

1 The German language

The file `germanb.dtx`¹ defines all the language definition macros for the German language as well as for the Austrian dialect of this language².

For this language the character " is made active. In table 1 an overview is given of its purpose. One of the reasons for this is that in the German language some character combinations change when a word is broken between the combination. Also the vertical placement of the umlaut can be controlled this way. The quotes

"a	\a, also implemented for the other lowercase and uppercase vowels.
"s	to produce the German ß (like \ss{}).
"z	to produce the German ß (like \ss{}).
"ck	for ck to be hyphenated as k-k.
"ff	for ff to be hyphenated as ff-f, this is also implemented for l, m, n, p, r and t
"S	for SS to be \uppercase{s}.
"Z	for SZ to be \uppercase{z}.
"	disable ligature at this position.
"-	an explicit hyphen sign, allowing hyphenation in the rest of the word.
"	like "-", but producing no hyphen sign (for compound words with hyphen, e.g. x-"y).
"~	for a compound word mark without a breakpoint.
"=	for a compound word mark with a breakpoint, allowing hyphenation in the composing words.
"‘	for German left double quotes (looks like „).
"’	for German right double quotes.
"<	for French left double quotes (similar to <<).
">	for French right double quotes (similar to >>).

Table 1: The extra definitions made by `german.ldf`

in table 1 can also be typeset by using the commands in table 2.

When this file was read through the option `germanb` we make it behave as if `german` was specified.

```

1 \def\bbl@tempa{germanb}
2 \ifx\CurrentOption\bbl@tempa
3   \def\CurrentOption{german}
4   \ifx\l@german\@undefined
5     \nopatterns{German}
6     \adddialect\l@german0
7   \fi

```

¹The file described in this section has version number v2.6m and was last revised on 2008/06/01.

²This file is a re-implementation of Hubert Partl's `german.sty` version 2.5b, see [?].

<code>\glqq</code>	for German left double quotes (looks like „).
<code>\grqq</code>	for German right double quotes (looks like “).
<code>\glq</code>	for German left single quotes (looks like ,).
<code>\grq</code>	for German right single quotes (looks like ‘).
<code>\flqq</code>	for French left double quotes (similar to <<).
<code>\frqq</code>	for French right double quotes (similar to >>).
<code>\flq</code>	for (French) left single quotes (similar to <).
<code>\frq</code>	for (French) right single quotes (similar to >).
<code>\dq</code>	the original quotes character (").

Table 2: More commands which produce quotes, defined by `german.ldf`

```

8 \let\l@germanb\l@german
9 \AtBeginDocument{%
10   \let\captionsgermanb\captionsgerman
11   \let\dategermanb\dategerman
12   \let\extragermanb\extragerman
13   \let\noextragermanb\noextragerman
14 }
15 \fi

```

The macro `\LdfInit` takes care of preventing that this file is loaded more than once, checking the category code of the `@` sign, etc.

```

16 < *code >
17 \LdfInit\CurrentOption{captions\CurrentOption}

```

When this file is read as an option, i.e., by the `\usepackage` command, `german` will be an ‘unknown’ language, so we have to make it known. So we check for the existence of `\l@german` to see whether we have to do something here.

```

18 \ifx\l@german\@undefined
19   \nopatterns{German}
20   \adddialect\l@german0
21 \fi

```

For the Austrian version of these definitions we just add another language.

```

22 \adddialect\l@austrian\l@german

```

The next step consists of defining commands to switch to (and from) the German language.

`\captionsgerman` Either the macro `\captionsgerman` or the macro `\captionsaustrian` will define all strings used in the four standard document classes provided with L^AT_EX.

```

23 \@namedef{captions\CurrentOption}{%
24   \def\prefacename{Vorwort}%
25   \def\refname{Literatur}%
26   \def\abstractname{Zusammenfassung}%
27   \def\bibname{Literaturverzeichnis}%
28   \def\chaptername{Kapitel}%

```

```

29 \def\appendixname{Anhang}%
30 \def\contentsname{Inhaltsverzeichnis}% % oder nur: Inhalt
31 \def\listfigurename{Abbildungsverzeichnis}%
32 \def\listtablename{Tabellenverzeichnis}%
33 \def\indexname{Index}%
34 \def\figurename{Abbildung}%
35 \def\tablename{Tabelle}% % oder: Tafel
36 \def\partname{Teil}%
37 \def\enclname{Anlage(n)}% % oder: Beilage(n)
38 \def\ccname{Verteiler}% % oder: Kopien an
39 \def\headtoname{An}%
40 \def\pagename{Seite}%
41 \def\seename{siehe}%
42 \def\alsoname{siehe auch}%
43 \def\proofname{Beweis}%
44 \def\glossaryname{Glossar}%
45 }

```

`\dategerman` The macro `\dategerman` redefines the command `\today` to produce German dates.

```

46 \def\month@german{\ifcase\month\or
47   Januar\or Februar\or M"arz\or April\or Mai\or Juni\or
48   Juli\or August\or September\or Oktober\or November\or Dezember\fi}
49 \def\dategerman{\def\today{\number\day.\~\month@german
50   \space\number\year}}

```

`\dateaustrian` The macro `\dateaustrian` redefines the command `\today` to produce Austrian version of the German dates.

```

51 \def\dateaustrian{\def\today{\number\day.\~\ifnum1=\month
52   J"anner\else \month@german\fi \space\number\year}}

```

`\extrasgerman` Either the macro `\extrasgerman` or the macros `\extrasaustrian` will perform all the extra definitions needed for the German language. The macro `\noextrasgerman` is used to cancel the actions of `\extrasgerman`.

`\noextrasaustrian` For German (as well as for Dutch) the " character is made active. This is done once, later on its definition may vary.

```

53 \initiate@active@char{"}
54 \@namedef{extras\CurrentOption}{%
55   \languageshortands{german}}
56 \expandafter\addto\csname extras\CurrentOption\endcsname{%
57   \bbl@activate{"}}

```

Don't forget to turn the shorthands off again.

```

58 \addto\noextrasgerman{\bbl@deactivate{"}}

```

In order for T_EX to be able to hyphenate German words which contain ‘ß’ (in the OT1 position $\sim\text{Y}$) we have to give the character a nonzero `\lccode` (see Appendix H, the T_EXbook).

```

59 \expandafter\addto\csname extras\CurrentOption\endcsname{%
60   \babel@savevariable{\lccode25}%
61   \lccode25=25}

```

The umlaut accent macro `\` is changed to lower the umlaut dots. The redefinition is done with the help of `\umlautlow`.

```
62 \expandafter\addto\csname extras\CurrentOption\endcsname{%
63   \babel@save"\umlautlow}
64 \@namedef{noextras\CurrentOption}{\umlauthigh}
```

The german hyphenation patterns can be used with `\lefthyphenmin` and `\righthyphenmin` set to 2.

```
65 \providehyphenmins{\CurrentOption}{\tw@\tw@}
```

For German texts we need to make sure that `\frenchspacing` is turned on.

```
66 \expandafter\addto\csname extras\CurrentOption\endcsname{%
67   \bbl@frenchspacing}
68 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
69   \bbl@nonfrenchspacing}
```

The code above is necessary because we need an extra active character. This character is then used as indicated in table 1.

To be able to define the function of `"`, we first define a couple of ‘support’ macros.

`\dq` We save the original double quote character in `\dq` to keep it available, the math accent `\` can now be typed as `"`.

```
70 \begingroup \catcode'\ "12
71 \def\x{\endgroup
72   \def\@SS{\mathchar"7019 }
73   \def\dq{"}}
74 \x
```

Now we can define the doublequote macros: the umlauts,

```
75 \declare@shorthand{german}{\a}{\textormath{"{a}\allowhyphens}{\ddot a}}
76 \declare@shorthand{german}{\o}{\textormath{"{o}\allowhyphens}{\ddot o}}
77 \declare@shorthand{german}{\u}{\textormath{"{u}\allowhyphens}{\ddot u}}
78 \declare@shorthand{german}{\A}{\textormath{"{A}\allowhyphens}{\ddot A}}
79 \declare@shorthand{german}{\O}{\textormath{"{O}\allowhyphens}{\ddot O}}
80 \declare@shorthand{german}{\U}{\textormath{"{U}\allowhyphens}{\ddot U}}
```

tremas,

```
81 \declare@shorthand{german}{\e}{\textormath{"{e}{\ddot e}}
82 \declare@shorthand{german}{\E}{\textormath{"{E}{\ddot E}}
83 \declare@shorthand{german}{\i}{\textormath{"{i}{\ddot i}}%
84   {\ddot\imath}}
85 \declare@shorthand{german}{\I}{\textormath{"{I}{\ddot I}}
```

german es-zet (sharp s),

```
86 \declare@shorthand{german}{\s}{\textormath{\ss}{\@SS{}}}
87 \declare@shorthand{german}{\S}{\SS}
88 \declare@shorthand{german}{\z}{\textormath{\ss}{\@SS{}}}
89 \declare@shorthand{german}{\Z}{\SZ}
```

german and french quotes,

```
90 \declare@shorthand{german}{" '}{\glqq}
91 \declare@shorthand{german}{" '}{\grqq}
92 \declare@shorthand{german}{" <}{\flqq}
93 \declare@shorthand{german}{" >}{\frqq}
```

discretionary commands

```
94 \declare@shorthand{german}{"c}{\textormath{\bbl@disc ck}{c}}
95 \declare@shorthand{german}{"C}{\textormath{\bbl@disc CK}{C}}
96 \declare@shorthand{german}{"F}{\textormath{\bbl@disc F{FF}}{F}}
97 \declare@shorthand{german}{"l}{\textormath{\bbl@disc l{ll}}{l}}
98 \declare@shorthand{german}{"L}{\textormath{\bbl@disc L{LL}}{L}}
99 \declare@shorthand{german}{"m}{\textormath{\bbl@disc m{mm}}{m}}
100 \declare@shorthand{german}{"M}{\textormath{\bbl@disc M{MM}}{M}}
101 \declare@shorthand{german}{"n}{\textormath{\bbl@disc n{nn}}{n}}
102 \declare@shorthand{german}{"N}{\textormath{\bbl@disc N{NN}}{N}}
103 \declare@shorthand{german}{"p}{\textormath{\bbl@disc p{pp}}{p}}
104 \declare@shorthand{german}{"P}{\textormath{\bbl@disc P{PP}}{P}}
105 \declare@shorthand{german}{"r}{\textormath{\bbl@disc r{rr}}{r}}
106 \declare@shorthand{german}{"R}{\textormath{\bbl@disc R{RR}}{R}}
107 \declare@shorthand{german}{"t}{\textormath{\bbl@disc t{tt}}{t}}
108 \declare@shorthand{german}{"T}{\textormath{\bbl@disc T{TT}}{T}}
```

We need to treat "f a bit differently in order to preserve the ff-ligature.

```
109 \declare@shorthand{german}{"f}{\textormath{\bbl@discff}{f}}
110 \def\bbl@discff{\penalty\@M
111   \afterassignment\bbl@insertff \let\bbl@nextff= }
112 \def\bbl@insertff{%
113   \if f\bbl@nextff
114     \expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi
115     {\relax\discretionary{ff-}{f}{ff}\allowhyphens}{f\bbl@nextff}}
116 \let\bbl@nextff=f
```

and some additional commands:

```
117 \declare@shorthand{german}{"-}{\nobreak\-\bbl@allowhyphens}
118 \declare@shorthand{german}{"|}{%
119   \textormath{\penalty\@M\discretionary{-}{-}{\kern.03em}%
120     \allowhyphens}{}}
121 \declare@shorthand{german}{""}{\hskip\z@skip}
122 \declare@shorthand{german}{"~}{\textormath{\leavevmode\hbox{-}}{-}}
123 \declare@shorthand{german}{"=}{\penalty\@M-\hskip\z@skip}
```

\mdqon All that's left to do now is to define a couple of commands for reasons of compatibility with german.sty.

```
\ck 124 \def\mdqon{\shorthandon{}}
125 \def\mdqoff{\shorthandoff{}}
126 \def\ck{\allowhyphens\discretionary{k-}{k}{ck}\allowhyphens}
```

The macro \ldf@finish takes care of looking for a configuration file, setting the main language to be switched on at \begin{document} and resetting the category code of @ to its original value.

```
127 \ldf@finish\CurrentOption
128 \code>
```