsym]
\cmdmthset{PHst}[\hstset_{\PlrSym}]
\cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
\cmdmthset{OHst}[\hstset_{\OppSym}]
\cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
\cmdmthfun{hst}
```

\PlaySet,\playFun ...

```
\newcommand{\playsym}{\pi}
\newcommand{\playset}{Play}
\cmdmthsetext{Play}[\playset][\playsym]
\cmdmthfun{play}
```

\StrSet, ...

```
\newcommand{\strsym}{\sigma}
\newcommand{\strset}{Str}
\cmdmthsetext{Str}[\strset][\strsym]
\cmdmthset{PStr}[\strset_{\PlrSym}]
\cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
\cmdmthset{OStr}[\strset_{\OppSym}]
\cmdmthsymelm{ostr}[\strsym_{\OppSym}]
```

\PrfSet, \prfFun ...

```
\newcommand{\prfsym}{\xi}
\newcommand{\prfset}{Prf}
\cmdmthsetext{Prf}[\prfset][\prfsym]
```

\preFun, \sucFun ...

```
\newcommand{\prefun}{pre}
\cmdmthoargfun{pre}[\prefun]
\newcommand{\sucfun}{suc}
\cmdmthoargfun{suc}[\sucfun]
```

\entFun, \escFun ...

```
\newcommand{\entfun}{ent}
\cmdmthoargfun{ent}[\entfun]
\newcommand{\escfun}{esc}
\cmdmthoargfun{esc}[\escfun]
```

\intFun, \outFun ...

```
\newcommand{\intfun}{int}
\cmdmthoargfun{int}[\intfun]
\newcommand{\outfun}{out}
\cmdmthoargfun{out}[\outfun]
```

\atrFun, \rchFun ...

```
\newcommand{\atrfun}{atr}
\cmdmthoargfun{atr}[\atrfun]
\newcommand{\rchfun}{rch}
\cmdmthoargfun{rch}[\rchfun]
```

\solFun ...

```
\newcommand{\solfun}{sol}
\cmdmthoargfun{sol}[\solfun]
```

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

```
\BG, ...  ...
1049 %% Buchi Games
1050 \cmdtxtoparname{BG}
1051
1052 %% Co-Buchi Games
1053 \cmdtxtoparname{CG}
1054
1055 %% Parity Games
1056 \cmdtxtoparname{PG}
1057
1058 %% Rabin Games
1059 \cmdtxtoparname{RG}
1060
1061 %% Streett Games
1062 \cmdtxtoparname{SG}
1063
1064 %% Muller Games
1065 \cmdtxtoparname{MG}

1066 %%** Syntax ************************************************************%%

\PrtSet, \prtFun  ...
1067 \newcommand{\prtsym}{p}
1068 \newcommand{\prtset}{Pr}
1069 \cmdmthsetext{Prt}[\prtset][\prtsym]
1070 \cmdmthfun{prt}[pr]

1071 %%** Semantics ************************************************************%%

    ...

1072 %%** Quantitative Games on Graph ******************************************%%

\EG, ...  ...
1073 %% Energy Games
1074 \cmdtxtoparname{EG}
1075
1076 %% Mean-Payoff Games
1077 \cmdtxtoparname{MPG}
1078
1079 %% Discounted-Payoff Games
1080 \cmdtxtoparname{DPG}

1081 %%** Syntax ************************************************************%%

\WghSet, \wghFun  ...
1082 \newcommand{\wghsym}{w}
1083 \newcommand{\wghset}{Wg}
1084 \cmdmthsetext{Wgh}[\wghset][\wghsym]
1085 \cmdmthfun{wgh}[wg]

1086 %%** Semantics ************************************************************%%

    ...

1087 \fi
1088 %%*************************************************************************%%
1089 %%*************************************************************************%%
1090 %%** Macros for Logics ****************************************************%%
1091 %%*************************************************************************%%
1092 \iflog@

1093 %%** 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]

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

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

    \Cnt, \Qnt  ...
                \usrmth{Cnt}{}{sym}[Cn]
                \usrmth{Qnt}{}{sym}[Qn]

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

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

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

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

    \pnf, \nnf  ...
                \cmdtxtabr{pnf}
                \cmdtxtabr{nnf}

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

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

```
\ValSet, ...  ...
1131 \newcommand{\valsym}{\xi}
1132 \newcommand{\valset}{Val}
1133 \cmdmthsetext{Val}[\valset][\valsym]

\AsgSet, ...  ...
1134 \newcommand{\asgsym}{\chi}
1135 \newcommand{\asgset}{Asg}
1136 \cmdmthsetext{Asg}[\asgset][\asgsym]

1137 %%** First-Order Logics I ************************************************%%

   \FOL, ...  ...
1138 % First-Order Logic
1139 \cmdtxtoparname{FOL}[Fol]
1140
1141 % Monadic First-Order Logic
1142 \DeclareRobustCommand{\MFOL}
1143   {{\txtname{M}}\FOL}

1144 %%** Syntax ***************************************************************%%

\VarSig, ...  ...
1145 \newcommand{\varsig}{V}
1146 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
1147 \newcommand{\varsym}{x}
1148 \newcommand{\varset}{Vr}
1149 \cmdmthsetext{Var}[\varset][\varsym]
1150 \usrmth{var}{}{argfun}[vr]
1151 \cmdmthfun{dim}[dm]\usrmth{dim}{}{argfun}[dm]

\ConSig, ...  ...
1152 \newcommand{\consig}{C}
1153 \usrmthlatupp{Con}{Sig}{sig}[\consig]
1154 \newcommand{\consym}{c}
1155 \newcommand{\conset}{Cn}
1156 \cmdmthsetext{Con}[\conset][\consym]
1157 \usrmth{con}{}{argfun}[cn]

\FunSig, ...  ...
1158 \newcommand{\funsig}{F}
1159 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
1160 \newcommand{\funsym}{f}
1161 \newcommand{\funset}{Fn}
1162 \cmdmthsetext{Fun}[\funset][\funsym]
1163 \usrmth{fun}{}{argfun}[fn]
1164 \cmdmthfun{art}[ar]\usrmth{art}{}{argfun}[ar]

\TerSig, ...  ...
1165 \newcommand{\tersig}{T}
1166 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
1167 \newcommand{\tersym}{t}
1168 \newcommand{\terset}{Tr}
1169 \cmdmthsetext{Ter}[\terset][\tersym]
1170 \usrmth{ter}{}{argfun}

\RelSig, ...  ...
1171 \newcommand{\relsig}{R}
1172 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
1173 \newcommand{\relsym}{r}
1174 \newcommand{\relset}{Rl}
1175 \cmdmthsetext{Rel}[\relset][\relsym]
1176 \usrmth{rel}{}{argfun}[rl]
```

```
        \skm  ...
1177 \usrmth{skm}{}{argfun}

1178 %%** Semantics ********************************************************%%

 \ConStr, ...  ...
1179 \newcommand{\constr}{C}
1180 \usrmthlatupp{Con}{Str}{str}[\constr]

 \FunStr, ...  ...
1181 \newcommand{\funstr}{F}
1182 \usrmthlatupp{Fun}{Str}{str}[\funstr]

 \TerStr, ...  ...
1183 \newcommand{\terstr}{T}
1184 \usrmthlatupp{Ter}{Str}{str}[\terstr]

 \RelStr, ...  ...
1185 \newcommand{\relstr}{R}
1186 \usrmthlatupp{Rel}{Str}{str}[\relstr]

1187 %%** First-Order Logics II *****************************************************%%

     \IF, ...  ...
1188 % Independence-Friendly Logic
1189 \cmdtxtoparname{IF}

    ...
1190 %%** Syntax ***********************************************************%%

    ...
1191 %%** Semantics ********************************************************%%

    ...
1192 %%** Second-Order Logics I ******************************************************%%

    \SOL, ...  ...
1193 % Second-Order Logic
1194 \cmdtxtoparname{SOL}[Sol]
1195
1196 % Monadic Second-Order Logic
1197 \DeclareRobustCommand{\MSOL}
1198   {{\txtname{M}}\SOL}

1199 %%** Syntax ***********************************************************%%

\FVarSet, ...  ...
1200 \newcommand{\fvarsym}{x}
1201 \newcommand{\fvarset}{FVr}
1202 \cmdmthsetext{FVar}[\fvarset][\fvarsym]

\SVarSet, ...  ...
1203 \newcommand{\svarsym}{X}
1204 \newcommand{\svarset}{SVr}
1205 \cmdmthsetext{SVar}[\svarset][\svarsym]

1206 %%** Semantics ********************************************************%%

    ...
1207 %%** Second-Order Logics II *****************************************************%%
```

\TL, \PL, ...

```
% Tree Logic
\cmdtxtoparname{TL}

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

% Path Logic
\cmdtxtoparname{PL}

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

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

...

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

...

```
%%** Modal Logics I ****************************************************%%
```

\ML, \QML, ...

```
% Modal Logic
\cmdtxtoparname{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 ...

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

\Exs, \All ...

```
\DeclareRobustCommand{\Exs}[1]
  {\mth{\defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
\DeclareRobustCommand{\All}[1]
  {\mth{\defval{\argmid{\left[}{#1}{\right]}}{\BMod}}}
```

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

\KrpStr, ...

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

\WrlSet, ...

```
\newcommand{\wrlsym}{w}
\newcommand{\wrlset}{W}
\cmdmthsetext{Wrl}[\wrlset][\wrlsym]
\cmdmthsymelm{iwrl}[\wrlsym_{I}]
```

\AccRel, \TrnRel ...

```
\newcommand{\accsym}{R}
\cmdmthrel{Acc}[\accsym]
\cmdmthrel{Trn}[\accsym]
```

\labFun ...

```
\newcommand{\labsym}{\lambda}
\cmdmthfun{lab}[\labsym]
```

\PthSet, \pthFun ...

```
\providecommand{\pthsym}{\pi}
\providecommand{\pthset}{Pth}
\cmdmthsetext{Pth}[\pthset][\pthsym]
\cmdmthfun{pth}
```

```
%%** Modal Logics II ********************************************************%%
```

\MC, \QMC, ...

```
% Mu Calculus
\cmdtxtoparname{MC}[\ensuremath{\mu}-Calculus]

% Quantified Modal Logic
\DeclareRobustCommand{\QMC}
  {{\txtname{Q}}\MC}
\DeclareRobustCommand{\EMC}
  {\ensuremath{\exists}\MC}
\DeclareRobustCommand{\UMC}
  {\ensuremath{\forall}\MC}
```

```
%%** 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, ...  ...
1294 \usrmth{X}{}{sym}[X\,]
1295 \usrmth{F}{}{sym}[F\,]
1296 \usrmth{G}{}{sym}[G\,]
1297 \usrmth{U}{}{sym}[\,U\,]
1298 \usrmth{R}{}{sym}[\,R\,]

\Y, ...  ...
1299 \usrmth{Y}{}{sym}[G\,]
1300 \usrmth{P}{}{sym}[P\,]\let\SavePilcrow\P
1301 \usrmth{H}{}{sym}[H\,]\let\SaveDoubleAcute\H
1302 \usrmth{S}{}{sym}[\,S\,]\let\SaveSectionSymbol\S
1303 \usrmth{B}{}{sym}[\,B\,]

1304 %%** Semantics ****************************************************************%%

   ...

1305 %%** Temporal Logics II ********************************************************%%

\PDL, \CTL, ...  ...
1306
1307 % Propositional Dynamic Logic
1308 \cmdtxtoparname{PDL}
1309
1310 % Computation Tree Logic
1311 \cmdtxtoparname{CTL}
1312
1313 % Quantified Computation Tree Logic
1314 \DeclareRobustCommand{\QCTL}
1315   {{\txtname{Q}}\CTL}
1316 \DeclareRobustCommand{\ECTL}
1317   {\ensuremath{\exists}\CTL}
1318 \DeclareRobustCommand{\UCTL}
1319   {\ensuremath{\forall}\CTL}
1320
1321 % Improved Computation Tree Logic
1322 \cmdtxtoparname{CTLP}[CTL$^{+}$]
1323
1324 % Quantified Improved Computation Tree Logic
1325 \DeclareRobustCommand{\QCTLP}
1326   {{\txtname{Q}}\CTLP}
1327 \DeclareRobustCommand{\ECTLP}
1328   {\ensuremath{\exists}\CTLP}
1329 \DeclareRobustCommand{\UCTLP}
1330   {\ensuremath{\forall}\CTLP}
1331
1332 % Full Computation Tree Logic
1333 \cmdtxtoparname{CTLS}[CTL*]
1334
1335 % Quantified Full Computation Tree Logic
1336 \DeclareRobustCommand{\QCTLS}
1337   {{\txtname{Q}}\CTLS}
1338 \DeclareRobustCommand{\ECTLS}
1339   {\ensuremath{\exists}\CTLS}
1340 \DeclareRobustCommand{\UCTLS}
1341   {\ensuremath{\forall}\CTLS}

1342 %%** Syntax ********************************************************************%%

 \E, \A  ...
1343 \usrmth{E}{}{sym}
1344 \usrmth{A}{}{sym}

1345 %%** Semantics ****************************************************************%%
```

```
                ...
1346 %%** Strategic Logics I ****************************************************%%

   \ATL, ...  ...
1347 % Alternating Temporal Logic
1348 \cmdtxtoparname{ATL}
1349
1350 % Quantified Alternating Temporal Logic
1351 \DeclareRobustCommand{\QATL}
1352   {{\txtname{Q}}\ATL}
1353 \DeclareRobustCommand{\EATL}
1354   {\ensuremath{\exists}\ATL}
1355 \DeclareRobustCommand{\UATL}
1356   {\ensuremath{\forall}\ATL}
1357
1358 % Improved Alternating Temporal Logic
1359 \cmdtxtoparname{ATLP}[ATL$^{+}$]
1360
1361 % Quantified Improved Alternating Temporal Logic
1362 \DeclareRobustCommand{\QATLP}
1363   {{\txtname{Q}}\ATLP}
1364 \DeclareRobustCommand{\EATLP}
1365   {\ensuremath{\exists}\ATLP}
1366 \DeclareRobustCommand{\UATLP}
1367   {\ensuremath{\forall}\ATLP}
1368
1369 % Full Alternating Temporal Logic
1370 \cmdtxtoparname{ATLS}[ATL*]
1371
1372 % Quantified Full Alternating Temporal Logic
1373 \DeclareRobustCommand{\QATLS}
1374   {{\txtname{Q}}\ATLS}
1375 \DeclareRobustCommand{\EATLS}
1376   {\ensuremath{\exists}\ATLS}
1377 \DeclareRobustCommand{\UATLS}
1378   {\ensuremath{\forall}\ATLS}

1379 %%** Syntax ************************************************************%%

\EExs, \AAll  ...
1380 \DeclareRobustCommand{\EExs}[1]
1381   {\mth{\argmid{\langle\!\langle}{\defval{#1}{\emptyset}}{\rangle\!\rangle}}}
1382 \DeclareRobustCommand{\AAll}[1]
1383   {\mth{\argmid{\left[\left[}{\defval{#1}{\emptyset}}{\right]\right]}}}

1384 %%** Semantics ********************************************************%%

        \CGS  ...
1385 \cmdtxtname{CGS}

\CGSStr, ...  ...
1386 \newcommand{\cgsstr}{G}
1387 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]

\AgnSet, ...  ...
1388 \newcommand{\agnsym}{a}
1389 \newcommand{\agnset}{Ag}
1390 \cmdmthsetext{Agn}[\agnset][\agnsym]

\PosSet, ...  ...
1391 \providecommand{\possym}{v}
1392 \providecommand{\posset}{Ps}
1393 \cmdmthsetext{Pos}[\posset][\possym]
```

```
\cmdmthsymelm{ipos}[\possym_{I}]
\cmdmthsymelm{fpos}[\possym_{F}]
\cmdmthset{PPos}[\posset_{\PlrSym}]
\cmdmthsymelm{ppos}[\possym_{\PlrSym}]
\cmdmthset{OPos}[\posset_{\OppSym}]
\cmdmthsymelm{opos}[\possym_{\OppSym}]
```

`\SttSet, ...` ...

```
\newcommand{\sttsym}{s}
\newcommand{\sttset}{St}
\cmdmthsetext{Stt}[\sttset][\sttsym]
\cmdmthset{ISt}[\sttset_{I}]
\cmdmthsymelm{istt}[\sttsym_{I}]
\cmdmthset{FStt}[\sttset_{F}]
\cmdmthsymelm{fstt}[\sttsym_{F}]
```

`\ActSet, ...` ...

```
\newcommand{\actsym}{c}
\newcommand{\actset}{Ac}
\cmdmthsetext{Act}[\actset][\actsym]
```

`\DecSet, ...` ...

```
\newcommand{\decsym}{d}
\newcommand{\decset}{Dc}
\cmdmthsetext{Dec}[\decset][\decsym]
```

`\movFun` ...

```
\newcommand{\movsym}{\tau}
\cmdmthfun{mov}[\movsym]
```

`\HstSet, ...` ...

```
\providecommand{\hstsym}{\rho}
\providecommand{\hstset}{Hst}
\cmdmthsetext{Hst}[\hstset][\hstsym]
\cmdmthset{PHst}[\hstset_{\PlrSym}]
\cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
\cmdmthset{OHst}[\hstset_{\OppSym}]
\cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
\cmdmthfun{hst}
```

`\PlaySet,\playFun` ...

```
\providecommand{\playsym}{\pi}
\providecommand{\playset}{Play}
\cmdmthsetext{Play}[\playset][\playsym]
\cmdmthfun{play}
```

`\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}]
```

`\PrfSet, \prfFun` ...

```
\providecommand{\prfsym}{\xi}
\providecommand{\prfset}{Prf}
\cmdmthsetext{Prf}[\prfset][\prfsym]

%%** Strategic Logics II ***************************************************%%
```

\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}}\xGSL}

\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}}\xGSL}

```

```
\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}}\xGSL}

\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}}\xGSL}

\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}}\xGSL}

\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}}\xGSL}

\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]
\usrmth{bnd}{}{argfun}

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

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

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

\fi
%%*****************************************************************************%%
%%*****************************************************************************%%
%%** Macros for Automata ******************************************************%%
%%*****************************************************************************%%
\ifaut@
%%** Finite Word Automata *****************************************************%%

\DWA, ...  ...
\cmdtxtoparname{DWA}\cmdtxtoparname{NWA}\cmdtxtoparname{UWA}\cmdtxtoparname{AWA}

\cmdtxtoparname{DFW}\cmdtxtoparname{NFW}\cmdtxtoparname{UFW}\cmdtxtoparname{AFW}
\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, \PD, ...  ...
1614 \cmdtxtoparname{GFG}
1615
1616 \cmdtxtoparname{PD}
1617
1618 %% ...

1619 %%** Syntax ************************************************************%%

\AutName, ...  ...
1620 \newcommand{\autname}{A}
1621 \usrmthlatupp{Aut}{Name}{name}[\autname]
1622 \newcommand{\autset}{Aut}
1623 \cmdmthset{Aut}[\autset]

    \WAutSet  ...
1624 \newcommand{\wautset}{WAut}
1625 \cmdmthset{WAut}[\wautset]

 \SttSet, ...  ...
1626 \def\sttsym{q}
1627 \def\sttset{Q}
1628 \cmdmthsetext{Stt}[\sttset][\sttsym]
1629 \cmdmthset{IStt}[\sttset_{I}]
1630 \cmdmthsymelm{istt}[\sttsym_{I}]
1631 \cmdmthset{FStt}[\sttset_{F}]
1632 \cmdmthsymelm{fstt}[\sttsym_{F}]

 \SymSet, ...  ...
1633 \newcommand{\symsym}{\sigma}
1634 \newcommand{\symset}{\Sigma}
1635 \cmdmthsetext{Sym}[\symset][\symsym]

     \trnFun  ...
1636 \newcommand{\trnsym}{\delta}
1637 \cmdmthfun{trn}[\trnsym]

1638 %%** Semantics ***********************************************************%%

    \LangFun  ...
1639 \newcommand{\langfun}{L}
1640 \cmdmthfun{Lang}[\langfun]

 \WrdSet, ...  ...
1641 \newcommand{\wrdsym}{w}
1642 \newcommand{\wrdset}{Wr}
1643 \cmdmthsetext{Wrd}[\wrdset][\wrdsym]

1644 %%** Finite Tree Automata ************************************************%%

   \DTA, ...  ...
1645 \cmdtxtoparname{DTA}\cmdtxtoparname{NTA}\cmdtxtoparname{UTA}\cmdtxtoparname{ATA}
1646
1647 \cmdtxtoparname{DFT}\cmdtxtoparname{NFT}\cmdtxtoparname{UFT}\cmdtxtoparname{AFT}
1648 \cmdtxtoparname{DBT}\cmdtxtoparname{NBT}\cmdtxtoparname{UBT}\cmdtxtoparname{ABT}
1649 \cmdtxtoparname{DCT}\cmdtxtoparname{NCT}\cmdtxtoparname{UCT}\cmdtxtoparname{ACT}
1650 \cmdtxtoparname{DPT}\cmdtxtoparname{NPT}\cmdtxtoparname{UPT}\cmdtxtoparname{APT}
1651 \cmdtxtoparname{DRT}\cmdtxtoparname{NRT}\cmdtxtoparname{URT}\cmdtxtoparname{ART}
1652 \cmdtxtoparname{DST}\cmdtxtoparname{NST}\cmdtxtoparname{UST}\cmdtxtoparname{AST}
1653 \cmdtxtoparname{DMT}\cmdtxtoparname{NMT}\cmdtxtoparname{UMT}\cmdtxtoparname{AMT}

1654 %%** Syntax ************************************************************%%
```

```
\TAutSet ...
1655 \newcommand{\tautset}{TAut}
1656 \cmdmthset{TAut}[\tautset]

\DirSet, ... ...
1657 \newcommand{\dirsym}{d}
1658 \newcommand{\dirset}{\Lambda}
1659 \cmdmthsetext{Dir}[\dirset][\dirsym]

1660 %%** Semantics *********************************************************%%

\TreeSet, ... ...
1661 \newcommand{\treesym}{T}
1662 \newcommand{\treeset}{Tr}
1663 \cmdmthsetext{Tree}[\treeset][\treesym]

\wotFun ...
1664 \newcommand{\wotfun}{wot}
1665 \cmdmthfun{wot}[\wotfun]

1666 \fi
1667 %%************************************************************************%%

1668 %%************************************************************************%%
1669 %%** Format Tricks ********************************************************%%
1670 %%************************************************************************%%
1671 \iffrm@

... ...
1672 %%...

1673 \fi
1674 %%************************************************************************%%

1675 %%************************************************************************%%
1676 %%** Figure Tricks ********************************************************%%
1677 %%************************************************************************%%
1678 \iffig@

... ...
1679 %%...

1680 \fi
1681 %%************************************************************************%%

1682 %%************************************************************************%%
1683 %%** Table Tricks *********************************************************%%
1684 %%************************************************************************%%
1685 \iftab@

... ...
1686 %%...

1687 \fi
1688 %%************************************************************************%%

1689 %%************************************************************************%%
1690 %%** Algorithm Tricks *****************************************************%%
1691 %%************************************************************************%%
1692 \ifalg@

1693 \RequirePackage[ruled,vlined]{algorithm2e}
1694 \setlength{\algomargin}{1.25em}
1695 \DontPrintSemicolon
1696 \SetInd{0.25em}{0.5em}
```

```
   \Signature  ...
1697 \SetKw{Signature}{signature}

  \Macro, ...  ...
1698 \SetKwFor{Macro}{macro}{}{}
1699 \SetKwFor{Function}{function}{}{}
1700 \SetKwFor{Procedure}{procedure}{}{}

        \Let  ...
1701 \SetKwFor{Let}{let}{in}{}

\True, \False  ...
1702 \SetKw{True}{true}
1703 \SetKw{False}{false}

   \GoTo, ...  ...
1704 \SetKw{GoTo}{goto}
1705 \SetKw{Break}{break}
1706 \SetKw{Continue}{continue}

    \MIf, ...  ...
1707 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}

        \nlr  ...
1708 \DeclareRobustCommand{\nlr}[1]
1709   {\addtocounter{AlgoLine}{1}%
1710   \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

1711 \fi
1712 %%*****************************************************************************%%
1713 \endinput
1714 ⟨/package⟩
```

2 Change History

v0.0
General: First public release 1
v0.1
General: Algorithm tricks 1
v0.2
General: Changes in auxiliary tricks 1
v0.3
General: Few problems solved 1
v0.4
General: Refactoring, corrections, and extensions 1

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