

mfirstuc.sty v2.0: uppercasing first letter

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1 Introduction

The mfirstuc package was originally part of the glossaries bundle for use with commands like `\Gls`, but as the commands provided by mfirstuc may be used without glossaries, the two have been split into separately maintained packages.

2 Capitalising a Word

A simple word can be capitalised just using the standard \TeX upper casing command. For example,

```
\MakeUppercase word
```

but for commands like `\Gls` the word may be embedded within the argument of another command, such as a font changing command. This makes things more complicated for a general purpose solution, so the mfirstuc package provides:

`\makefirstuc`

`\makefirstuc{<stuff>}`

This makes the first object of `<stuff>` upper case unless `<stuff>` starts with a control sequence followed by a non-empty group, in which case the first object in the group is converted to upper case. **No expansion is performed on the argument.**

If `<stuff>` starts with a control sequence that takes more than one argument, the case-changing will always be applied to the *first* argument. If the text that requires the case change is in one of the other arguments, you must hide the earlier arguments in a wrapper command. For example, instead of `\color{red}{text}` you need to define, say, `\red` as `\color{red}` and use `\red{text}`.

Examples:

- `\makefirstuc{abc}` produces `Abc`.
- `\makefirstuc{\emph{abc}}` produces `Abc` (`\MakeUppercase` has been applied to the letter “a” rather than `\emph`). Note however that

```
\makefirstuc{{\em abc}}
```

produces `ABC` (first object is `{\em abc}` so this is equivalent to `\MakeUppercase{\em abc}`), and

```
{\makefirstuc{\em abc}}
```

produces `abc` (`\em` doesn't have an argument therefore first object is `\em` and so is equivalent to `{\MakeUppercase{\em}abc}`).

- `\makefirstuc{{\`a}bc}` produces `Ábc`.
- `\makefirstuc{\ae bc}` produces `Æbc`.
- `\makefirstuc{{\ae}bc}` produces `Æbc`.
- `\makefirstuc{{\`a}bc}` produces `Äbc`.

Note that non-Latin or accented characters appearing at the start of the text must be placed in a group (even if you are using the `inputenc` package). The reason for this restriction is detailed in Section 4.

In version 1.02 of `mfirstuc`, a bug fix resulted in a change in output if the first object is a control sequence followed by an empty group. Prior to version 1.02, `\makefirstuc{\ae{ }bc}` produced `æBc`. However as from version 1.02, it now produces `ÆBc`.

Note also that

```
\newcommand{\abc}{abc}
\makefirstuc{\abc}
```

produces: ABC. This is because the first object in the argument of `\makefirstuc` is `\abc`, so it does `\MakeUppercase{\abc}`. Whereas:

```
\newcommand{\abc}{abc}
\expandafter\makefirstuc\expandafter{\abc}
```

produces: Abc. There is a short cut command which will do this:

`\xmakefirstuc`

```
\xmakefirstuc{<stuff>}
```

This is equivalent to `\expandafter\makefirstuc\expandafter{<stuff>}`. So

```
\newcommand{\abc}{abc}
\xmakefirstuc{\abc}
```

produces: Abc.

```
\xmakefirstuc only performs one level expansion on the first object in its
argument. It does not fully expand the entire argument.
```

As from version 1.10, there is now a command that fully expands the entire argument before applying `\makefirstuc`:

`\emakefirstuc`

```
\emakefirstuc{<text>}
```

Examples:

```
\newcommand{\abc}{\xyz a}
\newcommand{\xyz}{xyz}
No expansion: \makefirstuc{\abc}.
First object one-level expansion: \xmakefirstuc{\abc}.
Fully expanded: \emakefirstuc{\abc}.
```

produces: No expansion: XYZA. First object one-level expansion: XYZa. Fully expanded: Xyza.

If you use `mfirstuc` without the `glossaries` package, the standard `\MakeUppercase` command is used. If used with `glossaries`, `\MakeTextUppercase` (defined by the `textcase` package) is used instead. If you are using `mfirstuc` without the `glossaries` package and want to use `\MakeTextUppercase` instead, you can redefine

`\glsmakefirstuc`

```
\glsmakefirstuc{<text>}
```

For example:

```
\renewcommand{\glsmakefirstuc}[1]{\MakeTextUppercase #1}
```

Remember to also load `textcase` (`glossaries` loads this automatically).

3 Capitalise Each Word in a Phrase or Sentence (Title Case)

New to mfirstuc v1.06:

`\capitalisewords`

```
\capitalisewords{<text>}
```

This command apply `\makefirstuc` to each word in `<text>` where the space character is used as the word separator. Note that it has to be a plain space character, not another form of space, such as `~` or `\space`. Note that no expansion is performed on `<text>`.

`\xcapitalisewords`

```
\xcapitalisewords{<text>}
```

This is a short cut for `\expandafter\capitalisewords\expandafter{<text>}`.

As from version 1.10, there is now a command that fully expands the entire argument before applying `\capitalisewords`:

`\ecapitalisewords`

```
\ecapitalisewords{<text>}
```

Examples:

```
\newcommand{\abc}{\xyz\space four five}
```

```
\newcommand{\xyz}{one two three}
```

No expansion: `\capitalisewords{\abc}`.

First object one-level expansion: `\xcapitalisewords{\abc}`.

Fully expanded: `\ecapitalisewords{\abc}`.

produces: No expansion: ONE TWO THREE FOUR FIVE. First object one-level expansion: ONE TWO THREE four Five. Fully expanded: One Two Three Four Five.

(Remember that the spaces need to be explicit. In the second case above, using `\xcapitalisewords`, the space before “four” has been hidden within `\space` so it’s not recognised as a word boundary, but in the third case, `\space` has been expanded to an actual space character.)

If you are using `hyperref` and want to use `\capitalisewords` or `\makefirstuc` (or the expanded variants) in a section heading, the PDF bookmarks won't be able to use the command as it's not expandable, so you will get a warning that looks like:

```
Package hyperref Warning: Token not allowed in a PDF string
(PDFDocEncoding):
(hyperref)                removing '\capitalisewords'
```

If you want to provide an alternative for the PDF bookmark, you can use `hyperref`'s `\texorpdfstring` command. See the `hyperref` manual for further details.

Examples:

1. `\capitalisewords{a book of rhyme.}`

produces: A Book Of Rhyme.

2. `\capitalisewords{a book\space of rhyme.}`

produces: A Book of Rhyme.

3. `\newcommand{\mytitle}{a book\space of rhyme.}`
`\capitalisewords{\mytitle}`

produces: A BOOK OF RHYME. (No expansion is performed on `\mytitle`.)

Compare with next example:

4. `\newcommand{\mytitle}{a book\space of rhyme.}`
`\xcapitalisewords{\mytitle}`

produces: A Book of Rhyme.

However

`\ecapitalisewords{\mytitle}`

produces: A Book Of Rhyme.

As from v1.09, you can specify words which shouldn't be capitalised unless they occur at the start of *<text>* using:

`\MFUnocap`

`\MFUnocap{<word>}`

This only has a local effect. The global version is:

`\gMFUnocap`

`\gMFUnocap{<word>}`

For example:

```
\capitalisewords{the wind in the willows}
```

```
\MFUnocap{in}%  
\MFUnocap{the}%
```

```
\capitalisewords{the wind in the willows}
```

produces:

```
The Wind In The Willows  
The Wind in the Willows
```

The list of words that shouldn't be capitalised can be cleared using

```
\MFUclear
```

```
\MFUclear
```

The package `mfirstuc-english` loads `mfirstuc` and uses `\MFUnocap` to add common English articles and conjunctions, such as “a”, “an”, “and”, “but”. You may want to add other words to this list, such as prepositions, but as there's some dispute over whether prepositions should be capitalised, I don't intend to add them to this package.

If you want to write a similar package for another language, all you need to do is create a file with the extension `.sty` that starts with

```
\NeedsTeXFormat{LaTeX2e}
```

The next line should identify the package. For example, if you have called the file `mfirstuc-french.sty` then you need:

```
\ProvidesPackage{mfirstuc-french}
```

It's a good idea to also add a version in the final optional argument, for example:

```
\ProvidesPackage{mfirstuc-french}[2014/07/30 v1.0]
```

Next load `mfirstuc`:

```
\RequirePackage{mfirstuc}
```

Now add all your `\MFUnocap` commands. For example:

```
\MFUnocap{de}
```

At the end of the file add:

```
\endinput
```

Put the file somewhere on \TeX 's path, and now you can use this package in your document. You might also consider uploading it to CTAN in case other users find it useful.

4 UTF-8

The `\makefirstuc` command works by utilizing the fact that, in most cases, \TeX doesn't require a regular argument to be enclosed in braces if it only consists of a single token. (This is why you can do, say, `\frac12` instead of `\frac{1}{2}` or `x^2` instead of `x^{2}`, although some users frown on this practice.)

A simplistic version of the `\makefirstuc` command is:

```
\newcommand*\FirstUC}[1]{\MakeUppercase #1}
```

Here

```
\FirstUC{abc}
```

is equivalent to

```
\MakeUppercase abc
```

and since `\MakeUppercase` requires an argument, it grabs the first token (the character “a” in this case) and uses that as the argument so that the result is: `Abc`.

The `glossaries` package needs to take into account the fact that the text may be contained in the argument of a formatting command, such as `\acronymfont`, so `\makefirstuc` has to be more complicated than the trivial `\FirstUC` shown above, but at its basic level, `\makefirstuc` uses this same method and is the reason why, in most cases, you don't need to enclose the first character in braces. So if

```
\MakeUppercase <stuff>
```

works, then

```
\makefirstuc{<stuff>}
```

should also work and so should

```
\makefirstuc{\foo{<stuff>}}
```

but if

```
\MakeUppercase <stuff>
```

doesn't work, then neither will

```
\makefirstuc{<stuff>}
```

nor

```
\makefirstuc{\foo{<stuff>}}
```

Try the following document:

```
\documentclass{article}

\usepackage[utf8]{inputenc}
\usepackage[T1]{fontenc}

\begin{document}

\MakeUppercase ãbc

\end{document}
```

This will result in the error:

```
! Argument of \UTFviii@two@octets has an extra }.
```

This is why `\makefirstuc{ãbc}` won't work. It will only work if the character `ã` is placed inside a group.

The reason for this error message is due to \TeX having been written before Unicode was invented. Although `ã` may look like a single character in your text editor, from \TeX 's point of view it's *two* tokens. So

```
\MakeUppercase ãbc
```

tries to apply `\MakeUppercase` to just the first octet of `ã`. This means that the second octet has been separated from the first octet, which is the cause of the error. In this case the argument isn't a single token, so the two tokens (the first and second octet of `ã`) must be grouped:

```
\MakeUppercase{ã}bc
```

Note that $X_{\text{Y}}\TeX$ (and therefore $X_{\text{Y}}\LaTeX$) is a modern implementation of \TeX designed to work with Unicode and therefore doesn't suffer from this drawback. Now let's look at the $X_{\text{Y}}\LaTeX$ equivalent of the above example:

```
\documentclass{article}

\usepackage{fontspec}

\begin{document}

\MakeUppercase ãbc

\end{document}
```

This works correctly when compiled with $X_{\text{Y}}\LaTeX$. This means that `\makefirstuc{ãbc}` will work *provided you use $X_{\text{Y}}\LaTeX$ and the `fontspec` package*.