

# Documented Code For mfirstuc v2.08

Nicola L.C. Talbot

Dickimaw Books

<http://www.dickimaw-books.com/>

2022-10-14

## Contents

<b>1 Introduction</b>	<b>1</b>
<b>2 Main Package Code</b>	<b>1</b>
<b>3 Mfirstuc Documented Code</b>	<b>1</b>
3.1 Mfirstuc-english Documented Code . . . . .	20
<b>4 Rollback v2.07 (mfirstuc-2021-10-15.sty)</b>	<b>20</b>

## 1 Introduction

This is the documented code for the mfirstuc package. See `mfirstuc-manual.pdf` for the main user guide.

## 2 Main Package Code

## 3 Mfirstuc Documented Code

```
\NeedsTeXFormat{LaTeX2e}
```

Rollback releases:

```
\DeclareRelease{v2.07}{2021-10-15}{mfirstuc-2021-10-15.sty}
```

```
\DeclareCurrentRelease{v2.08}{2022-10-14}
```

Declare package:

```
\ProvidesPackage{mfirstuc}[2022/10/14 v2.08 (NLCT)]
```

Requires etoolbox:

```
\RequirePackage{etoolbox}
```

Version 2.07 has switched to LaTeX3 for the actual case-changing. The original `\makefirstuc` has been reimplemented to use LaTeX3 code. There is also a new command `\MFUsentencecase` which just uses `\text_titlecase_first:n`. Note that `\MFUsentencecase` is internally used by `\glsmakefirstuc`, which in turn is used by `\makefirstuc` to perform the actual case-change.

`\glsmakefirstuc` Provide a user command to make it easier to customise. This is used internally by `\makefirstuc`. (The original commands provided by `mfirstuc` were part of the `glossaries` package, hence the “gls” prefix.)

```
\newcommand*\glsmakefirstuc[1]{\MFUsentencecase{\unexpanded{#1}}}
```

`\mfirstucMakeUppercase` This was originally provided to allow user to replace `\MakeUppercase` with another case-changing command. This is now only used with `\mfugrabfirstuc`.

```
\ExplSyntaxOn
\newcommand*\mfirstucMakeUppercase[1]{\text_uppercase:n{#1}}
```

expanded Allow argument to expand. This also resets the definition of `\mfirstucMakeUppercase` in case it was changed by `grabfirst`.

```
\DeclareOption{expanded}{%
\renewcommand*\glsmakefirstuc[1]{\MFUsentencecase{#1}}%
\renewcommand*\mfirstucMakeUppercase[1]{\text_uppercase:n{#1}}%
}
```

unexpanded Prevent argument of `\glsmakefirstuc` from expanding. This also resets the definition of `\mfirstucMakeUppercase` in case it was changed by `grabfirst`, but note that it doesn’t use `\unexpanded`.

```
\DeclareOption{unexpanded}{%
\renewcommand*\glsmakefirstuc[1]{\MFUsentencecase{\unexpanded{#1}}}%
\renewcommand*\mfirstucMakeUppercase[1]{\text_uppercase:n{#1}}%
}
\ExplSyntaxOff
```

`\mfugrabfirstuc` Used by the `grabfirst` option to emulate v2.07.

```
\newrobustcmd*\mfugrabfirstuc[1]{\@mfu@grabfirstuc#1\empty}
```

`\@mfu@grabfirstuc`

```
\newcommand*\@mfu@grabfirstuc[2]{\mfirstucMakeUppercase{#1}#2}
```

`grabfirst` Emulate v2.07 method.

```
\DeclareOption{grabfirst}{%
\renewcommand*\glsmakefirstuc[1]{\mfugrabfirstuc{#1}}%
\renewcommand*\mfirstucMakeUppercase[1]{\MakeUppercase{#1}}%
}
```

Process options.

```
\ProcessOptions
```

There are differences between `\makefirstuc` and `\MFUsentencecase`, the principle ones being expansion occurs differently and `\makefirstuc` stops at exclusions whereas `\MFUsentencecase` skips them.

```
\ExplSyntaxOn
```

`\MFUsentencecase` New command provided that simply uses LaTeX3, which expands the content. This may be preferred over `\makefirstuc` depending on the content.

```
\newcommand{\MFUsentencecase}[1]{\text_titlecase_first:n{#1}}
```

`\MFUexcl` Add a command to the exclusion list. This is used by `\text_titlecase_first:n` to skip commands that shouldn't have their argument changed (such as `\ref`). It's also used by `\makefirstuc`.

```
\newcommand{\MFUexcl}[1]{
  \tl_if_empty:nF { #1 }
  {
    \tl_if_in:NnF \l_text_case_exclude_arg_tl {#1}
    {
      \tl_put_right:Nn \l_text_case_exclude_arg_tl {#1}
    }
  }
}
```

Add `\ensuremath` as an exclusion otherwise `\makefirstuc` will try passing its argument to `\MFUsentencecase`, which will fail.

```
\MFUexcl{\ensuremath}
```

Test if the given command is in the exclusion list.

```
\cs_new:Npn \mfirstuc_if_excluded:NnTF #1 #2 #3
{
  \tl_if_in:NnTF \l_text_case_exclude_arg_tl {#1} {#2} {#3}
}
```

Provide an implementation of `\makefirstuc` that matches older versions as much as possible.

```
\tl_new:N \l__mfirstuc_stack_tl
\tl_new:N \l__mfirstuc_head_tl
\tl_new:N \l__mfirstuc_next_tl
```

In addition to exclusions, also provide blockers. These are only supported by `\makefirstuc`. Exclusions and their argument are skipped, whereas blockers prevent case-change. For example, sentence-casing `\label{ex}some text` should skip `\label{ex}`, whereas `\nameref{ex} some text` shouldn't have any case change applied.

```
\tl_new:N \l__mfirstuc_blocker_tl
```

`\MFUblocker` Add a command to the blocker list.

```
\newcommand{\MFUblocker}[1]{
  \tl_if_empty:nF { #1 }
  {
```

```

\l__mfirstuc_blocker_tl {#1}
{
  \tl_put_right:Nn \l__mfirstuc_blocker_tl {#1}
}
\MFUexcl { #1 }
}
}

```

Test if the given command is in the blocker list.

```

\cs_new:Npn \tl_if_mfirstuc_blocker:nTF #1 #2 #3
{
  \tl_if_in:NnTF \l__mfirstuc_blocker_tl {#1} {#2} {#3}
}

```

Is there a way to do this without `\expandafter`?

```

\cs_new:Npn \tl_if_mfirstuc_blocker:VTF #1 #2 #3
{
  \expandafter \tl_if_mfirstuc_blocker:nTF \expandafter {#1} {#2} {#3}
}

```

```
\makefirstuc{<text>}
```

\makefirstuc

```

\newrobustcmd{\makefirstuc}[1]{%
  \tl_set:Nn \l__mfirstuc_stack_tl {#1}
  \tl_if_empty:NF \l__mfirstuc_stack_tl
  {
    \tl_if_single:NTF \l__mfirstuc_stack_tl
    {
      \glsmakefirstuc{#1}
    }
    {
      \tl_if_head_is_group:nTF {#1}
      {
        \glsmakefirstuc{#1}
      }
      {
        \tl_if_head_eq_catcode:nNTF {#1} \relax
        {
          \tl_set:NV \l_tmpa_tl \l__mfirstuc_stack_tl
          \tl_set:Nx \l__mfirstuc_head_tl { \tl_head:V \l_tmpa_tl }
          \tl_set:Nx \l__mfirstuc_stack_tl { \tl_tail:N \l__mfirstuc_stack_tl }
          \tl_if_eq:NnTF \l__mfirstuc_head_tl { \protect }
          {
            \tl_set:NV \l_tmpa_tl \l__mfirstuc_stack_tl
            \tl_set:Nx \l__mfirstuc_head_tl { \tl_head:V \l_tmpa_tl }
            \tl_set:Nx \l__mfirstuc_stack_tl { \tl_tail:N \l__mfirstuc_stack_tl }
          }
        }
      }
    }
  }
}

```

```

{}
\tl_if_mfirstuc_blocker:VTF \l__mfirstuc_head_tl
{ #1 }
{
  \let \l_tmpa_tl \l__mfirstuc_stack_tl
  \tl_set:Nx \l__mfirstuc_next_tl { \tl_head:N \l_tmpa_tl }
  \tl_if_single:NTF \l__mfirstuc_next_tl
  {
    \glsmakefirstuc{#1}
  }
  {
    \tl_set:Nx \l__mfirstuc_stack_tl { \tl_tail:N \l__mfirstuc_stack_tl }
    \tl_clear:N \l_tmpa_tl
    \tl_put_right:Nn \l_tmpa_tl { \__mfirstuc_inner:nnn }
    \tl_put_right:NV \l_tmpa_tl \l__mfirstuc_head_tl
    \tl_put_right:Nx \l_tmpa_tl
    {
      { \expandonce \l__mfirstuc_next_tl }
      { \expandonce \l__mfirstuc_stack_tl }
    }
    \tl_use:N \l_tmpa_tl
  }
}
}
{
  \glsmakefirstuc{#1}
}
}
}
}
\cs_new_protected:Npn \__mfirstuc_inner:nnn #1 #2 #3
{

```

Mappings trump exclusions.

```

\mfirstuc_get_map:NN #1 \l_tmpb_tl
\quark_if_no_value:NTF \l_tmpb_tl
{
  \mfirstuc_if_excluded:NTF #1
  { #1{#2}\makefirstuc{#3} }
  { #1{\makefirstuc{#2}}#3 }
}
{
  \l_tmpb_tl {#2} #3
}
}

```

Mappings.

```

\prop_new:N \l__mfirstuc_mappings_prop

```

`\MFUaddmap` Adds a mapping from a control sequence to the appropriate sentence case version. No map is added if either argument is empty.

```

\newrobustcmd*{\MFUaddmap}[2]{%
  \tl_if_empty:nF { #1 }
  {
    \tl_if_empty:nF { #2 }
    {
      \prop_put:Nnn \l__mfirstuc_mappings_prop {#1} {#2}
    }
  }
  \MFUexcl { #1 }
  \MFUblocker { #2 }
}

\cs_new:Npn \mfirstuc_get_map:NN #1 #2
{
  \prop_get:NnN \l__mfirstuc_mappings_prop {#1} #2
}

```

`\MFUsaveatend` Save exclusions, blockers and mappings in the aux file, if required by some external tool, but delays action to the end of the document.

```

\newcommand{\MFUsaveatend}{
  \AtEndDocument { \@MFUsavetoaux }
}

```

Disable this command.

```

\let\MFUsaveatend\relax
}

```

`\MFUsave` As above but do now.

```

\newcommand{\MFUsave}{
  \@MFUsavetoaux
}

```

Disable further attempts.

```

\let\@MFUsavetoaux\relax
\let\MFUsave\relax
\let\MFUsaveatend\relax
}

```

`\@MFUsavetoaux` Save exclusions, blockers and mappings in the aux file, if required by some external tool.

```

\newcommand{\@MFUsavetoaux}{
  \protected@write\@auxout{
    { \tl_to_str:n { \providecommand{\@mfu@excls}[1]{ } } }
  }
  \protected@write\@auxout{
    { \tl_to_str:n { \providecommand{\@mfu@blockers}[1]{ } } }
  }
  \protected@write\@auxout{
    { \tl_to_str:n { \providecommand{\@mfu@mappings}[1]{ } } }
  }
}

```

Save current values.

```

\protected@write\@auxout{
}

```

```

{
  \string\mfu@excls { \tl_to_str:V \l_text_case_exclude_arg_tl }
}
\protected@write\@auxout{
{
  \string\mfu@blockers { \tl_to_str:V \l__mfirstuc_blocker_tl }
}
\protected@write\@auxout{
{
  \string\mfu@mappings
  { \expandonce { \prop_to_keyval:N \l__mfirstuc_mappings_prop } }
}
}

\ExplSyntaxOff

```

The remaining code hasn't been converted to LaTeX3 yet, but may in the future, so don't rely on internal commands.

`\makefirstuc` Fully expand argument before applying case-change.

```

\newrobustcmd*{\makefirstuc}[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\makefirstuc\expandafter{\@MFU@caparg}%
}

```

`\xmakefirstuc`

```

\newcommand*{\xmakefirstuc}[1]{\expandafter\makefirstuc\expandafter{#1}}

```

`\MFUskipunc`

```

\newrobustcmd*{\MFUskipunc}[1]{#1}
\MFUexcl{\MFUskipunc}

```

Title case commands. Each word has the first letter converted to upper case using `\MFUcapwordfirstuc`. This uses `\makefirstuc` by default. It may be redefined to use `\MFUsentencecase` or `\text_titlecase:n` as applicable.

`\MFUcapwordfirstuc`

```

\newcommand*{\MFUcapwordfirstuc}[1]{%
  \makefirstuc{#1}%
}

```

`\capitalisewords` Capitalise each word in the argument. Words are considered to be separated by plain spaces (i.e. non-breakable spaces won't be considered a word break).

```

\newrobustcmd*{\capitalisewords}[1]{%
  \let\mfu@checkword\@gobble
  \def\gls@add@space{}%
  \let\mfu@domakefirstuc\@MFU@dofirst@capword
  \mfu@capitalisewords#1 \nil\mfu@endcap
}

```

\@mfu@mid@capitalisewords \@mfu@checkword needs to be set before use.

```
\newcommand*{\@mfu@mid@capitalisewords}[1]{%
  \def\gls@add@space{}%
  \let\@mfu@domakefirstuc\@MFU@do@capword
  \mfu@capitalisewords#1 \@nil\mfu@endcap
}

\def\mfu@capitalisewords#1 #2\mfu@endcap{%
  \def\mfu@cap@first{#1}%
  \def\mfu@cap@second{#2}%
  \gls@add@space
  \@mfu@checkword{#1}%
  \@mfu@domakefirstuc{#1}%
  \def\gls@add@space{ }%
  \ifx\mfu@cap@second\@nnil
    \let\next@mfu@cap\mfu@noop
  \else
    \let\next@mfu@cap\mfu@capitalisewords
    \let\@mfu@checkword\mfu@checkword
  \fi
  \next@mfu@cap#2\mfu@endcap
}
\def\mfu@noop#1\mfu@endcap{}
```

\ifMFUhyphen Split on hyphens.

```
\newif\ifMFUhyphen
\MFUhyphenfalse
```

\@MFU@do@capword

```
\newcommand*{\@MFU@do@capword}[1]{%
  \let\@MFU@cappingword\MFUcapword
  \@MFUwordbreak#1\MFUwordbreak{}\@nil\@endMFUwordbreak
}
```

\@MFU@dofirst@capword

```
\newcommand*{\@MFU@dofirst@capword}[1]{%
  \let\@MFU@cappingword\MFUcapword
  \@MFUfirstwordbreak#1\MFUwordbreak{}\@nil\@endMFUfirstwordbreak
}
```

\MFUcapword

```
\newcommand*{\MFUcapword}[1]{%
  \ifMFUhyphen
    \MFUhyphencapword{#1}%
  \else
    \MFUcapwordfirstuc{#1}%
  \fi
}
```



`\MFUwordbreak` Markup a character (or command) that should be treated as a word break.

```
\newrobustcmd*{\MFUwordbreak}[1]{#1}
```

`\MFUhyphencapword`

```
\newcommand*{\MFUhyphencapword}[1]{%  
  \MFUcapword#1-\@nil\endMFUcapword  
}
```

`\@MFUcapword`

```
\def\@MFUcapword#1-#2\endMFUcapword{%  
  \MFUcapwordfirstuc{#1}%  
  \def\@mfu@argii{#2}%  
  \ifx\@mfu@argii\@nnil  
  \else  
    -\@MFUcapword#2\endMFUcapword  
  \fi  
}
```

`\@MFUwordbreak`

```
\def\@MFUwordbreak#1\MFUwordbreak#2#3\endMFUwordbreak{%  
  \def\@mfu@argiii{#3}%  
  \ifx\@mfu@argiii\@nnil  
    \MFU@cappingword{#1}%  
  \else  
    \let\@MFU@cappingword\MFU@wordbreakcapword  
    \MFU@cappingword{#1}%  
    #2\MFUwordbreak#3\endMFUwordbreak  
  \fi  
}
```

`\@MFU@wordbreakcapword`

```
\newcommand*{\@MFU@wordbreakcapword}[1]{%  
  \mfu@checkword{#1}%  
  \mfu@domakefirstuc{#1}%  
}
```

`\@MFUfirstwordbreak`

```
\def\@MFUfirstwordbreak#1\MFUwordbreak#2#3\endMFUfirstwordbreak{%  
  \def\@mfu@argiii{#3}%  
  \ifx\@mfu@argiii\@nnil  
    \MFU@cappingword{#1}%  
  \else  
    \let\@MFU@cappingword\MFU@firstwordbreakcapword  
    \MFU@cappingword{#1}%  
    #2\MFUfirstwordbreak#3\endMFUfirstwordbreak  
  \fi  
}
```

`\MFU@firstwordbreakcapword`

```
\newcommand*\MFU@firstwordbreakcapword}[1]{%  
  \mfu@domakefirstuc{#1}%  
}
```

`\mfu@checkword` Check if word should be capitalised. This originally used `etoolbox's \ifinlist` command but this doesn't work if the word contains grouping.

```
\newcommand*\mfu@checkword[1]{%  
  \def\mfu@checkword@arg{#1}%  
  \let\mfu@domakefirstuc\MFU@do@capword  
  \forlistloop\mfu@checkword@do\mfu@nocaplist  
}
```

`\mfu@checkword@do` Handler for loop used by `\mfu@checkword`

```
\newcommand*\mfu@checkword@do}[1]{%  
  \def\mfu@checkword@argii{#1}%  
  \ifdefequal\mfu@checkword@arg\mfu@checkword@argii  
  {%  
    \let\mfu@domakefirstuc\@firstofone  
    \listbreak  
  }%  
  {%
```

Need to check if `\mfu@terminator` has been tacked onto the end.

```
\def\mfu@checkword@argii{#1{\mfu@terminator}}%  
\ifdefequal\mfu@checkword@arg\mfu@checkword@argii  
{%  
  \let\mfu@domakefirstuc\@firstofone  
  \listbreak  
}%  
{%  
}%  
}
```

`\mfu@nocaplist` List of words that shouldn't be capitalised.

```
\newcommand*\mfu@nocaplist{}
```

`\MFUnocap` Provide the user with a means to add a word to the list. (No expansion performed on the argument.)

```
\newcommand*\MFUnocap}[1]{\listadd{\mfu@nocaplist}{#1}}
```

`\gMFUnocap` Global version.

```
\newcommand*\gMFUnocap}[1]{\listgadd{\mfu@nocaplist}{#1}}
```

`\MFUclear` Clear the list

```
\newcommand*\MFUclear{\renewcommand*\mfu@nocaplist{}}
```

`\xcapitalisewords` Short-cut command:

```
\newcommand*\xcapitalisewords}[1]{%
  \expandafter\capitalisewords\expandafter{#1}%
}
```

`\ecapitalisewords` Fully expand argument before applying `\capitalisewords`

```
\newrobustcmd*\ecapitalisewords}[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\capitalisewords\expandafter{\@MFU@caparg}%
}
```

`\@mfu@nil`

```
\newcommand\@mfu@nil{\unskip}
```

`\@mfu@nnil`

```
\newcommand*\@mfu@nnil{\@mfu@nil}
```

`\capitalisefmtwords` Like `\capitalisewords` but assumes that the phrase contains formatting text-block commands.

```
\newcommand*\capitalisefmtwords}{%
  \ifstar\@s@capitalisefmtwords\@ns@capitalisefmtwords
}
```

`\@s@capitalisefmtwords` Starred form.

```
\newcommand*\@s@capitalisefmtwords}[1]{%
  \@s@checkgrp@capitalisefmtwords#1\@nil
}
```

`\@checkgrp@capitalisefmtwords`

```
\newcommand*\@checkgrp@capitalisefmtwords}{%
  \ifnextchar\bgroup{\@s@noc@capitalisefmtwords}{\@s@capitalisefmtwords}%
}
```

`\@s@noc@capitalisefmtwords` Argument starts with a group.

```
\def\@s@noc@capitalisefmtwords#1\@nil{%
  \capitalisewords{#1}%
}
```

`\@@s@capitalisefmtwords`

```
\newcommand*\@@s@capitalisefmtwords}[1]{%
  \def\gls@argi{#1}%
  \ifx\gls@argi\@MFU@protect
```

Skip `\protect`

```
\let\@mfu@capfmtwordsnext\@@s@capitalisefmtwords
\else
\ifx\gls@argi\@nnil
```

Nothing to do.

```
\let\@mfu@capfmtwordsnext\relax
\else
\def\@gls@tmp{\ #1}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs
\def\@mfu@capfmtwordsnext{\@s@cs@capitalisefmtwords#1}%
\else
\def\@mfu@capfmtwordsnext{\@s@nocs@capitalisefmtwords#1}%
\fi
\fi
\fi
\@mfu@capfmtwordsnext
}
```

\@s@cs@capitalisefmtwords

```
\newcommand*{\@s@cs@capitalisefmtwords}[1]{%
\@ifnextchar\bgroup
{\@s@cs@g@capitalisefmtwords#1}%
{\@s@cs@ng@capitalisefmtwords#1}%
}
```

\@s@cs@g@capitalisefmtwords

```
\def\@s@cs@g@capitalisefmtwords#1#2#3\@nil{%
#1{\capitalisewords{#2}}%
\ifblank{#3}%
{}%
{%
\def\gls@add@space{}%
\let\@mfu@checkword\mfu@checkword
\mfu@capitalisewords#3 \@nil\mfu@endcap
}%
}
```

\@s@cs@ng@capitalisefmtwords

```
\def\@s@cs@ng@capitalisefmtwords#1#2\@nil{%
\capitalisewords{#1#2}%
}
```

\@ns@capitalisefmtwords Unstarred form.

```
\newcommand*{\@ns@capitalisefmtwords}[1]{%
\let\@mfu@checkword\@gobble
\def\gls@add@space{}%
\@capitalisefmtwords#1 \@mfu@nil{} \unskip
}
```

\@capitalisefmtwords Take care of group at the start of the word.

```
\newcommand*{\@capitalisefmtwords}{%
```

```

    \@ifnextchar\bgroup{\@capitalise@g@fmtwords}{\@capitalise@ng@fmtwords}%
  }
  \newcommand*{\@capitalise@g@fmtwords}[1]{%
    \@capitalise@ng@fmtwords{#1}}%
  }
  \def\@mfu@ifnil#1#2\@mfu@end@nil#3#4{%
    \def\gls@argi{#1}%
    \ifx\gls@argi\@mfu@nnil
      #3%
    \else
      #4%
    \fi
  }
  \def\@capitalise@ng@fmtwords#1 {%
    \@mfu@ifnil#1\relax\relax\@mfu@end@nil
    {%
      \def\@mfu@capfmtwordsnext{#1}%
    }%
    {%
      \def\@mfu@capfmtwordsnext{%
        \@capitalise@fmtwords#1\@mfu@nil
        \def\gls@add@space{ }%
        \let\@mfu@checkword\mfu@checkword
        \@@cap@nofmtphrase}%
      }%
      \@mfu@capfmtwordsnext
    }%
  }%

```

\@capitalise@fmtwords

```

\def\@capitalise@fmtwords#1{%
  \@mfu@ifnil#1\relax\relax\@mfu@end@nil
  {%
Do nothing.
    \def\@mfu@capfmtwordsnext{#1}%
  }%
  {%
    \def\gls@argi{#1}%
    \ifx\gls@argi\@MFU@protect
Skip \protect
      \def\@mfu@capfmtwordsnext{\@capitalise@fmtwords}%
    \else
      \def\@gls@tmp{\ #1}%
      \@onelevel@sanitize\@gls@tmp
      \expandafter\@gls@checkcs\@gls@tmp\relax\relax
      \if@glscs
        \def\@mfu@capfmtwordsnext{\@@capitalise@fmtwords#1}%
      \else
        \ifx\gls@argi\@empty

```

```

        \def\mfu@capfmtwordsnext{\@@capnofmtphrase{}}%
        \else
        \def\mfu@capfmtwordsnext{\@@capnofmtphrase#1}%
        \fi
        \fi
        \fi
    }%
    \mfu@capfmtwordsnext
}

\@@capitalisefmtwords Check for a group following argument.
\def\@@capitalisefmtwords#1{%
    \ifnextchar\bgroup{\@@capfmtsubphrase#1}{\@@capnofmtphrase#1}%
}

\@@capnofmtphrase
\def\@@capnofmtphrase{%
    \ifnextchar\bgroup{\@@cap@g@nofmtphrase}{\@@cap@ng@nofmtphrase}%
}

\@@cap@ng@nofmtphrase
\def\@@cap@ng@nofmtphrase#1\mfu@nil{%
    \gls@add@space
    \mfu@mid@capitalisewords{#1}%
    \def\gls@add@space{ }%
}

\@@cap@g@nofmtphrase
\def\@@cap@g@nofmtphrase#1{%
    \@@cap@ng@nofmtphrase{#1}%
}

\mfu@terminator
\newcommand*\mfu@terminator{\hbox{}}

\@@capfmtsubphrase
\def\@@capfmtsubphrase#1#2#3{%
Protect any trailing space at the end of the second argument.
    #1{\@@capitalisefmtwords#2{\mfu@terminator} \mfu@nil{} \unskip}%
    \def\gls@add@space{ }%
    \let\mfu@checkword\mfu@checkword
    \mfu@ifnil#1\relax\relax\mfu@end@nil
    {\let\mfu@fntsubphrasenext\relax}%
    {\def\mfu@fntsubphrasenext{#3}}%
    \mfu@fntsubphrasenext
}

```

`\@@cap@nofmtphrase`

```
\def\@@cap@nofmtphrase#1 {%
  \mfu@ifnil#1\relax\relax\mfu@endnil
  {%
    \def\mfu@capnofmtwordsnext{#1 }%
  }%
  {%
    \def\mfu@capnofmtwordsnext{%
      \@capitalisefmtwords#1 \mfu@nil{ } \unskip
      \def\gls@add@space{ }%
      \let\mfu@checkword\mfu@checkword
      \@capitalisefmtwords
    }%
  }%
  \mfu@capnofmtwordsnext
}
```

`\xcapitalisefmtwords` Short-cut command:

```
\newcommand*\xcapitalisefmtwords{%
  \ifstar\@s@xcapitalisefmtwords\@ns@xcapitalisefmtwords
}
```

`\@s@xcapitalisefmtwords` Starred version

```
\newcommand*\@s@xcapitalisefmtwords[1]{%
  \expandafter\@s@capitalisefmtwords\expandafter{#1}%
}
```

`\@ns@xcapitalisefmtwords` Unstarred version

```
\newcommand*\@ns@xcapitalisefmtwords[1]{%
  \expandafter\@ns@capitalisefmtwords\expandafter{#1}%
}
```

`\ecapitalisefmtwords`

```
\newrobustcmd*\ecapitalisefmtwords{%
  \ifstar\@s@ecapitalisefmtwords\@ns@ecapitalisefmtwords
}
```

`\@s@ecapitalisefmtwords` Starred version

```
\newcommand*\@s@ecapitalisefmtwords[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\@s@capitalisefmtwords\expandafter{\@MFU@caparg}%
}
```

`\@ns@ecapitalisefmtwords` Unstarred version

```
\newcommand*\@ns@ecapitalisefmtwords[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\@ns@capitalisefmtwords\expandafter{\@MFU@caparg}%
}
```

The remaining code is redundant and will be removed in future.

`\@org@makefirstuc` This is the original definition of `\makefirstuc`. It will be removed in later versions. Syntax:

```
\makefirstuc{<text>}
```

```
\newif\if@glscs
\newtoks\@glsmfirst
\newtoks\@glsmrest
\newrobustcmd*{\@org@makefirstuc}[1]{%
```

Check if argument starts with `\protect` which needs to be skipped.

```
\@MFU@p@makefirstuc#1\relax\relax\relax\@end@MFU@protected{#1}%
}
```

`\@MFU@protect`

```
\newcommand*{\@MFU@protect}{\protect}
```

`\@MFU@skippunc`

```
\newcommand*{\@MFU@skippunc}{\MFU@skippunc}
```

`\@MFU@p@makefirstuc` Internal command to do the required action.

```
\def\@MFU@p@makefirstuc#1#2#3\@end@MFU@protected#4{%
```

Test if the first argument is `\protect`.

```
\def\gls@argi{#1}%
\ifx\gls@argi\@MFU@protect
\@makefirstuc{#2#3}%
\else
```

v2.07+ also check for `\MFU@skippunc`

```
\ifx\gls@argi\@MFU@skippunc
#2\@makefirstuc{#3}%
\else
\@makefirstuc{#4}%
\fi
```

```
\fi
}
```

`\@makefirstuc` Internal command to do the required action.

```
\newcommand*{\@makefirstuc}[1]{%
\def\gls@argi{#1}%
\ifx\gls@argi\@empty
```

If the argument is empty, do nothing.

```
\else
```



```

\def\@gls@tmp{\ #1}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs

```

Check if we have two sequential control sequences.

```

\expandafter\def\expandafter\@gls@tmp\expandafter{\expandafter
\ \@gobble #1}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs\@glscsfalse\else\@glscstrue\fi
\fi
\if@glscs
\@gls@getbody #1{\@nil
\ifx\@gls@rest\@empty
\glsmakefirstuc{#1}%
\else
\expandafter\@gls@split\@gls@rest\@nil
\ifx\@gls@first\@empty
\glsmakefirstuc{#1}%
\else

```

Does \@gls@first start with a control sequence?

```

\edef\@gls@tmp\expandafter{\noexpand\ \expandonce\@gls@first}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs
\edef\@gls@domfirstuc{\expandonce\@gls@body
{\noexpand\makefirstuc{\expandonce\@gls@first
\expandonce\@gls@rest}}%
}%
}%
\else
\expandafter\@glsmfirst\expandafter{\@gls@first}%
\expandafter\@glsmrest\expandafter{\@gls@rest}%

\edef\@gls@domfirstuc{\noexpand\@gls@body
{\noexpand\glsmakefirstuc{\the\@glsmfirst}}%
\the\@glsmrest}%
\fi
\@gls@domfirstuc
\fi
\fi
\else
\glsmakefirstuc{#1}%
\fi
\fi
}

```

\@gls@split Put first argument in \@gls@first and second argument in \@gls@rest:

```

\ifdef\dtl@getfirst@UTFviii
{%
  \def\@gls@split#1#2\@nil{%
    \ifbool{@dtl@utf8}
    {%
      \expandafter\dtl@if@two@octets#1#2\relax\dtl@end@if@two@octets
      {%
        \dtl@getfirst@UTFviii#1#2\@nil\end@dtl@getfirst@UTFviii
        \let\@gls@first\dtl@first
        \let\@gls@rest\dtl@rest
      }%
    }%
    \def\@gls@first{#1}\def\@gls@rest{#2}%
  }%
}%
}

\def\@gls@first{#1}\def\@gls@rest{#2}%
}
}

\def\@gls@split#1#2\@nil{%
  \def\@gls@first{#1}\def\@gls@rest{#2}%
}
}

\def\@gls@checkcs#1 #2#3\relax{%
  \def\@gls@argi{#1}\def\@gls@argii{#2}%
  \ifx\@gls@argi\@gls@argii
    \@glscstrue
  \else
    \@glscsfalse
  \fi
}

```

Has datatool-base v2.24 (or above) been loaded? If so and we have UTF-8 enabled, we can grab the first octet.

\@mfu@applytofirst

```

\ifdef\dtl@getfirst@UTFviii
{%
  \def\@mfu@applytofirst#1#2\@mfu@end@applytofirst#3{%
    \expandafter\dtl@if@two@octets#1#2\relax\dtl@end@if@two@octets
    {%
      \dtl@getfirst@UTFviii#1#2\@nil\end@dtl@getfirst@UTFviii
      \expandafter#3\expandafter{\dtl@first}\dtl@rest
    }%
  }%
}

```

First argument needs to be grouped in case it consists of more than one token.

```

        #3{#1}#2%
    }%
} %
{ %

```

First argument needs to be grouped in case it consists of more than one token.

```

\def\@mfu@applytofirst#1#2\@mfu@end@applytofirst#3{%
    #3{#1}#2%
}
}

```

```
\MFUapplytofirst{<cs>}{<text>}
```

\MFUapplytofirst

Apply <cs> to first token of text, or first UTF-8 character if datatool-base v2.24 above has been loaded with the utf8 support enabled. Deprecated as from v2.08.

```

\ifdef\dtl@getfirst@UTFviii
{ %
    \newcommand*\MFUapplytofirst}[2]{ %
        \ifbool{@dtl@utf8}
        { %
            \ifblank{#2} %
            {#1{#2}} %
            { %
                \ifblank{#1} %
                {#1#2} %
                { %
                    \@mfu@applytofirst#2\@mfu@end@applytofirst#1\relax
                } %
            } %
        } %
    } %
    { %
        #1#2 %
    } %
}
} %
{ %
    \newcommand*\MFUapplytofirst}[2]{ %
        #1#2 %
    }
}
}

```

\@gls@makefirstuc Deprecated.

```
\def\@gls@makefirstuc#1{\MFUsentencecase{#1}}
```

Get the first grouped argument and store in \@gls@body.

```
\def\@gls@getbody#1#\def\@gls@body{#1}\@gls@gobbletonil}
```

Scoup up everything to \@nil and store in \@gls@rest:

```
\def\@gls@gobbletonil#1\@nil{\def\@gls@rest{#1}}
```

### 3.1 Mfirstuc-english Documented Code

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{mfirstuc-english}[2022/10/14 v2.08 (NLCT)]
```

Load mfirstuc if not already loaded:

```
\RequirePackage{mfirstuc}
```

Add no-cap words. This list isn't complete. I don't intend adding disputed words. Additional words can be added to the document in a similar manner.

```
\MFUnocap{a}
\MFUnocap{an}
\MFUnocap{and}
\MFUnocap{but}
\MFUnocap{for}
\MFUnocap{in}
\MFUnocap{of}
\MFUnocap{or}
\MFUnocap{no}
\MFUnocap{nor}
\MFUnocap{so}
\MFUnocap{some}
\MFUnocap{the}
\MFUnocap{with}
\MFUnocap{yet}
```

## 4 Rollback v2.07 (mfirstuc-2021-10-15.sty)

Version 2.07 preserved for rollback.

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{mfirstuc}[2021/10/15 v2.07 (NLCT)]
\RequirePackage{etoolbox}
\newif\if@glscs
\newtoks\@glsmfirst
\newtoks\@glsmrest
\newrobustcmd*{\makefirstuc}[1]{%
  \@MFU@p@makefirstuc#1\relax\relax\relax\end@MFU@protected{#1}%
}
\newcommand*{\@MFU@protect}{\protect}
\newcommand*{\@MFU@skippunc}{\MFU@skippunc}
\newrobustcmd*{\MFU@skippunc}[1]{#1}
\def\@MFU@p@makefirstuc#1#2#3\end@MFU@protected#4{%
  \def\gls@argi{#1}%
  \ifx\gls@argi\@MFU@protect
    \@makefirstuc{#2#3}%
  \else
    \ifx\gls@argi\@MFU@skippunc
      #2\@makefirstuc{#3}%
    \else
      \@makefirstuc{#4}%
    \fi
  \fi
}
```

```

\fi
}
\newcommand*{\@makefirstuc}[1]{%
\def\gls@argi{#1}%
\ifx\gls@argi\@empty
\else
\def\@gls@tmp{\ #1}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs
\expandafter\def\expandafter\@gls@tmp\expandafter{\expandafter
\ \gobble #1}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs\@glscsfalse\else\@glscstrue\fi
\fi
\if@glscs
\@gls@getbody #1{\@nil
\ifx\@gls@rest\@empty
\glsmakefirstuc{#1}%
\else
\expandafter\@gls@split\@gls@rest\@nil
\ifx\@gls@first\@empty
\glsmakefirstuc{#1}%
\else
\edef\@gls@tmp\expandafter{\noexpand\ \expandonce\@gls@first}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs
\edef\@gls@domfirstuc{\expandonce\@gls@body
{\noexpand\makefirstuc{\expandonce\@gls@first
\expandonce\@gls@rest}}%
}%
}%
\else
\expandafter\@glsmfirst\expandafter{\@gls@first}%
\expandafter\@glsmrest\expandafter{\@gls@rest}%
\edef\@gls@domfirstuc{\noexpand\@gls@body
{\noexpand\glsmakefirstuc{\the\@glsmfirst}}%
\the\@glsmrest}%
\fi
\@gls@domfirstuc
\fi
\fi
\else
\glsmakefirstuc{#1}%
\fi
\fi
}
\ifdef\dtl@getfirst@UTFviii

```

```

{%
  \def\@gls@split#1#2\@nil{%
    \ifbool{@dtl@utf8}
      {%
        \expandafter\dtl@if@two@octets#1#2\relax\dtl@end@if@two@octets
        {%
          \dtl@getfirst@UTFviii#1#2\@nil\end@dtl@getfirst@UTFviii
          \let\@gls@first\dtl@first
          \let\@gls@rest\dtl@rest
        }%
      }%
    }%
    \def\@gls@first{#1}\def\@gls@rest{#2}%
  }%
}
{%
  \def\@gls@first{#1}\def\@gls@rest{#2}%
}
}
}
\def\@gls@split#1#2\@nil{%
  \def\@gls@first{#1}\def\@gls@rest{#2}%
}
}
\def\@gls@checkcs#1 #2#3\relax{%
  \def\@gls@argi{#1}\def\@gls@argii{#2}%
  \ifx\@gls@argi\@gls@argii
    \@glscstrue
  \else
    \@glscsfalse
  \fi
}
\ifdef\dtl@getfirst@UTFviii
{%
  \def\@mfu@applytofirst#1#2\@mfu@end@applytofirst#3{%
    \expandafter\dtl@if@two@octets#1#2\relax\dtl@end@if@two@octets
    {%
      \dtl@getfirst@UTFviii#1#2\@nil\end@dtl@getfirst@UTFviii
      \expandafter#3\expandafter{\dtl@first}\dtl@rest
    }%
  }%
  #3{#1}#2%
}
}
}
\def\@mfu@applytofirst#1#2\@mfu@end@applytofirst#3{#3{#1}#2}
}
\ifdef\dtl@getfirst@UTFviii
{%

```

```

\newcommand*\MFUapplytofirst}[2]{%
  \ifbool{@dtl@utf8}
  {%
    \ifblank{#2}%
    {#1{#2}}%
    {%
      \ifblank{#1}%
      {#1#2}%
      {%
        \@mfu@applytofirst#2\@mfu@end@applytofirst#1\relax
      }%
    }%
  }%
  {%
    #1#2%
  }%
}
}%
\newcommand*\MFUapplytofirst}[2]{#1#2}
}
\def\@gls@makefirstuc#1{\MFUapplytofirst\mfirstucMakeUppercase{#1}}
\newcommand*\mfirstucMakeUppercase{\MakeUppercase}
\newcommand*\glsmakefirstuc}[1]{\@gls@makefirstuc{#1}}
\def\@gls@getbody#1#\def\@gls@body{#1}\@gls@gobbletonil}
\def\@gls@gobbletonil#1\@nil{\def\@gls@rest{#1}}
\newcommand*\xmakefirstuc}[1]{%
  \expandafter\makefirstuc\expandafter{#1}%
}
\newrobustcmd*\emakefirstuc}[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\makefirstuc\expandafter{\@MFU@caparg}%
}
\newrobustcmd*\capitalisewords}[1]{%
  \let\@mfu@checkword\@gobble
  \def\gls@add@space{}%
  \let\@mfu@domakefirstuc\@MFU@dofirst@capword
  \mfu@capitalisewords#1 \@nil\mfu@endcap
}
\newcommand*\@mfu@mid@capitalisewords}[1]{%
  \def\gls@add@space{}%
  \let\@mfu@domakefirstuc\@MFU@do@capword
  \mfu@capitalisewords#1 \@nil\mfu@endcap
}
\def\mfu@capitalisewords#1 #2\mfu@endcap{%
  \def\mfu@cap@first{#1}%
  \def\mfu@cap@second{#2}%
  \gls@add@space
  \@mfu@checkword{#1}%
  \@mfu@domakefirstuc{#1}%
}

```

```

\def\gls@add@space{ }%
\ifx\mfu@cap@second\@nnil
  \let\next@mfu@cap\mfu@noop
\else
  \let\next@mfu@cap\mfu@capitalisewords
  \let\@mfu@checkword\mfu@checkword
\fi
\next@mfu@cap#2\mfu@endcap
}
\def\mfu@noop#1\mfu@endcap{}
\newif\ifMFUhyphen
\MFUhyphenfalse
\newcommand*{\@MFU@do@capword}[1]{%
  \let\@MFU@cappingword\MFUcapword
  \@MFUwordbreak#1\MFUwordbreak}\@nil\@endMFUwordbreak
}
\newcommand*{\@MFU@do@first@capword}[1]{%
  \let\@MFU@cappingword\MFUcapword
  \@MFUfirstwordbreak#1\MFUwordbreak}\@nil\@endMFUfirstwordbreak
}
\newcommand*{\MFUcapword}[1]{%
  \ifMFUhyphen
    \MFUhyphencapword{#1}%
  \else
    \MFUcapwordfirstuc{#1}%
  \fi
}
\newcommand*{\MFUcapwordfirstuc}[1]{%
  \makefirstuc{#1}%
}
\newrobustcmd*{\MFUwordbreak}[1]{#1}
\newcommand*{\MFUhyphencapword}[1]{%
  \@MFUcapword#1-\@nil\@endMFUcapword
}
\def\@MFUcapword#1-#2\@endMFUcapword{%
  \MFUcapwordfirstuc{#1}%
  \def\@mfu@argii{#2}%
  \ifx\@mfu@argii\@nnil
  \else
    -\@MFUcapword#2\@endMFUcapword
  \fi
}
\def\@MFUwordbreak#1\MFUwordbreak#2#3\@endMFUwordbreak{%
  \def\@mfu@argiii{#3}%
  \ifx\@mfu@argiii\@nnil
    \@MFU@cappingword{#1}%
  \else
    \let\@MFU@cappingword\@MFU@wordbreakcapword
    \@MFU@cappingword{#1}%
    #2\@MFUwordbreak#3\@endMFUwordbreak
  \fi
}

```



```

\fi
}
\newcommand*{\@MFU@wordbreakcapword}[1]{%
\mfu@checkword{#1}%
\@mfu@domakefirstuc{#1}%
}
\def\@MFUfirstwordbreak#1\MFUwordbreak#2#3\@endMFUfirstwordbreak{%
\def\@mfu@argiii{#3}%
\ifx\@mfu@argiii\@nnil
\@MFU@cappingword{#1}%
\else
\let\@MFU@cappingword\@MFU@firstwordbreakcapword
\@MFU@cappingword{#1}%
#2\@MFUfirstwordbreak#3\@endMFUfirstwordbreak
\fi
}
\newcommand*{\@MFU@firstwordbreakcapword}[1]{%
\@mfu@domakefirstuc{#1}%
}
\newcommand*\mfu@checkword[1]{%
\def\mfu@checkword@arg{#1}%
\let\@mfu@domakefirstuc\@MFU@do@capword
\forlistloop\mfu@checkword@do\@mfu@nocaplist
}
\newcommand*{\mfu@checkword@do}[1]{%
\def\mfu@checkword@argii{#1}%
\ifdefequal\mfu@checkword@arg\mfu@checkword@argii
{%
\let\@mfu@domakefirstuc\@firstofone
\listbreak
}%
{%
\def\mfu@checkword@argii{#1{\@mfu@terminator}}%
\ifdefequal\mfu@checkword@arg\mfu@checkword@argii
{%
\let\@mfu@domakefirstuc\@firstofone
\listbreak
}%
}%
}
}
\newcommand*{\@mfu@nocaplist}{}
\newcommand*\MFUnocap[1]{\listadd{\@mfu@nocaplist}{#1}}
\newcommand*\gMFUnocap[1]{\listgadd{\@mfu@nocaplist}{#1}}
\newcommand*\MFUclear{\renewcommand*\@mfu@nocaplist{}}
\newcommand*\xcapitalisewords[1]{%
\expandafter\capitalisewords\expandafter{#1}%
}
\newrobustcmd*\ecapitalisewords[1]{%
\protected@edef\@MFU@caparg{#1}%

```

```

\expandafter\capitalisewords\expandafter{\@MFU@caparg}%
}
\newcommand\@mfu@nil{\unskip}
\newcommand*\@mfu@nnil{\@mfu@nil}
\newcommand*\capitalisefmtwords{%
\@ifstar\@s@capitalisefmtwords\@ns@capitalisefmtwords
}
\newcommand*\@s@capitalisefmtwords[1]{%
\@s@checkgrp@capitalisefmtwords#1\@nil
}
\newcommand*\@s@checkgrp@capitalisefmtwords{%
\@ifnextchar\bgroup{\@s@noc@capitalisefmtwords}\@s@capitalisefmtwords}%
}
\def\@s@noc@capitalisefmtwords#1\@nil{%
\capitalisewords{#1}%
}
\newcommand*\@s@capitalisefmtwords[1]{%
\def\gls@argi{#1}%
\ifx\gls@argi\@MFU@protect
\let\@mfu@capfmtwordsnext\@s@capitalisefmtwords
\else
\ifx\gls@argi\@nnil
\let\@mfu@capfmtwordsnext\relax
\else
\def\@gls@tmp{\ #1}%
\@onelevel@sanitize\@gls@tmp
\expandafter\@gls@checkcs\@gls@tmp\relax\relax
\if@glscs
\def\@mfu@capfmtwordsnext{\@s@cs@capitalisefmtwords#1}%
\else
\def\@mfu@capfmtwordsnext{\@s@noc@capitalisefmtwords#1}%
\fi
\fi
\fi
\@mfu@capfmtwordsnext
}
\newcommand*\@s@cs@capitalisefmtwords[1]{%
\@ifnextchar\bgroup
{\@s@cs@g@capitalisefmtwords#1}%
{\@s@cs@ng@capitalisefmtwords#1}%
}
\def\@s@cs@g@capitalisefmtwords#1#2#3\@nil{%
#1{\capitalisewords{#2}}%
\ifblank{#3}%
{}%
{%
\def\gls@add@space{}%
\let\@mfu@checkword\mfu@checkword
\mfu@capitalisewords#3 \@nil\mfu@endcap
}%
}

```

```

}
\def\@s@cs@ng@capitalisefmtwords#1#2\@nil{%
  \capitalisewords{#1#2}%
}
\newcommand*\@ns@capitalisefmtwords}[1]{%
  \let\@mfu@checkword\@gobble
  \def\gls@add@space{%
    \@capitalisefmtwords#1 \@mfu@nil{} \unskip
  }
}
\newcommand*\@capitalisefmtwords{%
  \@ifnextchar\bgroup{\@capitalise@g@fmtwords}{\@capitalise@ng@fmtwords}%
}
\newcommand*\@capitalise@g@fmtwords}[1]{%
  \@capitalise@ng@fmtwords{#1}%
}
\def\@mfu@ifnil#1#2\@mfu@end@nil#3#4{%
  \def\gls@argi{#1}%
  \ifx\gls@argi\@mfu@nnil
    #3%
  \else
    #4%
  \fi
}
\def\@capitalise@ng@fmtwords#1 {%
  \@mfu@ifnil#1\relax\relax\@mfu@end@nil
  {%
    \def\@mfu@capfmtwordsnext{#1}%
  }%
  {%
    \def\@mfu@capfmtwordsnext{%
      \@capitalise@fmtwords#1\@mfu@nil
      \def\gls@add@space{ }%
      \let\@mfu@checkword\mfu@checkword
      \@@cap@nofmtphrase}%
    }%
  \@mfu@capfmtwordsnext
}%
\def\@capitalise@fmtwords#1{%
  \@mfu@ifnil#1\relax\relax\@mfu@end@nil
  {%
    \def\@mfu@capfmtwordsnext{#1}%
  }%
  {%
    \def\gls@argi{#1}%
    \ifx\gls@argi\@MFU@protect
      \def\@mfu@capfmtwordsnext{\@capitalise@fmtwords}%
    \else
      \def\@gls@tmp{\ #1}%
      \@onelevel@sanitize\@gls@tmp
      \expandafter\@gls@checkcs\@gls@tmp\relax\relax
    \fi
  }%
}

```

```

\if@glscs
\def\mfu@capfmtwordsnext{\@@capitalisefmtwords#1}%
\else
\ifx\gls@cargi\@empty
\def\mfu@capfmtwordsnext{\@@capnofmtphrase{}}%
\else
\def\mfu@capfmtwordsnext{\@@capnofmtphrase#1}%
\fi
\fi
\fi
}%
\mfu@capfmtwordsnext
}
\def\@@capitalisefmtwords#1{%
\ifnextchar\bgroup{\@@capfmtsubphrase#1}{\@@capnofmtphrase#1}%
}
\def\@@capnofmtphrase{%
\ifnextchar\bgroup{\@@cap@g@nofmtphrase}{\@@cap@ng@nofmtphrase}%
}
\def\@@cap@ng@nofmtphrase#1\mfu@nil{%
\gls@add@space
\mfu@mid@capitalisewords{#1}%
\def\gls@add@space{ }%
}
\def\@@cap@g@nofmtphrase#1{%
\@@cap@ng@nofmtphrase{#1}%
}
\newcommand*\mfu@terminator{\hbox{}}
\def\@@capfmtsubphrase#1#2#3{%
#1{\@@capitalisefmtwords#2{\mfu@terminator} \mfu@nil{} \unskip}%
\def\gls@add@space{ }%
\let\mfu@checkword\mfu@checkword
\mfu@ifnil#1\relax\relax\mfu@end@nil
{\let\mfu@fntsubphrasenext\relax}%
{\def\mfu@fntsubphrasenext{#3}}%
\mfu@fntsubphrasenext
}
\def\@@cap@nofmtphrase#1 {%
\mfu@ifnil#1\relax\relax\mfu@end@nil
{%
\def\mfu@capnofmtwordsnext{#1 }%
}%
{%
\def\mfu@capnofmtwordsnext{%
\@@capitalisefmtwords#1 \mfu@nil{} \unskip
\def\gls@add@space{ }%
\let\mfu@checkword\mfu@checkword
\@@capitalisefmtwords
}%
}%
}

```

```

\@mfu@capnofmtwordsnext
}
\newcommand*\xcapitalisefmtwords}{%
  \@ifstar\@s@xcapitalisefmtwords\@ns@xcapitalisefmtwords
}
\newcommand*\@s@xcapitalisefmtwords}[1]{%
  \expandafter\@s@capitalisefmtwords\expandafter{#1}%
}
\newcommand*\@ns@xcapitalisefmtwords}[1]{%
  \expandafter\@ns@capitalisefmtwords\expandafter{#1}%
}
\newrobustcmd*\ecapitalisefmtwords}{%
  \@ifstar\@s@ecapitalisefmtwords\@ns@ecapitalisefmtwords
}
\newcommand*\@s@ecapitalisefmtwords}[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\@s@capitalisefmtwords\expandafter{\@MFU@caparg}%
}
\newcommand*\@ns@ecapitalisefmtwords}[1]{%
  \protected@edef\@MFU@caparg{#1}%
  \expandafter\@ns@capitalisefmtwords\expandafter{\@MFU@caparg}%
}
}

```

## Change History

1.03 – 2008/12/22		\@capitalisefmtwords: new ..	12
	\@makefirstuc: changed	\@gls@split: added check for	
	\protected@edef to \def ..	datatool-base UTF-8 support	17
1.05 – 2011/04/02		\@mfu@applytofirst: new ....	18
	\glsmakefirstuc: new .....	\@mfu@mid@capitalisewords:	
		new .....	8
1.06 – 2012/05/21		\@capitalisefmtwords: new ...	11
	General: now requires etoolbox ..	\@ecapitalisefmtwords: new ..	15
	\@capitalisewords: new .....	\ifMFUhyphen: new .....	8
	\@xcapitalisewords: new .....	\MFUapplytofirst: new .....	19
1.08 – 2013-11-04		\MFUcapword: new .....	8
	\@org@makefirstuc: made robust	\@xcapitalisefmtwords: new ..	15
	\@capitalisewords: made robust .		
	\@makefirstuc: made robust ....	2.04 – 2016-07-31	
1.09 – 2017-07-30		\@@cap@g@nofmtphrase: new ..	14
	\@mfu@nocaplist: new .....	\@@cap@ng@nofmtphrase: new .	14
	\@capitalisewords: added check	\@@s@capitalisefmtwords: new	11
	for words that shouldn't be	\@@s@checkgrp@capitalisefmtwords:	
	capitalised .....	new .....	11
	\gMFUnocap: new .....	\@@s@cs@capitalisefmtwords:	
	\mfu@checkword: new .....	new .....	12
	\MFUclear: new .....	\@@s@cs@g@capitalisefmtwords:	
	\MFUnocap: new .....	new .....	12
1.10 – 2015/05/03		\@@s@cs@ng@capitalisefmtwords:	
	\@capitalisewords: new .....	new .....	12
	\@makefirstuc: new .....	\@@s@noc@capitalisefmtwords:	
		new .....	11
2.0 – 2015/09/09		\@gls@split: added missing false	
	General: package split from	part .....	18
	glossaries .....	\@mfu@terminator: new .....	14
	\@makefirstuc: added check for	\@ns@capitalisefmtwords: new	12
	two control sequences .....	\@ns@ecapitalisefmtwords: new	15
2.01 – 2015-12-08		\@ns@xcapitalisefmtwords: new	15
	\@org@makefirstuc: added check	\@s@capitalisefmtwords: new .	11
	for \protect .....	\@s@ecapitalisefmtwords: new	15
2.02 – 2015-12-17		\@s@xcapitalisefmtwords: new	15
	\mfu@checkword: modified to use		
	loop instead of \ifinlist ..	2.05 – 2017-11-10	
	\mfu@checkword@do: new .....	\@mfu@applytofirst: grouped	
		first argument .....	18, 19
2.03 – 2016-07-29			
	\@@cap@nofmtphrase: new .....	2.06 – 2017-11-14	
	\@@capfntsubphrase: new .....	\@makefirstuc: added braces to	
	\@@capitalisefmtwords: new .	\glsmakefirstuc argument .	17
	\@@capnofmtphrase: new .....	check for inner control sequence	17
	\@MFU@p@makefirstuc: changed		
	test .....	2.07 – 2021-10-15	
	\@MFU@protect: new .....	\@MFU@do@capword: new .....	8
	\@MFUcapword: new .....	\@MFU@do@first@capword: new ..	8
	\@capitalise@fntwords: new .	\@MFU@firstwordbreakcapword:	
		new .....	10

\@MFUp@makefirstuc: check for		\@org@makefirstuc: updated to	
\MFUskipunc .....	16	use \MFUsentencecase .....	16
\@MFU@skipunc: new .....	16	expanded: new .....	2
\@MFU@wordbreakcapword: new ..	9	grabfirst: new .....	2
\@MFUfirstwordbreak: new .....	9	\makefirstuc: reimplement using	
\@MFUwordbreak: new .....	9	L <sup>A</sup> T <sub>E</sub> X3 .....	4
\MFUcapwordfirstuc: new .....	7	\MFUaddmap: new .....	6
\MFUhyphencapword: new .....	9	\MFUapplytofirst: deprecated ..	19
\MFUskipunc: new .....	7	\MFUblocker: new .....	3
\MFUwordbreak: new .....	9	\MFUexcl: new .....	3
2.08 – 2022-10-14		\mfugrabfirstuc: new .....	2
\@MFUsavetoaux: new .....	6	\MFUsave: new .....	6
\@gls@makefirstuc: updated to		\MFUsaveatend: new .....	6
use \MFUsentencecase .....	19	\MFUsentencecase: new .....	3
\@mfu@grabfirstuc: new .....	2	unexpanded: new .....	2

## Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the definition; numbers in *roman* refer to the pages where the entry is used.

Symbols	
\@@cap@g@nofmtphrase . . . . .	14, <u>14</u> , 28
\@@cap@ng@nofmtphrase . . . . .	14, <u>14</u> , 28
\@@cap@nofmtphrase . . . . .	13, <u>15</u> , 27, 28
\@@capfmtsubphrase . . . . .	14, <u>14</u> , 28
\@@capitalisefmtwords . . . . .	13, <u>14</u> , 28
\@@capnofmtphrase . . . . .	14, <u>14</u> , 28
\@@s@capitalisefmtwords . . . . .	11, <u>11</u> , 26
\@@s@checkgrp@capitalisefmtwords . . . . .	11, 26
\@@s@checkgrp@capitalisefmtwords . . . . .	<u>11</u>
\@@s@cs@capitalisefmtwords . . . . .	12, <u>12</u> , 26
\@@s@cs@g@capitalisefmtwords . . . . .	12, <u>12</u> , 26
\@@s@cs@ng@capitalisefmtwords . . . . .	12, <u>12</u> , 26, 27
\@@s@nocs@capitalisefmtwords . . . . .	11, <u>11</u> , 12, 26
\@MFU@caparg . . . . .	7, 11, 15, 23, 25, 26, 29
\@MFU@cappingword . . . . .	8, 9, 24, 25
\@MFU@do@capword . . . . .	8, <u>8</u> , 10, 23–25
\@MFU@dofirst@capword . . . . .	7, <u>8</u> , 23, 24
\@MFU@firstwordbreakcapword . . . . .	9, <u>10</u> , 25
\@MFU@p@makefirststuc . . . . .	16, <u>16</u> , 20
\@MFU@protect . . . . .	11, 13, 16, <u>16</u> , 20, 26, 27
\@MFU@skippunc . . . . .	16, <u>16</u> , 20
\@MFU@wordbreakcapword . . . . .	9, <u>9</u> , 24, 25
\@MFU@capword . . . . .	9, <u>9</u> , 24
\@MFU@firstwordbreak . . . . .	8, <u>9</u> , 24, 25
\@MFU@savetoaux . . . . .	6, <u>6</u>
\@MFU@wordbreak . . . . .	8, <u>9</u> , 24
\@auxout . . . . .	6, 7
\@capitalise@fmtwords . . . . .	13, <u>13</u> , 27
\@capitalise@g@fmtwords . . . . .	13, 27
\@capitalise@ng@fmtwords . . . . .	13, 27
\@capitalisefmtwords . . . . .	12, <u>12</u> , 14, 15, 27, 28
\@empty . . . . .	13, 16, 17, 21, 28
\@end@MFU@protected . . . . .	16, 20
\@end@MFU@capword . . . . .	9, 24
\@end@MFU@firstwordbreak . . . . .	8, 9, 24, 25
\@end@MFU@wordbreak . . . . .	8, 9, 24
\@firstofone . . . . .	10, 25
\@gls@argi . . . . .	18, 22
\@gls@argii . . . . .	18, 22
\@gls@body . . . . .	17, 19, 21, 23
\@gls@checkcs . . . . .	12, 13, 17, 18, 21, 22, 26, 27
\@gls@domfirststuc . . . . .	17, 21
\@gls@first . . . . .	17, 18, 21, 22
\@gls@getbody . . . . .	17, 19, 21, 23
\@gls@gobbletonil . . . . .	19, 23
\@gls@makefirststuc . . . . .	19, 23
\@gls@rest . . . . .	17–19, 21–23
\@gls@split . . . . .	17, <u>17</u> , 21, 22
\@gls@tmp . . . . .	12, 13, 17, 21, 26, 27
\@gls@cs@false . . . . .	17, 18, 21, 22
\@gls@cs@true . . . . .	17, 18, 21, 22
\@gls@mfirst . . . . .	16, 17, 20, 21
\@gls@mrest . . . . .	16, 17, 20, 21
\@gobble . . . . .	7, 12, 17, 21, 23, 27
\@ifnextchar . . . . .	11–14, 26–28
\@ifstar . . . . .	11, 15, 26, 29
\@makefirststuc . . . . .	16, <u>16</u> , 20, 21
\@mfu@applytofirst . . . . .	<u>18</u> , 19, 22, 23
\@mfu@argii . . . . .	9, 24
\@mfu@argiii . . . . .	9, 24, 25
\@mfu@blockers . . . . .	6, 7
\@mfu@capfmtwordsnext . . . . .	11–14, 26–28
\@mfu@capnofmtwordsnext . . . . .	15, 28, 29
\@mfu@checkword . . . . .	7, 8, 12–15, 23, 24, 26–28
\@mfu@domakefirststuc . . . . .	7–10, 23, 25
\@mfu@end@applytofirst . . . . .	18, 19, 22, 23
\@mfu@end@nil . . . . .	13–15, 27, 28
\@mfu@excls . . . . .	6, 7
\@mfu@fmtsubphrasenext . . . . .	14, 28
\@mfu@grabfirststuc . . . . .	2, <u>2</u>
\@mfu@ifnil . . . . .	13–15, 27, 28
\@mfu@mappings . . . . .	6, 7
\@mfu@mid@capitalisewords . . . . .	8, 14, 23, 28
\@mfu@nil . . . . .	11, <u>11</u> , 12–15, 26–28



<code>\@mfu@nnil</code> .....	11, 13, 26, 27	<code>\expandafter</code> .....	4, 7, 11–13, 15, 17, 18, 21–23, 25–27, 29
<code>\@mfu@nocaplist</code> .....	10, 10, 25	expanded (option) .....	2
<code>\@mfu@terminator</code> ..	10, 14, 14, 25, 28	<code>\expandonce</code> .....	5, 7, 17, 21
<code>\@nil</code> ..	7–9, 11, 12, 17–19, 21–24, 26, 27	<code>\ExplSyntaxOff</code> .....	2, 7
<code>\@nnil</code> .....	8, 9, 11, 24–26	<code>\ExplSyntaxOn</code> .....	2, 3
<code>\@ns@capitalisefmtwords</code> .....	11, 12, 15, 26, 27, 29	<b>F</b>	
<code>\@ns@ecapitalisefmtwords</code> ..	15, 15, 29	<code>\fi</code> ..	8, 9, 12–14, 16–18, 20–22, 24–28
<code>\@ns@xcapitalisefmtwords</code> ..	15, 15, 29	<code>\forlistloop</code> .....	10, 25
<code>\@onelevel@sanitize</code> .....	12, 13, 17, 21, 26, 27	<b>G</b>	
<code>\@org@makefirstuc</code> .....	16	<code>\gls@add@space</code> .....	7, 8, 12–15, 23, 24, 26–28
<code>\@s@capitalisefmtwords</code> .....	11, 11, 15, 26, 29	<code>\gls@argi</code> ..	11, 13, 16, 20, 21, 26–28
<code>\@s@ecapitalisefmtwords</code> ..	15, 15, 29	<code>\gls@makefirstuc</code> ..	2, 2, 4, 5, 17, 21, 23
<code>\@s@xcapitalisefmtwords</code> ..	15, 15, 29	<code>\gMFUnocap</code> .....	10, 25
<code>\@</code> .....	12, 13, 17, 21, 26, 27	grabfirst (option) .....	2
<code>\_</code> .....	5	<b>H</b>	
<b>A</b>		<code>\hbox</code> .....	14, 28
<code>\AtEndDocument</code> .....	6	<b>I</b>	
<b>B</b>		<code>\if@glscs</code> ..	12, 13, 16, 17, 20, 21, 26, 28
<code>\bgroup</code> .....	11–14, 26–28	<code>\ifblank</code> .....	12, 19, 23, 26
<b>C</b>		<code>\ifbool</code> .....	18, 19, 22, 23
<code>\capitalisefmtwords</code> .....	11, 26	<code>\ifdef</code> .....	18, 19, 21, 22
<code>\capitalisewords</code> ..	7, 11, 12, 23, 25–27	<code>\ifdefequal</code> .....	10, 25
<code>\cs</code> .....	3–6	<code>\ifMFUhyphen</code> .....	8, 8, 24
<b>D</b>		<code>\ifx</code> ..	8, 9, 11, 13, 16–18, 20–22, 24–28
<code>\DeclareCurrentRelease</code> .....	1	<b>L</b>	
<code>\DeclareOption</code> .....	2	<code>\l</code> .....	3–7
<code>\DeclareRelease</code> .....	1	<code>\let</code> .....	5–15, 18, 22–28
<code>\def</code> .....	7–28	<code>\listadd</code> .....	10, 25
<code>\dtl@end@if@two@octets</code> .....	18, 22	<code>\listbreak</code> .....	10, 25
<code>\dtl@first</code> .....	18, 22	<code>\listgadd</code> .....	10, 25
<code>\dtl@getfirst@UTFviii</code> ..	18, 19, 21, 22	<b>M</b>	
<code>\dtl@if@two@octets</code> .....	18, 22	<code>\makefirstuc</code> ..	4, 5, 7, 17, 20, 21, 23, 24
<code>\dtl@rest</code> .....	18, 22	<code>\MakeUppercase</code> .....	2, 23
<b>E</b>		<code>\mfirstuc</code> .....	3, 5, 6
<code>\ecapitalisefmtwords</code> .....	15, 29	<code>\mfirstucMakeUppercase</code> .....	2, 2, 23
<code>\ecapitalisewords</code> .....	11, 25	<code>\mfu@cap@first</code> .....	8, 23
<code>\edef</code> .....	17, 21	<code>\mfu@cap@second</code> .....	8, 23, 24
<code>\else</code> ..	8, 9, 11–14, 16–18, 20–22, 24–28	<code>\mfu@capitalisewords</code> .....	7, 8, 12, 23, 24, 26
<code>\emakefirstuc</code> .....	7, 23	<code>\mfu@checkword</code> ..	8, 9, 10, 12–15, 24–28
<code>\empty</code> .....	2	<code>\mfu@checkword@arg</code> .....	10, 25
<code>\end@dtl@getfirst@UTFviii</code> ..	18, 22	<code>\mfu@checkword@argii</code> .....	10, 25
<code>\ensuremath</code> .....	3		

<code>\mfu@checkword@do</code> . . . . .	10, <u>10</u> , 25	<b>P</b>	
<code>\mfu@endcap</code> . . . . .	7, 8, 12, 23, 24, 26	<code>\ProcessOptions</code> . . . . .	2
<code>\mfu@noop</code> . . . . .	8, 24	<code>\prop</code> . . . . .	5–7
<code>\MFUaddmap</code> . . . . .	<u>6</u>	<code>\protect</code> . . . . .	4, 16, 20
<code>\MFUapplytofirst</code> . . . . .	<u>19</u> , 23	<code>\protected@edef</code> . . . . .	7, 11, 15, 23, 25, 29
<code>\MFUblocker</code> . . . . .	<u>3</u> , 6	<code>\protected@write</code> . . . . .	6, 7
<code>\MFUcapword</code> . . . . .	8, <u>8</u> , 24	<code>\providecommand</code> . . . . .	6
<code>\MFUcapwordfirstuc</code> . . . . .	<u>7</u> , 8, 9, 24	<code>\ProvidesPackage</code> . . . . .	1, 20
<code>\MFUclear</code> . . . . .	<u>10</u> , 25	<b>Q</b>	
<code>\MFUexcl</code> . . . . .	3, <u>3</u> , 4, 6, 7	<code>\quark</code> . . . . .	5
<code>\mfugrabfirstuc</code> . . . . .	<u>2</u> , <u>2</u>	<b>R</b>	
<code>\MFUhyphencapword</code> . . . . .	8, <u>9</u> , 24	<code>\relax</code> . . . . .	4, 6, 12–23, 26–28
<code>\MFUhyphenfalse</code> . . . . .	8, 24	<code>\renewcommand</code> . . . . .	2, 10, 25
<code>\MFUnocap</code> . . . . .	<u>10</u> , 20, 25	<code>\RequirePackage</code> . . . . .	1, 20
<code>\MFUsave</code> . . . . .	<u>6</u>	<b>S</b>	
<code>\MFUsaveatend</code> . . . . .	6, <u>6</u>	<code>\string</code> . . . . .	7
<code>\MFUsentencecase</code> . . . . .	2, <u>3</u> , 19	<b>T</b>	
<code>\MFUskippunc</code> . . . . .	<u>7</u> , 16, 20	<code>\text</code> . . . . .	2, 3
<code>\MFUwordbreak</code> . . . . .	8, 9, <u>9</u> , 24, 25	<code>\the</code> . . . . .	17, 21
		<code>\tl</code> . . . . .	3–7
<b>N</b>		<b>U</b>	
<code>\NeedsTeXFormat</code> . . . . .	1, 20	<code>\unexpanded</code> . . . . .	2
<code>\newcommand</code> . . . . .	2, 3, 6–16, 19–21, 23–29	unexpanded (option) . . . . .	<u>2</u>
<code>\newif</code> . . . . .	8, 16, 20, 24	<code>\unskip</code> . . . . .	11, 12, 14, 15, 26–28
<code>\newrobustcmd</code> . . . . .	2, 4, 6, 7, 9, 11, 15, 16, 20, 23–25, 29	<b>X</b>	
<code>\newtoks</code> . . . . .	16, 20	<code>\xcapitalisefmtwords</code> . . . . .	<u>15</u> , 29
<code>\next@mfu@cap</code> . . . . .	8, 24	<code>\xcapitalisewords</code> . . . . .	<u>11</u> , 25
<code>\noexpand</code> . . . . .	17, 21	<code>\xmakefirstuc</code> . . . . .	<u>7</u> , 23
<b>O</b>			
options:			
expanded . . . . .	<u>2</u>		
grabfirst . . . . .	<u>2</u>		
unexpanded . . . . .	<u>2</u>		