

The **engord** package

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Abstract

The package generates the suffix of English ordinal numbers. It can be used with plain and L^AT_EX formats.

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1 Usage

`\engord{<LATEX counter name>}`

It prints the value of the L^AT_EX counter as English ordinal number. It can be used in the same way as `\arabic`, `\roman`, or `\alph`. The command is not available in plain-T_EX.

`\engordnumber{<any TEX number>}`

It prints the number as English ordinal number.

`\engordletters{#1}`

This command formats the English ordinal letters after the number. It defaults to `\textsuperscript`.

`\engorderror{#1}`

It can be redefined, if an other error handling is wanted. The argument is a negative number or zero.

`\engordraisetrue`
`\engordraisefalse`

These commands set the switch `\ifengordraise` that is asked by the default `\engordletters` before raising the ordinal letters.

1.1 Package options

normal: `\engordraisefalse`

raise: `\engordraisetrue`

Default is raise.

1.2 Examples

- ```
\usepackage[normal]{engord}
\engordnumber{1} → 1st
\engordnumber{12} → 12th
\engordnumber{123} → 123rd
\engord{page} → 1st (if page has the value of one)
\engordraisetrue
\engordnumber{12} → 12th
```

- The default output of a counter can be redefined:

```
\newcounter{mycounter}
\renewcommand{\theengcounter}{\engord{mycounter}}
```

- Because the implementation of `\engord` and `\engordnumber` is kept expandable, these commands can be used to make command names with an appropriate definition of `\engordletters`:

```
\renewcommand*{\engordletters}[1]{#1}
\@namedef{My\engordnumber{3}Command}{...}
```

This generates the command name `'My4rdCommand'`. Since version 1.2 the redefinition can be dropped if the letters are not raised.

- If the letters should not be raised, use L<sup>A</sup>T<sub>E</sub>X package option `normal` or use

```
\engordraisefalse
```

Also `\engordletters` could be redefined for this purpose:

```
\renewcommand*{\engordletters}[1]{#1}
```

## 2 Implementation

### 2.1 Reload check and identification

```
1 (*package)
```

Reload check, especially if the package is not used with L<sup>A</sup>T<sub>E</sub>X.

```
2 \begingroup
3 \expandafter\let\expandafter\x\csname ver@engord.sty\endcsname
4 \ifcase 0%
5 \ifx\x\relax % plain
6 \else
7 \ifx\x\empty % LaTeX
8 \else
9 1%
10 \fi
11 \fi
12 \else
13 \expandafter\ifx\csname PackageInfo\endcsname\relax
14 \def\x#1#2{%
15 \immediate\write-1{Package #1 Info: #2.}%
16 }%
17 \else
18 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
19 \fi
20 \x{engord}{The package is already loaded}%
21 \endgroup
22 \expandafter\endinput
23 \fi
24 \endgroup
```

Package identification:

```
25 \begingroup
26 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
27 \def\x#1#2#3[#4]{\endgroup
28 \immediate\write-1{Package: #3 #4}%
29 \xdef#1{#4}%
30 }%
31 \else
32 \def\x#1#2[#3]{\endgroup
33 #2[#3]}%
34 \ifx#1\relax
35 \xdef#1{#3}%
36 \fi
37 }%
38 \fi
39 \expandafter\x\csname ver@engord.sty\endcsname
40 \ProvidesPackage{engord}%
41 [2006/02/20 v1.2 Provides the ifpdf switch (H0)]
```

### 2.2 Help commands for plain compatibility

\E0@atcode Save catcode of @.

```
42 \expandafter\chardef\csname E0@atcode\endcsname\catcode'\@
43 \catcode'\@=11 %
```

\E0@def Definitions, \newcommand does not exist in plain-T<sub>E</sub>X.

```
44 \begingroup\expandafter\expandafter\expandafter\endgroup
45 \expandafter\ifx\csname newcommand\endcsname\relax
46 \def\E0@def{\def}%
47 \else
48 \def\E0@def#1{%
49 \newcommand*{#1}{}%
50 \def#1%
```

```

51 }%
52 \fi

\EO@PackageWarning

53 \begingroup\expandafter\expandafter\expandafter\endgroup
54 \expandafter\ifx\csname PackageWarning\endcsname\relax
55 \def\EO@PackageWarning#1#2{%
56 \immediate\write16{%
57 Package #1 Warning: #2 on input line \the\inputlineno.%
58 }%
59 }%
60 \else
61 \def\EO@PackageWarning{\PackageWarning}%
62 \fi

```

## 2.3 User macros

`\ifengordraise` The switch `\ifengordraise`, whether the ordinal letters are raised or not. Default is raised because of compatibility.

```

63 \newif\ifengordraise
64 \engordraisetrue

```

In  $\text{\LaTeX}$  this also can be controlled by option `normal` or `raise`.

```

65 \begingroup\expandafter\expandafter\expandafter\endgroup
66 \expandafter\ifx\csname DeclareOption\endcsname\relax
67 \else
68 \DeclareOption{normal}{\engordraisefalse}%
69 \DeclareOption{raise}{\engordraisetrue}%
70 \ProcessOptions*\relax
71 \fi

```

`\engordletters` `\engordletters` is called with one argument, the english ordinal letters, and contains the code to format them. It defaults to `\textsuperscript` depending on `\ifengordraise`.

```

72 \expandafter\ifx\csname engordletters\endcsname\relax
73 \EO@def\engordletters{%
74 \ifengordraise
75 \expandafter\engordtextsuperscript
76 \fi
77 }%
78 \fi

```

`\engordtextsuperscript` For plain- $\text{\TeX}$  the definition is quite ugly, redefine `\engordtextsuperscript` if you have a better one.

```

79 \expandafter\ifx\csname engordtextsuperscript\endcsname\relax
80 \begingroup\expandafter\expandafter\expandafter\endgroup
81 \expandafter\ifx\csname textsuperscript\endcsname\relax
82 \def\engordtextsuperscript#1{%
83 \relax
84 \ifmmode
85 ~{\rm#1}%
86 \else
87 ${\rm#1}$%
88 \fi
89 }%
90 \else
91 \def\engordtextsuperscript{\textsuperscript}%
92 \fi
93 \fi

```

`\engorderror` `\engorderror` is called, if the number is zero or negative.

```

94 \expandafter\ifx\csname engorderror\endcsname\relax
95 \EO@def\engorderror#1{%
96 #1\engordletters{!ERROR!}%
97 \EO@PackageWarning{engord}{%
98 ‘#1’ is not an ordinal number%
99 }%
100 }%
101 \fi

```

`\engord` `\engord` expects a L<sup>A</sup>T<sub>E</sub>X counter name as argument and calls `\engordnumber`. It is defined only, if L<sup>A</sup>T<sub>E</sub>X is used.

```

102 \begingroup\expandafter\expandafter\expandafter\endgroup
103 \expandafter\ifx\csname newcounter\endcsname\relax
104 \else
105 \EO@def\engord#1{%
106 \engordnumber{\value{#1}}%
107 }%
108 \fi

```

`\engordnumber` `\engordnumber` is the user command to print a number as english ordinal number. The argument can be any T<sub>E</sub>X number like explicit numbers, register values, ...

In a safe way it converts the T<sub>E</sub>X number argument into a form that only consists of decimal digits.

```

109 \EO@def\engordnumber#1{%
110 \expandafter\EO@number\expandafter{\number#1}%
111 }

```

## 2.4 Suffix generation

`\EO@number` `\EO@number` expects a number with decimal digits as argument and looks at the size of the number and the count of the digits:

```

112 \def\EO@number#1{%
113 \ifnum#1<1 % handle the error case
114 \engorderror{#1}%
115 \else
116 \ifnum#1<21
117 \EO@ord{#1}%
118 \else
119 \ifnum#1<100
120 \EO@twodigits#1%
121 \else
122 \@ReturnAfterFi{%
123 \EO@reverse#1\@nil}\EO@afterreverse
124 }%
125 \fi
126 \fi
127 \fi
128 }

```

`\@ReturnAfterFi` An internal help macro to prevent a too deep `\if` nesting.

```

129 \long\def\@ReturnAfterFi#1\fi{\fi#1}

```

`\EO@ord` `\EO@ord` prints the number with ord letters.

**#1:** decimal digits,  $\#1 < 21$

```

130 \def\EO@ord#1{%
131 #1%
132 \expandafter\engordletters
133 \ifcase#1{th}\or
134 {st}\or
135 {nd}\or

```

```

136 {rd}\else
137 {th}%
138 \fi
139 }

\EO@twodigits \EO@twodigits expects a number with two digits,
20 < number < 100
140 \def\EO@twodigits#1#2{%
141 #1\EO@ord{#2}%
142 }

\EO@reverse \EO@reverse reverses the digits of the number.
#1: next digit
#2: rest of the digits
#3: already reversed digits
#4: next command to call with the reversed number as argument
143 \def\EO@reverse#1#2\@nil#3#4{%
144 \ifx\#2\%
145 #4{#1#3}%
146 \else
147 \@ReturnAfterFi{%
148 \EO@reverse#2\@nil{#1#3}{#4}%
149 }%
150 \fi
151 }

\EO@afterreverse \EO@afterreverse calls \EO@reverseback so that \EO@reverseback can inspect
the digits of the number.
152 \def\EO@afterreverse#1{%
153 \EO@reverseback#1\@nil
154 }

\EO@reverseback \EO@reverseback reverses the reversion.
#1: the last digit of the number
#2: the second last digit of the number
#3: first digits of the number in reversed order, it is not empty, because
\EO@reverseback is only called with numbers > 100.
155 \def\EO@reverseback#1#2#3\@nil{%
156 \EO@reverse#3\@nil{}\@firstofone
157 \ifnum#2#1<21
158 \EO@ord{#2#1}%
159 \else
160 #2\EO@ord{#1}%
161 \fi
162 }

Restore catcode of @.
163 \catcode'\@=\EO@atcode
164 \end{package}

```

## 3 Installation

### 3.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/engord.dtx](http://ftp.ctan.org/tex-archive/macros/latex/contrib/oberdiek/engord.dtx) The source file.

[CTAN:macros/latex/contrib/oberdiek/engord.pdf](http://ftp.ctan.org/tex-archive/macros/latex/contrib/oberdiek/engord.pdf) Documentation.

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<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

CTAN:macros/latex/contrib/oberdiek/oberdiek-tds.zip

## 3.2 Bundle installation

**Unpacking.** Unpack the oberdiek-tds.zip in the TDS tree (also known as texmf tree) of your choice. Example (linux):

```
unzip oberdiek-tds.zip -d ~/texmf
```

**Script installation.** Check the directory TDS:scripts/oberdiek/ for scripts that need further installation steps. Package attachfile2 comes with the Perl script pdfatfi.pl that should be installed in such a way that it can be called as pdfatfi. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

## 3.3 Package installation

**Unpacking.** The .dtx file is a self-extracting docstrip archive. The files are extracted by running the .dtx through plain-TeX:

```
tex engord.dtx
```

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as texmf tree):

```
engord.sty → tex/generic/oberdiek/engord.sty
engord.pdf → doc/latex/oberdiek/engord.pdf
engord.dtx → source/latex/oberdiek/engord.dtx
```

If you have a docstrip.cfg that configures and enables docstrip’s TDS installing feature, then some files can already be in the right place, see the documentation of docstrip.

## 3.4 Refresh file name databases

If your TeX distribution (TeX, MikTeX, ...) relies on file name databases, you must refresh these. For example, TeX users run texhash or mktexlsr.

## 3.5 Some details for the interested

**Attached source.** The PDF documentation on CTAN also includes the .dtx source file. It can be extracted by AcrobatReader 6 or higher. Another option is pdftk, e.g. unpack the file into the current directory:

```
pdftk engord.pdf unpack_files output .
```

**Unpacking with L<sup>A</sup>T<sub>E</sub>X.** The .dtx chooses its action depending on the format:

**plain-TeX:** Run docstrip and extract the files.

**L<sup>A</sup>T<sub>E</sub>X:** Generate the documentation.

If you insist on using L<sup>A</sup>T<sub>E</sub>X for docstrip (really, docstrip does not need L<sup>A</sup>T<sub>E</sub>X), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{engord.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL<sup>A</sup>T<sub>E</sub>X:

```
pdflatex engord.dtx
makeindex -s gind.ist engord.idx
pdflatex engord.dtx
makeindex -s gind.ist engord.idx
pdflatex engord.dtx
```

## 4 History

[2000/05/23 v1.0]

- First public release.

[2003/04/28 v1.1]

- Bug fix for 30, 40, 50, ..., 100, 130, ...
- `\ordletters` renamed to documented `\engordletters`.

[2006/02/20 v1.2]

- Support for plain-T<sub>E</sub>X.
- Switch `\ifengordraise` added.
- Package options `raise` and `normal` added.
- DTX framework.

## 5 Index

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