code-page a style to handle different code-pages in the same document

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Abstract

This package provides some new commands to handle code page[1]. This text describes the interface offered by the package and some problems which occur when the implementation is done only in TEX.

1 Introduction

The version 3 of TeX provides some facilities to work with documents written in a language different than English. Mainly, by allowing the use of characters coded on eight bits (values from 1 to 255) and the possibility to use multiple hyphenation tables.
Although, this improvements are necessary, they are not sufficient. The standard LATEX style should be adapted to the different languages and new polices of characters containing glyphs[2] for the characters used in other language than English should be defined.
The style Babel and the new font DC have been developed to solve these problems. Well, one could think, "don't worry, be happy", documents will be typeset without problem. Unfortunately this is not exactly the case, but the problem is outside TEX: there isn't any unique code page! Moreover some systems allow the use of many different code pages. The DC font obeys more or less to the ISO LATIN SET 1 standard, but many other code pages exist. The solutions to this problem are multiples:

- The use of on external program to do the translation. If the program is well interfaced with TEX (like the TCP tables of EMTEX) this solution is very efficient and comfortable to use. But its main disadvantage is to be implementation specific, and the transfer of the document on an other TEX implementation is not easy.
- The use of virtual fonts to match the position of each character in a font to the local code page. This solution is fully integrated with TEX[3], but when a document is transferred, all the virtual fonts should be given with the document (or defined at the other place), and the problem of hyphenation (see 1.1) is not solved.
- The use of the standard convention to write accented character in TEX (i.e.`\'e` for é). This solution works well with DC fonts (due to a very clever redefinition of macros for positioning accent) and, naturally, is totally portable with any TEX (version 2 and 3). But the typing of accented characters is clumsy (even with a good editor) and the reading is boring.
- The use of the package codepage which is totally TEX (version 3 only) compatible. It can be used to typeset without any modifications a document with an other code page than those of the local computer (this may be useful for a demo version of a document) and the problem of hyphenation is partially (for hyphenation exceptions) solved. But the transfer of document implies the use of package and most of characters above 127 are made "active" (they are like macros). This could cause some interference with other packages.

[1] A code page is the convention for associating a character with a number used to represent it in a computer.
[2] Most foreign languages use characters with accent or diacritical marks. The traditional way to draw an accented character in TeX is the composition, — i.e. by using a macro to put an accent over a letter —. This method offer the possibility to put accent on any character, but prohibit hyphenation on word containing an accented letter.
[3] Some old driver don't work with virtual fonts.

As one could see, no solution is totally perfect, this is due to the lack of a standard for code page not to TEX[4].

1.1 The hyphenation problem

The algorithm used in the TEX program to hyphenate word is based on patterns read when the format[5] is build. During the build of the hyphenation table, all the characters are put to lowercase by using the `\lccode` value. When a string of characters in a text is to be hyphenated, it is put in lowercase by using the `\lccode` value and the compared with hyphenation table to find a good break point.
If the pattern file use the `\lccode` values defined for the Dc font (which is generally the case), a match will never occur with the character above 127 in a text with a different code page since the `\lccode` are adapted to that code page[6]. Despite this fact, the use of a pattern file containing characters above 127 is a good idea[7], because the results are surprisingly good (almost with French language). Moreover, the package `codepage` provides the command `\MakeHyphenationLetter` to adapt locally the `\lccode` value to a value usable by the `\hyphenation` command.

2 The user interface

The prime goal of the interface was to be "as simple as possible". Therefore it's composed by two macros and some constants:
The code pages are defined by constants:

`\FourThreeSeven` for the code page 437 of the PC; this code page is the standard code page used with English system.

`\EightFiveZero` for the code page 850. This code page is similar to code page 437 but contain more accented characters and less mathematical and special glyphs. It is used by international systems.

`\IsoOne` Iso Latin set 1 (the windows characters).

`\Mac` Mac Intosh characters.

The TEX encoding are defined by two other constants:

`\CM` for the standard original TEX encoding. This code is defined on only 128 position and does not contain characters with diacritical marks.

`\DC` for the new code defined at Cork. When this code is chosen, the Dc fonts should be available.

Now the two main macros:

`\codepage#1#2` This macro has two parameters which should be the constants defined above. The first parameter is the local code page, the second the encoding of the fonts used with TEX (`\DC`,`\CM`). This macro redefines all the macros for putting accent over a letter, the original macro is saved under a new name.

[4] If, one day, a such standard should be established, no doubts it will be defined on sixteen bits (number from 1 to 65535) to allow special characters for every applications (math symbols, foreign languages, etc...).

[5] A format is a precompiled version of commands used to composed a document.

[6] This is mandatory to have a correct behaviour with the command `\uppercase` and `\lowercase`, which transform a character in lower or upper case, according to the values: `\lccode` and `\uccode`.

[7] The modification of the original pattern file should not be done to preserve portability and (often) to respect the wish of maintainer who want to have a standard file.

New name	Original command
\Grave	\‘
\Circumflex	\^
\Tilda	\~
\OverBar	\=
\UnderBar	\b
\Join	\t
\HungarUmlaut	\H
\Acute	\’
\Diaresis	\"
\Breve	\u
\OverDot	\.
\UnderDot	\d
\Tcheche	\v
\Cedille	\c

After the call of `\codepage` all the characters above 127 are “active”.

`\MakeHyphenationLetter#1#2` This macro has two parameters, the first is the local code page and the second is a character above 127. This macro should always be called in a group (i.e. inside braces) to avoid undesirable change of `\lccode`. After the call, the letter can be use in the macro `\hyphenation` to construct correct pattern for hyphenation exceptions. Unfortunately this is not one way transformation, and two different characters above 127 could have the same `\lccode`. In this case a warning is used, but this could affect only exceptionally the use of `\hyphenation` command[8]. This macro is defined only when the Dc encoding is chosen.

`\CurrentEncoding` This macro contain the value of the encoding chosen. Its value is meaningful only after the call to the `\codepage` command.

Now we have some other macros defined by the package. Normally they should be quite rarely used:

`\TRtrue` to allow the translation of special characters (this is the default value !).

`\TRfalse` to suppress the translation of special character. This is useful when writing special characters into auxiliary (external) files like (`.idx, .toc`). Sometimes, the translation should be done only when these files are read again and not when they are written.

`\AllActive` put the `\catcode` for all characters above 127 to `\active`.

`\AllOther` put the `\catcode` for all characters above 127 to the value 12 (other).

`\og` draw the opening french guillomet (defined only when Cm encoding is used).

`\fg` draw the closing french guillomet (defined only when Cm encoding is used).

`\atcatcode` contain the value of the `\catcode` for the character @ or `\relax` outside the part of code where this `\catcode` is modified.

`\CurrentEncoding` contain the value of the TEX encoding choosen.

3 A short example (for LaTeX2e)

```
\documentclass{article}
   \usepackage{t1enc,codepage}
   {\MakeHyphenationLetter{\EightFiveZero}{è}
    \hyphenation{sys-tè-me sys-tè-mes}
   }
   \codepage{\EightFiveZero}{\DC}
```

[8] The tests done with the French language haven’t shown any problem, although some french letters are in conflict.

```
\begin{document}
   Unix est un joli système d'exploitation.
\end{document}
```

This example will work correctly if all the characters above 127 are usable. Some implementations (like EMTEX) map all characters above 127 on character 127 or use special translation tables (TCP tables for EMTEX). With EMTEX the options `/8` should be used when the format is generated.

4 The implementation

4.1 Introduction

The package is divided in three parts:

1. The drawing of characters[9].
2. The definition for the different code pages.
3. The interface.

Inside the package the characters above 127 are defined by commands whose names try to follow the standard defined by the POSTSCRIPT language (`\eacute` will draw the character é).
The definition of a code page is done by associating a character with the command which draw it. To be more precise the command `\eacute` does not draw the character directly, but it define an active character to draw the glyph "e acute". Thus a code page table is a call to a command which define each character from this code page to become an active character which draw the desired glyph.
In addition, the associated code (`\uccode` and `\lccode`) are adapted to the values used in the code page to have a correct behaviour with the commands `\uppercase` and `\lowercase`. The change of `\lccode` prohibit correct hyphenation[10], therefore the command `\MakeHyphenationLetter` is provided to circumvent this problem.

4.2 File codepage.sty

First of all, a general purpose counter used in all package is declared:

```
1 ⟨*codepage⟩
```

Now we save the category code for the character @

```
2 \chardef\atcatcode=\catcode`\@
3 \catcode`\@=11\relax
```

and we define some conditionals to be able to test:

- what format is used (because some commands do not exist in TEX)
- if the translation should be executed on every special character. This is obviously almost ever the case (why else using this package ?!) but in some cases this is not a good solution. When the special characters are written in an auxiliary files, it could be better to translate them when the text is read again, specially if these characters should be transform by commands such `\lowercase` or `\uppercase`.
- if it's the first time that the command `\codepage` is called, because the definition for the command drawing of accents should be saved just the first time (to avoid recursion problem).

```
4 \newif\if@FirstCodePageCall
5 \@FirstCodePageCalltrue
6 \newif\ifTeX
7 \newif\ifTR        % True if we do the translation of character
8 \TRtrue
```

[9] Not all the characters in all code page could be represented in TEX.
[10] Generally, the hyphenation patterns are defined with the DC characters and it's not a good idea to modify this file to adapt it to a particular code page.

Here is the test to know if the format is plain TEX or LATEX. This code is stolen from [2].

```
\expandafter\ifx\csname @currsize\endcsname\relax\TeXtrue\else\TeXfalse\fi
\ifTeX
   \message{codepage.sty used in TeX context}%
\else
   \typeout{codepage.sty used in LaTeX context}%
\fi
```

`\@BadHyphenCarMsg` This macro is defined here because it's used in all code page tables. It issue a warning when a special character is used to hyphenate a word, but it is not really a letter. A symbol drawn using mathematical mode of TEX could not be used to hyphenate word.

```
\def\@BadHyphenCarMsg#1{%
\ifTeX
    \message{Warning: the character \string #1 is not a character
             to form a word}%
    \message{Hyphenation can't be done with it}%
\else
    \typeout{Warning: the character \string #1 is not a character
             to form a word}%
    \typeout{Hyphenation can't be done with it}%
\fi
}%@BadHyphenCarMsg
```

`\@ConflictHyphenCarMsg` Due to the manner to treat the hyphenation (see paragraph 4.4), some conflicts could arise between two characters for hyphenation. The two arguments of the macro are the two characters in conflict.

```
\def\@ConflictHyphenCarMsg#1#2{%
\ifTeX
    \message{Warning the character #1 could be in conflict}%
    \message{with character #2 for hyphenation algorithm !}%
\else
    \typeout{Warning the character #1 could be in conflict}%
    \typeout{with character #2 for hyphenation algorithm !}%
\fi
}%\@ConflictHyphenCarMsg
```

Now we could declare the interface of the package, first the definition of constants

```
\chardef\CM=0%                The target font is CM encoding
\chardef\DC=1%                The target font is DC encoding
\chardef\FourThreeSeven=0%    Code page 437
\chardef\EightFiveZero=1%     Code page 850
\chardef\IsoOne=2%            Iso latin set 1
\chardef\Mac=3%               Apple Mac Intosh characters
```

`\codepage` This is the main macro which take two parameters:

1. the source code page of the document;
2. the encoding scheme chosen for the output (`T1` or `OT1`).

After the call of the macro, all the characters above 127 are made "active". Some characters draw their shape, the other issue a warning indicating that they could not be drawn with TEX commands.
The first thing to do is the save of the current encoding in a global variable and the save of the original macros for putting accents over letter. This should be done inside the macro to be independent of the order of style's declarations and it should be done just once to avoid the recursion problem.

```
\def\codepage#1#2{%
\chardef\CurrentEncoding=#2%
\if@FirstCodePageCall
  \let\Grave=\`%
  \let\Circumflex=\^%
  \let\Tilda=\~%
  \let\OverBar=\=%
```

```
  \let\UnderBar=\b%
  \let\Join=\t%
  \let\HungarUmlaut=\H%
  \let\Acute=\'%
  \let\Diaresis=\"%
  \let\Breve=\u%
  \let\OverDot=\.%
  \let\UnderDot=\d%
  \let\Tcheche=\v%
  \let\Cedille=\c%
  \@FirstCodePageCallfalse
\fi
```

All the characters upper 127 are made active and the table for the code page of document is set.

```
\AllActive
\ifcase#1%
   \input code437 %
\or
   \input code850 %
\or
   \input codeiso1 %
\or
   \input codemac %
\fi
```

The last thing to do is to save with an other name the standard macros for drawing accent which are modified by "tabbing" environment of LaTeX and the suppression of white space generated. Thus the same macro's name could be used everywhere to put accent on character.

```
\let\@Grave=\`%
\let\@Aigu=\'%
\let\@OverBar=\=%
\ignorespaces
}%\codepage
```

`\AllActive`

```
\def\AllActive{%
\catcode`\^^80=\active \catcode`\^^81=\active \catcode`\^^82=\active
\catcode`\^^83=\active \catcode`\^^84=\active \catcode`\^^85=\active
\catcode`\^^86=\active \catcode`\^^87=\active \catcode`\^^88=\active
\catcode`\^^89=\active \catcode`\^^8a=\active \catcode`\^^8b=\active
\catcode`\^^8c=\active \catcode`\^^8d=\active \catcode`\^^8e=\active
\catcode`\^^8f=\active \catcode`\^^90=\active \catcode`\^^91=\active
\catcode`\^^92=\active \catcode`\^^93=\active \catcode`\^^94=\active
\catcode`\^^95=\active \catcode`\^^96=\active \catcode`\^^97=\active
\catcode`\^^98=\active \catcode`\^^99=\active \catcode`\^^9a=\active
\catcode`\^^9b=\active \catcode`\^^9c=\active \catcode`\^^9d=\active
\catcode`\^^9e=\active \catcode`\^^9f=\active \catcode`\^^a0=\active
\catcode`\^^a1=\active \catcode`\^^a2=\active \catcode`\^^a3=\active
\catcode`\^^a4=\active \catcode`\^^a5=\active \catcode`\^^a6=\active
\catcode`\^^a7=\active \catcode`\^^a8=\active \catcode`\^^a9=\active
\catcode`\^^aa=\active \catcode`\^^ab=\active \catcode`\^^ac=\active
\catcode`\^^ad=\active \catcode`\^^ae=\active \catcode`\^^af=\active
\catcode`\^^b0=\active \catcode`\^^b1=\active \catcode`\^^b2=\active
\catcode`\^^b3=\active \catcode`\^^b4=\active \catcode`\^^b5=\active
\catcode`\^^b6=\active \catcode`\^^b7=\active \catcode`\^^b8=\active
\catcode`\^^b9=\active \catcode`\^^ba=\active \catcode`\^^bb=\active
\catcode`\^^bc=\active \catcode`\^^bd=\active \catcode`\^^be=\active
\catcode`\^^bf=\active \catcode`\^^c0=\active \catcode`\^^c1=\active
\catcode`\^^c2=\active \catcode`\^^c3=\active \catcode`\^^c4=\active
\catcode`\^^c5=\active \catcode`\^^c6=\active \catcode`\^^c7=\active
\catcode`\^^c8=\active \catcode`\^^c9=\active \catcode`\^^ca=\active
\catcode`\^^cb=\active \catcode`\^^cc=\active \catcode`\^^cd=\active
\catcode`\^^ce=\active \catcode`\^^cf=\active \catcode`\^^d0=\active
```

```
\catcode`\^^d1=\active \catcode`\^^d2=\active \catcode`\^^d3=\active
\catcode`\^^d4=\active \catcode`\^^d5=\active \catcode`\^^d6=\active
\catcode`\^^d7=\active \catcode`\^^d8=\active \catcode`\^^d9=\active
\catcode`\^^da=\active \catcode`\^^db=\active \catcode`\^^dc=\active
\catcode`\^^dd=\active \catcode`\^^de=\active \catcode`\^^df=\active
\catcode`\^^e0=\active \catcode`\^^e1=\active \catcode`\^^e2=\active
\catcode`\^^e3=\active \catcode`\^^e4=\active \catcode`\^^e5=\active
\catcode`\^^e6=\active \catcode`\^^e7=\active \catcode`\^^e8=\active
\catcode`\^^e9=\active \catcode`\^^ea=\active \catcode`\^^eb=\active
\catcode`\^^ec=\active \catcode`\^^ed=\active \catcode`\^^ee=\active
\catcode`\^^ef=\active \catcode`\^^f0=\active \catcode`\^^f1=\active
\catcode`\^^f2=\active \catcode`\^^f3=\active \catcode`\^^f4=\active
\catcode`\^^f5=\active \catcode`\^^f6=\active \catcode`\^^f7=\active
\catcode`\^^f8=\active \catcode`\^^f9=\active \catcode`\^^fa=\active
\catcode`\^^fb=\active \catcode`\^^fc=\active \catcode`\^^fd=\active
\catcode`\^^fe=\active \catcode`\^^ff=\active
}% \AllActive
```

`\AllOther`

```
\def\AllOther{%
```

This definition is used to save space (two digits take twice as space than and macro) and to clarify the meaning of catcode.

```
\chardef\other=12\relax
\catcode`\^^80=\other \catcode`\^^81=\other \catcode`\^^82=\other
\catcode`\^^83=\other \catcode`\^^84=\other \catcode`\^^85=\other
\catcode`\^^86=\other \catcode`\^^87=\other \catcode`\^^88=\other
\catcode`\^^89=\other \catcode`\^^8a=\other \catcode`\^^8b=\other
\catcode`\^^8c=\other \catcode`\^^8d=\other \catcode`\^^8e=\other
\catcode`\^^8f=\other \catcode`\^^90=\other \catcode`\^^91=\other
\catcode`\^^92=\other \catcode`\^^93=\other \catcode`\^^94=\other
\catcode`\^^95=\other \catcode`\^^96=\other \catcode`\^^97=\other
\catcode`\^^98=\other \catcode`\^^99=\other \catcode`\^^9a=\other
\catcode`\^^9b=\other \catcode`\^^9c=\other \catcode`\^^9d=\other
\catcode`\^^9e=\other \catcode`\^^9f=\other \catcode`\^^a0=\other
\catcode`\^^a1=\other \catcode`\^^a2=\other \catcode`\^^a3=\other
\catcode`\^^a4=\other \catcode`\^^a5=\other \catcode`\^^a6=\other
\catcode`\^^a7=\other \catcode`\^^a8=\other \catcode`\^^a9=\other
\catcode`\^^aa=\other \catcode`\^^ab=\other \catcode`\^^ac=\other
\catcode`\^^ad=\other \catcode`\^^ae=\other \catcode`\^^af=\other
\catcode`\^^b0=\other \catcode`\^^b1=\other \catcode`\^^b2=\other
\catcode`\^^b3=\other \catcode`\^^b4=\other \catcode`\^^b5=\other
\catcode`\^^b6=\other \catcode`\^^b7=\other \catcode`\^^b8=\other
\catcode`\^^b9=\other \catcode`\^^ba=\other \catcode`\^^bb=\other
\catcode`\^^bc=\other \catcode`\^^bd=\other \catcode`\^^be=\other
\catcode`\^^bf=\other \catcode`\^^c0=\other \catcode`\^^c1=\other
\catcode`\^^c2=\other \catcode`\^^c3=\other \catcode`\^^c4=\other
\catcode`\^^c5=\other \catcode`\^^c6=\other \catcode`\^^c7=\other
\catcode`\^^c8=\other \catcode`\^^c9=\other \catcode`\^^ca=\other
\catcode`\^^cb=\other \catcode`\^^cc=\other \catcode`\^^cd=\other
\catcode`\^^ce=\other \catcode`\^^cf=\other \catcode`\^^d0=\other
\catcode`\^^d1=\other \catcode`\^^d2=\other \catcode`\^^d3=\other
\catcode`\^^d4=\other \catcode`\^^d5=\other \catcode`\^^d6=\other
\catcode`\^^d7=\other \catcode`\^^d8=\other \catcode`\^^d9=\other
\catcode`\^^da=\other \catcode`\^^db=\other \catcode`\^^dc=\other
\catcode`\^^dd=\other \catcode`\^^de=\other \catcode`\^^df=\other
\catcode`\^^e0=\other \catcode`\^^e1=\other \catcode`\^^e2=\other
\catcode`\^^e3=\other \catcode`\^^e4=\other \catcode`\^^e5=\other
\catcode`\^^e6=\other \catcode`\^^e7=\other \catcode`\^^e8=\other
\catcode`\^^e9=\other \catcode`\^^ea=\other \catcode`\^^eb=\other
\catcode`\^^ec=\other \catcode`\^^ed=\other \catcode`\^^ee=\other
\catcode`\^^ef=\other \catcode`\^^f0=\other \catcode`\^^f1=\other
\catcode`\^^f2=\other \catcode`\^^f3=\other \catcode`\^^f4=\other
```

```
\catcode`\^^f5=\other \catcode`\^^f6=\other \catcode`\^^f7=\other
\catcode`\^^f8=\other \catcode`\^^f9=\other \catcode`\^^fa=\other
\catcode`\^^fb=\other \catcode`\^^fc=\other \catcode`\^^fd=\other
\catcode`\^^fe=\other \catcode`\^^ff=\other
}% \AllOther
```

\MakeHyphenationLetter This macro allow a special letter to be use in a \hyphenation command to declare hyphenation exceptions. To do the hyphenation TEX will transform all the characters to lowercase (by using the \lowerccase primitive) and then compare the string of characters with the table of hyphenation; if a match is found the hyphenation could be done.
The \lccode and the \uccode are always defined in term of code page of document (for instance the code page 850 of PC), but the process of hyphenation comes at a very late stage when all the characters are already translated in the Dc encoding. Thus a match is never possible. The macro \MakeHyphenationLetter will then change locally the value of \lccode to anticipate what it will be when the character is translated. Unfortunately this transformation is not one way, and different characters could give the same result, but this case is quite rare and a warning is issued.
The two parameters for the macro are the code page of the document and the letter to be used in the \hyphenation command.

```
\def\MakeHyphenationLetter#1#2{%
   \ifcase#1%
      \@MakeHyphenationFourThreeSeven{#2}%
   \or
      \@MakeHyphenationEightFiveZero{#2}%
   \or
      \@MakeHyphenationLatinOne{#2}%
   \or
      \@MakeHyphenationMac{#2}%
   \fi
}% MakeHyphenationLetter
```

\@CarSmaller Macros that work only with LATEX, and draw character smaller (two steps less than current writing size ie. normalsize is set to footnotesize). With TEX this macros does nothing.

```
\def\@CarSmaller{\ifTeX
                 %Do nothing
                 \else
                 %We are in LaTeX
                   \ifx\@currsize\normalsize\relax
                        \footnotesize
                   \else
                     \ifx\@currsize\small\relax
                        \scriptsize
                     \else
                        \ifx\@currsize\footnotesize\relax
                            \tiny
                        \else
                           \ifx\@currsize\scriptsize\relax
                               \tiny % we cannot have less
                           \fi
                        \fi
                     \fi
                   \fi
                   \ifx\@currsize\large\relax
                      \small
                   \else
                    \ifx\@currsize\Large\relax
                         \normalsize
                      \else
                         \ifx\@currsize\LARGE\relax
                             \large
                         \else
                            \ifx\@currsize\huge\relax
                               \Large
```

```
                                \else
                                   \ifx\@currsize\Huge\relax
                                      \LARGE
                                   \fi
                                \fi
                             \fi
                          \fi
                       \fi
                     \fi
                    }% \@CarSmaller
```

`\@Sup`

```
\def\@Sup#1{%
    \ifmmode
      ^{\hbox{\@CarSmaller #1}}%
    \else
      $^{\hbox{\@CarSmaller #1}}$%
    \fi
}%\@Sup
```

`\@Fraction` Create a fraction (for one half, one quarter etc.)

```
\def\@Fraction#1#2{%
     \ifmmode
       \ifTeX
         #1\over#2%
       \else
         \frac{#1}{#2}%
       \fi
     \else
       \ifTeX
         $#1\over#2$%
       \else
         $\frac{#1}{#2}$%
       \fi
     \fi
}%\@Fraction
```

`\@MathSymbol` MathSymbol defines its first parameter to print the mathematical symbol given as second parameter (given without \)

```
\def\@MathSymbol#1#2{%
       %Do the global definitions
       \gdef#1{\ifTR
                 \ifmmode
                 % Already in math ==> no $
                   \csname#2\endcsname
                 \else
                   $\csname#2\endcsname$%
                 \fi
               \else
                %No translation to do
                  \string#1%
               \fi
              }%
    }%\@MathSymbol
```

`\@InMath` @InMath write its argument in mathematical mode (given without \)

```
\def\@InMath#1{%
                 \ifmmode
                 % Already in math ==> no $
                   \csname#1\endcsname
                 \else
                   $\csname#1\endcsname$%
                 \fi
     }%\@InMath
```

\@UC

```
\def\@UC#1#2#3{%
   \global\uccode`#1=#2\global\lccode`#1=#3%
}%
```

\@DefaultValue Define the default macro for an active character which could not be printed.

```
\def\@DefaultValue#1{%
\ifTeX
   \message{The character No #1 doesn't exist in target
           font (ignored) !}%
\else
   \typeout{The character No #1 doesn't exist in target
           font (ignored) !}%
\fi
}%
```

The last thing to do is to restore the value of @ character

```
\catcode`\@=\atcatcode \let\atcatcode\relax
⟨/codepage⟩
```

4.3 The drawing of characters (Files shapecm.tex, shapedc.tex)

One file for every different possible (in TEX) coding scheme is used. Each file should define macros to draw the characters and the accents in TEX. All files should contain the same macros.
Two types of macros are provided:

- The macros prefixed with the @ character which are used to facilitate the drawing of some characters. These macros should be global and shared by all the active characters (thus they are declared in the file codepage.tex).
- The macros to define active characters. The name of these macro follows the Postscript conventions for character's name (whenever possible) and does not contain an @ character.

The auxiliary macros which are used are:

\@Sup to put its argument in superscript

\@Fraction to create a fraction with the first parameter over the second in smaller size than the current writing size.

\@CarSmaller which change the font to have a font two steps smaller than the current font (do nothing in TEX).

\@MathSymbol draw a predefined TEX math symbol.

\@UC just to have one macro for doing the same action many times.

```
⟨*shapecm⟩
  \chardef\atcatcode=\catcode`\@
  \catcode`\@=11\relax
```

\@StartNewWord This macro give the possibility to hyphenate word containing special characters between the syllabs containing the accented character. The trick used is to isolate a special character by surrounding it with "end of word" mark (i.e. a white space of 0pt where the hyphenation is prohibited). These techniques are used since many year in TEX communauty.

```
  \gdef\@StartNewWord{\penalty\@M\hskip\z@skip}%
```

\@TreatDotLessCar Change a dot character to remove the dot when used with an accented character.

```
  \gdef\@TreatDotLessCar#1#2{%
                \@StartNewWord
                \ifx#1i%
                    \csname#2\endcsname \i
                  \else
                    \ifx#1j%
```

```
                    \csname#2\endcsname \j
                  \else
                    \csname#2\endcsname #1%
                  \fi
                \fi
                \@StartNewWord}%
  \gdef\`#1{{\@TreatDotLessCar{#1}{Grave}}}%
  \gdef\^#1{{\@TreatDotLessCar{#1}{Circumflex}}}%
  \gdef\~#1{{\@TreatDotLessCar{#1}{Tilda}}}%
  \gdef\=#1{{\@TreatDotLessCar{#1}{OverBar}}}%
  \gdef\b#1{{\underbar #1\@StartNewWord}}%
  \gdef\t#1{{\@TreatDotLessCar{#1}{Join}}}%
  \gdef\H#1{{\@TreatDotLessCar{#1}{HungarUmlaut}}}%
  \gdef\'#1{{\@TreatDotLessCar{#1}{Acute}}}%
  \gdef\"#1{{\@TreatDotLessCar{#1}{Diaresis}}}%
  \gdef\u#1{{\@TreatDotLessCar{#1}{Breve}}}%
  \gdef\.#1{{\@TreatDotLessCar{#1}{OverDot}}}%
  \gdef\d#1{{\UnderDot #1\@StartNewWord}}%
  \gdef\v#1{{\@TreatDotLessCar{#1}{Tcheche}}}%
  \gdef\c#1{{\Cedille #1\@StartNewWord}}%
```

Now we should define the definition for the french quotation marks which aren't defined in the CM font. The code is taken from [3].

```
  \gdef\og{\leavevmode\raise.3ex\hbox{$\scriptscriptstyle\langle\!\langle\,$}}%
  \gdef\fg{\leavevmode\raise.3ex\hbox{$\scriptscriptstyle\,\rangle\!\rangle$}}%
```

This is a rudimentary code to obtain pounds sign in TEX mode.

```
  \ifTeX\gdef\pounds{{\it\$}}\fi
```

The macros for defining a active character to draw its glyph has always three parameters:

1. The character in source font (should be active before the call)
2. The uppercase code
3. The lowercase code

```
\def\dieresis#1#2#3{%
```

This macro will define an active character to draw a "diaresis" character. The first thing to do is to set the `\lccode` and `\uccode` to values meaningful for the code page of the document.

```
      \@UC{#1}{#2}{#3}%
```

Then, depending on the TEX encoding, the translation is done if the test `\ifTR` is true, else the character is left verbatim (with `\catcode=12`). When `\ifTR` is true, the character is written `\char "xx` for the DC encoding and it is composed (i.e. `\'e`) for the CM encoding.

```
      \gdef#1{\ifTR\char"7F{}\else\string#1\fi}%
}%
\def\acute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"13{}\else\string#1\fi}%
}%
\def\cedilla#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"18{}\else\string#1\fi}%
}%
\def\Agrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{A}\else\@Grave{A}\fi\else\string#1\fi}%
}%
\def\Aacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{A}\else\@Aigu{A}\fi\else\string#1\fi}%
}%
\def\Acircumflex#1#2#3{%
```

```
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{A}\else\^{A}\fi\else\string#1\fi}%
}%
\def\Atilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\tilde{A}\else\~{A}\fi\else\string#1\fi}%
}%
\def\Adieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{A}\else\"{A}\fi\else\string#1\fi}%
}%
\def\Aring#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\AA{}\else\string#1\fi}%
}%
\def\fiLigature#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{fi}\else\string#1\fi}%
}%
\def\flLigature#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{fl}\else\string#1\fi}%
}%
\def\AE#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\AE{}\else\string#1\fi}%
}%
\def\Ccedilla#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\c {C}\else\string#1\fi}%
}%
\def\Egrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{E}\else\@Grave{E}\fi\else\string#1\fi}%
}%
\def\Eacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{E}\else\@Aigu{E}\fi\else\string#1\fi}%
}%
\def\Ecircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{E}\else\^{E}\fi\else\string#1\fi}%
}%
\def\Edieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{E}\else\"{E}\fi\else\string#1\fi}%
}%
\def\Igrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{I}\else\@Grave{I}\fi\else\string#1\fi}%
}%
\def\Iacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{I}\else\@Aigu{I}\fi\else\string#1\fi}%
}%
\def\Icircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{I}\else\^{I}\fi\else\string#1\fi}%
}%
\def\Idieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{I}\else\"{I}\fi\else\string#1\fi}%
```

```
}%
\def\DBar#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % nothing to do we use the default value
}%
\def\Ntilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\tilde{N}\else\~{N}\fi\else\string#1\fi}%
}%
\def\Ograve#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{O}\else\@Grave{O}\fi\else\string#1\fi}%
}%
\def\Oacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{O}\else\@Aigu{O}\fi\else\string#1\fi}%
}%
\def\Ocircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{O}\else\^{O}\fi\else\string#1\fi}%
}%
\def\Otilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\tilde{O}\else\~{O}\fi\else\string#1\fi}%
}%
\def\Odieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{O}\else\"{O}\fi\else\string#1\fi}%
}%
\def\Oslash#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\O{}\else\string#1\fi}%
}%
\def\Ugrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{U}\else\@Grave{U}\fi\else\string#1\fi}%
}%
\def\Uacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{U}\else\@Aigu{U}\fi\else\string#1\fi}%
}%
\def\Ucircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{U}\else\^{U}\fi\else\string#1\fi}%
}%
\def\Udieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{U}\else\"{U}\fi\else\string#1\fi}%
}%
\def\Yacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{Y}\else\@Aigu{Y}\fi\else\string#1\fi}%
}%
\def\Thorn#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
}%
\def\germandbls#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{SS}\else\string#1\fi}%
}%
\def\agrave#1#2#3{%
```

```
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{a}\else\@Grave{a}\fi\else\string#1\fi}%
}%
\def\aacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{a}\else\@Aigu{a}\fi\else\string#1\fi}%
}%
\def\acircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{a}\else\^{a}\fi\else\string#1\fi}%
}%
\def\atilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\tilde{a}\else\~{a}\fi\else\string#1\fi}%
}%
\def\adieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{a}\else\"{a}\fi\else\string#1\fi}%
}%
\def\aring#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\aa{}\else\string#1\fi}%
}%
\def\ae#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ae{}\else\string#1\fi}%
}%
\def\ccedilla#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\c {c}\else\string#1\fi}%
}%
\def\egrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{e}\else\@Grave{e}\fi\else\string#1\fi}%
}%
\def\eacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{e}\else\@Aigu{e}\fi\else\string#1\fi}%
}%
\def\ecircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{e}\else\^{e}\fi\else\string#1\fi}%
}%
\def\edieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{e}\else\"{e}\fi\else\string#1\fi}%
}%
\def\igrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{i}\else\@Grave{i}\fi\else\string#1\fi}%
}%
\def\iacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{i}\else\@Aigu{i}\fi\else\string#1\fi}%
}%
\def\icircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{i}\else\^{i}\fi\else\string#1\fi}%
}%
\def\idieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{i}\else\"{i}\fi\else\string#1\fi}%
```

```
}%
\def\dBar#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
}%
\def\ntilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\tilde{n}\else\~{n}\fi\else\string#1\fi}%
}%
\def\ograve#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{o}\else\@Grave{o}\fi\else\string#1\fi}%
}%
\def\oacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{o}\else\@Aigu{o}\fi\else\string#1\fi}%
}%
\def\ocircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{o}\else\^{o}\fi\else\string#1\fi}%
}%
\def\otilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\tilde{o}\else\~{o}\fi\else\string#1\fi}%
}%
\def\odieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{o}\else\"{o}\fi\else\string#1\fi}%
}%
\def\OE#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\OE{}\else\string#1\fi}%
}%
\def\oe#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\oe{}\else\string#1\fi}%
}%
\def\oslash#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\o{}\else\string#1\fi}%
}%
\def\ugrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\grave{u}\else\@Grave{u}\fi\else\string#1\fi}%
}%
\def\uacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{u}\else\@Aigu{u}\fi\else\string#1\fi}%
}%
\def\ucircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\hat{u}\else\^{u}\fi\else\string#1\fi}%
}%
\def\udieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{u}\else\"{u}\fi\else\string#1\fi}%
}%
\def\yacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\acute{y}\else\@Aigu{y}\fi\else\string#1\fi}%
}%
\def\thorn#1#2#3{%
```

```
      \@UC{#1}{#2}{#3}%
         % no definition in CM
}%
\def\ydieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{y}\else\"{y}\fi\else\string#1\fi}%
}%
\def\Ydieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\ifmmode\ddot{Y}\else\"{Y}\fi\else\string#1\fi}%
}%
%
\def\alpha#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{alpha}%
}%
\def\approx#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{approx}%
}%
\def\beta#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{beta}%
}%
\def\bullet#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{bullet}%
}%
\def\cap#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{cap}%
}%
\def\cent#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
        % no definition in DC
}%
\def\guillemeotright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\fg{}\else\string#1\fi}%
}%
\def\copyright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\copyright{}\else\string#1\fi}%
}%
\def\currency#1#2#3{% character hex A4 in Iso latin set 1
      \@UC{#1}{#2}{#3}%
         % no definition in CM
}%
\def\degree#1#2#3{%
      \@UC{#1}{#2}{#3}%
}%
\def\dag#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{dag}%
}%
\def\ddag#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{ddag}%
}%
\def\delta#1#2#3{%
      \@UC{#1}{#2}{#3}%
```

```
640       \@MathSymbol{#1}{delta}%
641 }%
642 \def\div#1#2#3{%
643       \@UC{#1}{#2}{#3}%
644       \@MathSymbol{#1}{div}%
645 }%
646 \def\diamond#1#2#3{%
647       \@UC{#1}{#2}{#3}%
648       \@MathSymbol{#1}{Diamond}%
649 }%
650 \def\emptysetSign#1#2#3{%
651       \@UC{#1}{#2}{#3}%
652       \@MathSymbol{#1}{emptyset}% is nicer than epsilon
653 }%
654 \def\section#1#2#3{%
655       \@UC{#1}{#2}{#3}%
656       \gdef#1{\ifTR{\S}\else\string#1\fi}%
657 }%
658 \def\epsilon#1#2#3{%
659       \@UC{#1}{#2}{#3}%
660       \@MathSymbol{#1}{varepsilon}% is nicer than epsilon
661 }%
662 \def\equiv#1#2#3{%
663       \@UC{#1}{#2}{#3}%
664       \@MathSymbol{#1}{equiv}%
665 }%
666 \def\ellipsis#1#2#3{%
667       \@UC{#1}{#2}{#3}%
668       \gdef#1{\ifTR{...}\else\string#1\fi}%
669 }%
670 \def\exclamdown#1#2#3{%
671       \@UC{#1}{#2}{#3}%
672       \gdef#1{\ifTR{!`}\else\string#1\fi}%
673 }%
674 \def\ordfeminine#1#2#3{%
675       \@UC{#1}{#2}{#3}%
676       \gdef#1{\ifTR\@Sup{\b{a}}\else\string#1\fi}%
677 }%
678 \def\geq#1#2#3{%
679       \@UC{#1}{#2}{#3}%
680       \@MathSymbol{#1}{geq}%
681 }%
682 \def\Gamma#1#2#3{%
683       \@UC{#1}{#2}{#3}%
684       \@MathSymbol{#1}{Gamma}%
685 }%
686 \def\infty#1#2#3{%
687       \@UC{#1}{#2}{#3}%
688       \@MathSymbol{#1}{infty}%
689 }%
690 \def\leq#1#2#3{%
691       \@UC{#1}{#2}{#3}%
692       \@MathSymbol{#1}{leq}%
693 }%
694 \def\emdash#1#2#3{%
695       \@UC{#1}{#2}{#3}%
696       \gdef#1{\ifTR{---}\else\string#1\fi}%
697 }%
698 \def\ordmasculine#1#2#3{%
699       \@UC{#1}{#2}{#3}%
700       \gdef#1{\ifTR\@Sup{\b{o}}\else\string#1\fi}%
701 }%
```

```
\def\mu#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{mu}%
}%
\def\neg#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{neg}%
}%
\def\neq#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{neq}%
}%
\def\unbreakablespace#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR~\else\string#1\fi}%
}%
\def\Omega#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Omega}%
}%
\def\OneHalf#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Fraction{1}{2}}\else\string#1\fi}%
}%
\def\OneQuarter#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Fraction{1}{4}}\else\string#1\fi}%
}%
\def\guilletmotleft#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\og{}\else\string#1\fi}%
}%
\def\Pi#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Pi}%
}%
\def\pi#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{pi}%
}%
\def\pm#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{pm}%
}%
\def\ParagraphSign#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\P}\else\string#1\fi}%
}%
\def\partial#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{partial}%
}%
\def\Phi#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Phi}%
}%
\def\pounds#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\pounds{}\else\string#1\fi}%
}%
\def\powerone#1#2#3{%
      \@UC{#1}{#2}{#3}%
```

```
      \gdef#1{\ifTR{\@Sup{1}}\else\string#1\fi}%
}%
\def\powerthree#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Sup{3}}\else\string#1\fi}%
}%
\def\powertwo#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Sup{2}}\else\string#1\fi}%
}%
\def\questiondown#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{?`}\else\string#1\fi}%
}%
\def\register#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
        % no definition in DC
}%
\def\Sigma#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Sigma}%
}%
\def\sigma#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{sigma}%
}%
\def\quoteright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{'}\else\string#1\fi}%
}%
\def\quoteleft#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{`}\else\string#1\fi}%
}%
\def\splitbar#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
}%
\def\tau#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{tau}%
}%
\def\ThetaSign#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Theta}%
}%
\def\threequarter#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Fraction{3}{4}}\else\string#1\fi}%
}%
\def\times#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{times}%
}%
\def\trademark#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\@Sup{TM}\else\string#1\fi}%
}%
\def\quotedblright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{''}\else\string#1\fi}%
```

```
}%
\def\quotedblleft#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{``}\else\string#1\fi}%
}%
\def\yen#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
        % no definition in DC
}%
\def\perthousand#1#2#3{%
      \@UC{#1}{#2}{#3}%
         % no definition in CM
        % no definition in DC
}%
\def\florin#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\it f}\else\string#1\fi}%
}%
\catcode`\@=\atcatcode \let\atcatcode\relax
⟨/shapecm⟩
```

These macros redefines all the effect of the macros to put accents on characters in order to produce directly the character in the font Dc. The code is stolen from the file DCLFONT.STY from the Nfss distribution. Two reasons have dictated this choice:

- When Nfss is not used, the composition of character+accent will give directly the accented character;
- When Nfss is used, it's better to have the translation done in command `\char 'xxx` instead of `^^xx`. This avoid bad translation when an auxiliary file is reread.

The first thing to do is to save the catcode of @ character.

```
⟨*shapedc⟩
\chardef\atcatcode=\catcode`\@
\catcode`\@=11\relax
\global\chardef\aa="0E5%
\global\chardef\ae="0E6%
\global\chardef\l="0AA%
\global\chardef\oe="0F7%
\global\chardef\o="0F8%
\global\chardef\ss="0FF%
\global\chardef\AA="0C5%
\global\chardef\AE="0C6%
\global\chardef\L="8A%
\global\chardef\OE="0D7%
\global\chardef\O="0D8%
\global\chardef\SS="0DF%
\global\chardef\i="19%
\global\chardef\j="1A%
\global\chardef\pounds="0BF%
\gdef\hbar{{\mathchar'11\mkern-9muh}}%
\def\@accent@def#1#2#3{\expandafter\gdef
       \csname @#1@\string#2@#1@\endcsname{#3}}%
\gdef\@accent@use#1#2#3{%
  \expandafter\ifx \csname @#1@\string#3@#1@\endcsname \relax
      {\accent#2 #3}%
    \else  \csname @#1@\string#3@#1@\endcsname\fi}%
\gdef\`{\@accent@use{grave}{0}}%
\let\@accii=\`%
\@accent@def{grave}{a}{\char"E0{}}%
\@accent@def{grave}{e}{\char"E8{}}%
\@accent@def{grave}{\i}{\char"EC{}}%
```

```
\@accent@def{grave}{i}{\char"EC{}}%
\@accent@def{grave}{o}{\char"F2{}}%
\@accent@def{grave}{u}{\char"F9{}}%
\@accent@def{grave}{A}{\char"C0{}}%
\@accent@def{grave}{E}{\char"C8{}}%
\@accent@def{grave}{I}{\char"CC{}}%
\@accent@def{grave}{O}{\char"D2{}}%
\@accent@def{grave}{U}{\char"D9{}}%
\gdef\'{\@accent@use{acute}{1}}%
\let\@acci=\'%
\@accent@def{acute}{n}{\char"AB{}}%
\@accent@def{acute}{l}{\char"A8{}}%
\@accent@def{acute}{r}{\char"AF{}}%
\@accent@def{acute}{s}{\char"B1{}}%
\@accent@def{acute}{z}{\char"B9{}}%
\@accent@def{acute}{a}{\char"E1{}}%
\@accent@def{acute}{e}{\char"E9{}}%
\@accent@def{acute}{\i}{\char"ED{}}%
\@accent@def{acute}{i}{\char"ED{}}%
\@accent@def{acute}{o}{\char"F3{}}%
\@accent@def{acute}{u}{\char"FA{}}%
\@accent@def{acute}{y}{\char"FD{}}%
\@accent@def{acute}{N}{\char"8B{}}%
\@accent@def{acute}{L}{\char"88{}}%
\@accent@def{acute}{R}{\char"8F{}}%
\@accent@def{acute}{S}{\char"91{}}%
\@accent@def{acute}{Z}{\char"99{}}%
\@accent@def{acute}{A}{\char"C1{}}%
\@accent@def{acute}{E}{\char"C9{}}%
\@accent@def{acute}{I}{\char"CD{}}%
\@accent@def{acute}{O}{\char"D3{}}%
\@accent@def{acute}{U}{\char"DA{}}%
\@accent@def{acute}{Y}{\char"DD{}}%
\@accent@def{acute}{c}{\char"A2{}}%
\@accent@def{acute}{C}{\char"82{}}%
\gdef\v{\@accent@use{check}{7}}%
\@accent@def{check}{c}{\char"A3{}}%
\@accent@def{check}{e}{\char"A5{}}%
\@accent@def{check}{n}{\char"AC{}}%
\@accent@def{check}{r}{\char"B0{}}%
\@accent@def{check}{s}{\char"B2{}}%
\@accent@def{check}{z}{\char"BA{}}%
\@accent@def{check}{C}{\char"83{}}%
\@accent@def{check}{D}{\char"84{}}%
\@accent@def{check}{E}{\char"85{}}%
\@accent@def{check}{N}{\char"8C{}}%
\@accent@def{check}{R}{\char"90{}}%
\@accent@def{check}{S}{\char"92{}}%
\@accent@def{check}{T}{\char"94{}}%
\@accent@def{check}{Z}{\char"9A{}}%
\gdef\u{\@accent@use{breve}{8}}%
\@accent@def{breve}{a}{\char"A0{}}%
\@accent@def{breve}{g}{\char"A7{}}%
\@accent@def{breve}{A}{\char"80{}}%
\@accent@def{breve}{G}{\char"87{}}%
\gdef\=#1{{\accent9 #1}}%
\let\@acciii=\=%
\gdef\^{\@accent@use{circflx}{2}}%
\@accent@def{circflx}{a}{\char"E2{}}%
\@accent@def{circflx}{e}{\char"EA{}}%
\@accent@def{circflx}{\i}{\char"EE{}}%
\@accent@def{circflx}{i}{\char"EE{}}%
```

```
\@accent@def{circflx}{o}{\char"F4{}}%
\@accent@def{circflx}{u}{\char"FB{}}%
\@accent@def{circflx}{A}{\char"C2{}}%
\@accent@def{circflx}{E}{\char"CA{}}%
\@accent@def{circflx}{I}{\char"CE{}}%
\@accent@def{circflx}{O}{\char"D4{}}%
\@accent@def{circflx}{U}{\char"DB{}}%
\gdef\.{\@accent@use{dot}{10}}%
\@accent@def{dot}{z}{\char"BB{}}%
\@accent@def{dot}{Z}{\char"9B{}}%
\@accent@def{dot}{I}{\char"9D{}}%
\@accent@def{dot}{i}{i}%
\gdef\H{\@accent@use{Hung}{5}}%
\@accent@def{Hung}{o}{\char"AE{}}%
\@accent@def{Hung}{u}{\char"B6{}}%
\@accent@def{Hung}{O}{\char"8E{}}%
\@accent@def{Hung}{U}{\char"96{}}%
\gdef\~{\@accent@use{tilde}{3}}%
\@accent@def{tilde}{a}{\char"E3{}}%
\@accent@def{tilde}{n}{\char"F1{}}%
\@accent@def{tilde}{o}{\char"F5{}}%
\@accent@def{tilde}{A}{\char"C3{}}%
\@accent@def{tilde}{N}{\char"D1{}}%
\@accent@def{tilde}{O}{\char"D5{}}%
\gdef\"{\@accent@use{Umlaut}{4}}%
\@accent@def{Umlaut}{a}{\char"E4{}}%
\@accent@def{Umlaut}{e}{\char"EB{}}%
\@accent@def{Umlaut}{\i}{\char"EF{}}%
\@accent@def{Umlaut}{i}{\char"EF{}}%
\@accent@def{Umlaut}{o}{\char"F6{}}%
\@accent@def{Umlaut}{u}{\char"FC{}}%
\@accent@def{Umlaut}{A}{\char"C4{}}%
\@accent@def{Umlaut}{E}{\char"CB{}}%
\@accent@def{Umlaut}{I}{\char"CF{}}%
\@accent@def{Umlaut}{O}{\char"D6{}}%
\@accent@def{Umlaut}{U}{\char"DC{}}%
\gdef\pb#1{\oalign{#1\crcr\hidewidth
    \vbox to.2ex{\hbox{\char9}\vss}\hidewidth}}%
\gdef\pc#1{\expandafter\ifx
    \csname @cedilla@\string#1@cedilla@\endcsname \relax
    \c@dilla#1\else \csname @cedilla@\string#1@cedilla@\endcsname\fi}%
\@accent@def{cedilla}{s}{\char"B3{}}%
\@accent@def{cedilla}{t}{\char"B5{}}%
\@accent@def{cedilla}{c}{\char"E7{}}%
\@accent@def{cedilla}{S}{\char"93{}}%
\@accent@def{cedilla}{T}{\char"95{}}%
\@accent@def{cedilla}{C}{\char"C7{}}%
\gdef\c@dilla#1{\setbox\z@\hbox{#1}\ifdim\ht\z@=1ex\accent11 #1%
  \else{\ooalign{\hidewidth\char11\hidewidth\crcr\unhbox\z@}}\fi}%
%
\def\dieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char'004{}\else\string#1\fi}%
}%
\def\acute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"01{}\else\string#1\fi}%
}%
\def\cedilla#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"0D{}\else\string#1\fi}%
}%
```

```
\def\Agrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C0{}\else\string#1\fi}%
}%
\def\Aacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C1{}\else\string#1\fi}%
}%
\def\Acircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C2{}\else\string#1\fi}%
}%
\def\Atilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C3{}\else\string#1\fi}%
}%
\def\Adieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C4{}\else\string#1\fi}%
}%
\def\Aring#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C5{}\else\string#1\fi}%
}%
\def\fiLigature#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{fi}\else\string#1\fi}%
}%
\def\flLigature#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{fl}\else\string#1\fi}%
}%
\def\AE#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C6{}\else\string#1\fi}%
}%
\def\Ccedilla#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C7{}\else\string#1\fi}%
}%
\def\Egrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C8{}\else\string#1\fi}%
}%
\def\Eacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"C9{}\else\string#1\fi}%
}%
\def\Ecircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"CA{}\else\string#1\fi}%
}%
\def\Edieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"CB{}\else\string#1\fi}%
}%
\def\Igrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"CC{}\else\string#1\fi}%
}%
\def\Iacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
```

```
      \gdef#1{\ifTR\char"CD{}\else\string#1\fi}%
}%
\def\Icircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"CE{}\else\string#1\fi}%
}%
\def\Idieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"CF{}\else\string#1\fi}%
}%
\def\DBar#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D0{}\else\string#1\fi}%
}%
\def\Ntilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D1{}\else\string#1\fi}%
}%
\def\Ograve#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D2{}\else\string#1\fi}%
}%
\def\Oacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D3{}\else\string#1\fi}%
}%
\def\Ocircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D4{}\else\string#1\fi}%
}%
\def\Otilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D5{}\else\string#1\fi}%
}%
\def\Odieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D6{}\else\string#1\fi}%
}%
\def\Oslash#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D8{}\else\string#1\fi}%
}%
\def\Ugrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"D9{}\else\string#1\fi}%
}%
\def\Uacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"DA{}\else\string#1\fi}%
}%
\def\Ucircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"DB{}\else\string#1\fi}%
}%
\def\Udieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"DC{}\else\string#1\fi}%
}%
\def\Yacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"DD{}\else\string#1\fi}%
}%
```

```
\def\Thorn#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"DE{}\else\string#1\fi}%
}%
\def\germandbls#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"DF{}\else\string#1\fi}%
}%
\def\agrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E0{}\else\string#1\fi}%
}%
\def\aacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E1{}\else\string#1\fi}%
}%
\def\acircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E2{}\else\string#1\fi}%
}%
\def\atilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E3{}\else\string#1\fi}%
}%
\def\adieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E4{}\else\string#1\fi}%
}%
\def\aring#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E5{}\else\string#1\fi}%
}%
\def\ae#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E6{}\else\string#1\fi}%
}%
\def\ccedilla#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E7{}\else\string#1\fi}%
}%
\def\egrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E8{}\else\string#1\fi}%
}%
\def\eacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"E9{}\else\string#1\fi}%
}%
\def\ecircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"EA{}\else\string#1\fi}%
}%
\def\edieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"EB{}\else\string#1\fi}%
}%
\def\igrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"EC{}\else\string#1\fi}%
}%
\def\iacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
```

```
      \gdef#1{\ifTR\char"ED{}\else\string#1\fi}%
}%
\def\icircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"EE{}\else\string#1\fi}%
}%
\def\idieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"EF{}\else\string#1\fi}%
}%
\def\dBar#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F0{}\else\string#1\fi}%
}%
\def\ntilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F1{}\else\string#1\fi}%
}%
\def\ograve#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F2{}\else\string#1\fi}%
}%
\def\oacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F3{}\else\string#1\fi}%
}%
\def\ocircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F4{}\else\string#1\fi}%
}%
\def\otilde#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F5{}\else\string#1\fi}%
}%
\def\odieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F6{}\else\string#1\fi}%
}%
\def\OE#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\OE{}\else\string#1\fi}%
}%
\def\oe#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\oe{}\else\string#1\fi}%
}%
\def\oslash#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F8{}\else\string#1\fi}%
}%
\def\ugrave#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"F9{}\else\string#1\fi}%
}%
\def\uacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"FA{}\else\string#1\fi}%
}%
\def\ucircumflex#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"FB{}\else\string#1\fi}%
}%
```

```
\def\udieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"FC{}\else\string#1\fi}%
}%
\def\yacute#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"FD{}\else\string#1\fi}%
}%
\def\thorn#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"FE{}\else\string#1\fi}%
}%
\def\ydieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"B8{}\else\string#1\fi}%
}%
\def\Ydieresis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"98{}\else\string#1\fi}%
}%
%
\def\alpha#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{alpha}%
}%
\def\approx#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{approx}%
}%
\def\beta#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{beta}%
}%
\def\bullet#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{bullet}%
}%
\def\cap#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{cap}%
}%
\def\cent#1#2#3{%
      \@UC{#1}{#2}{#3}%
        % no definition in DC
}%
\def\guillemeotright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      % a small space is inserted before the french guillemot
      % and the pre-existing space is removed
      \gdef#1{\ifTR\unskip\@InMath{,}\char'024{}\else\string#1\fi}%
}%
\def\copyright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\copyright{}\else\string#1\fi}%
}%
\def\currency#1#2#3{% character hex A4 in Iso latin set 1
      \@UC{#1}{#2}{#3}%
        % no definition in DC
}%
\def\degree#1#2#3{%
      \@UC{#1}{#2}{#3}%
}%
```

```
\def\dag#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{dag}%
}%
\def\ddag#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{ddag}%
}%
\def\delta#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{delta}%
}%
\def\div#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{div}%
}%
\def\diamond#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Diamond}%
}%
\def\emptysetSign#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{emptyset}%
}%
\def\section#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\S}\else\string#1\fi}%
}%
\def\epsilon#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{varepsilon}%
}%
\def\equiv#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{equiv}%
}%
\def\ellipsis#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{...}\else\string#1\fi}%
}%
\def\exclamdown#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"BD{}\else\string#1\fi}%
}%
\def\ordfeminine#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\@Sup{\b{a}}\else\string#1\fi}%
}%
\def\geq#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{geq}%
}%
\def\Gamma#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Gamma}%
}%
\def\infty#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{infty}%
}%
\def\leq#1#2#3{%
      \@UC{#1}{#2}{#3}%
```

```
      \@MathSymbol{#1}{leq}%
}%
\def\emdash#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{---}\else\string#1\fi}%
}%
\def\ordmasculine#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\@Sup{\b{o}}\else\string#1\fi}%
}%
\def\mu#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{mu}%
}%
\def\neg#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{neg}%
}%
\def\neq#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{neq}%
}%
\def\unbreakablespace#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR~\else\string#1\fi}%
}%
\def\Omega#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Omega}%
}%
\def\OneHalf#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Fraction{1}{2}}\else\string#1\fi}%
}%
\def\OneQuarter#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Fraction{1}{4}}\else\string#1\fi}%
}%
\def\guilletmotleft#1#2#3{%
      \@UC{#1}{#2}{#3}%
      % a small space is added after the opening guillemot
      % and the pre-existing space is removed
      \gdef#1{\ifTR\char"13\unskip\@InMath{,}\else\string#1\fi}%
}%
\def\Pi#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Pi}%
}%
\def\pi#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{pi}%
}%
\def\pm#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{pm}%
}%
\def\ParagraphSign#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\P}\else\string#1\fi}%
}%
\def\partial#1#2#3{%
      \@UC{#1}{#2}{#3}%
```

```
      \@MathSymbol{#1}{partial}%
}%
\def\Phi#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Phi}%
}%
\def\pounds#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"BF{}\else\string#1\fi}%
}%
\def\powerone#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Sup{1}}\else\string#1\fi}%
}%
\def\powerthree#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Sup{3}}\else\string#1\fi}%
}%
\def\powertwo#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Sup{2}}\else\string#1\fi}%
}%
\def\questiondown#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\char"BE{}\else\string#1\fi}%
}%
\def\register#1#2#3{%
      \@UC{#1}{#2}{#3}%
        % no definition in DC
}%
\def\Sigma#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Sigma}%
}%
\def\sigma#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{sigma}%
}%
\def\quoteright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{'}\else\string#1\fi}%
}%
\def\quoteleft#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{`}\else\string#1\fi}%
}%
\def\splitbar#1#2#3{%
      \@UC{#1}{#2}{#3}%
        % no definition in DC
}%
\def\tau#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{tau}%
}%
\def\ThetaSign#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{Theta}%
}%
\def\threequarter#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\@Fraction{3}{4}}\else\string#1\fi}%
}%
```

```
\def\times#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \@MathSymbol{#1}{times}%
}%
\def\trademark#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR\@Sup{TM}\else\string#1\fi}%
}%
\def\quotedblright#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{''}\else\string#1\fi}%
}%
\def\quotedblleft#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{``}\else\string#1\fi}%
}%
\def\yen#1#2#3{%
      \@UC{#1}{#2}{#3}%
        % no definition in DC
}%
\def\perthousand#1#2#3{%
      \@UC{#1}{#2}{#3}%
        % no definition in DC
}%
\def\florin#1#2#3{%
      \@UC{#1}{#2}{#3}%
      \gdef#1{\ifTR{\it f}\else\string#1\fi}%
}%
\catcode`\@=\atcatcode \let\atcatcode\relax
%
```
⟨/shapedc⟩

4.4 Table for the code page 850 (file: code850.tex)

This file contains code to set up the table to convert the code page 850 to the DC or Cm encoding scheme (depending on the value of global variable `\CurrentEncoding`). This file should be moved into TEX's memory with an `\input` command and all the characters above 127 should be active before the call to the `\input` command.
Some normal unaccented character should be made active, just for the case where the `\uppercase` command is used with lowercase accented character which don't have uppercase accented equivalent (the normal unaccented character is used).
Since the `\uppercase` or `\lowercase` command doesn't change the catcode, the resulting character will have the catcode `\active` (since all the characters above 127 are active). Thus a macro should exist !

⟨*codepage850⟩
```
\chardef\atcatcode=\catcode`\@
\catcode`\@=11\relax
   {%
      \catcode`\Y=\active
      \gdef Y{\string Y}%
   }%
```

All the characters are assigned to a default value (each character issue a message telling it could not be drawn with TEX commands) and a group is started (in effect when the file code850.tex is read) to limit the scope of macros created by the inputting of files shapecm or shapedc. These macros are used just for setting the tables and never useful after that.

```
\begingroup
\input initcar %
\ifcase\CurrentEncoding
   \input shapecm %
\or
```

```
    \input shapedc %
\fi
\Ccedilla{^^80}{"80}{"87}%
\udieresis{^^81}{"9A}{"81}%
\eacute{^^82}{"90}{"82}%
\acircumflex{^^83}{"B6}{"83}%
\adieresis{^^84}{"8E}{"84}%
\agrave{^^85}{"B7}{"85}%
\aring{^^86}{"8F}{"86}%
\ccedilla{^^87}{"80}{"87}%
\ecircumflex{^^88}{"D2}{"88}%
\edieresis{^^89}{"D3}{"89}%
\egrave{^^8a}{"D4}{"8A}%
\idieresis{^^8b}{"D8}{"8B}%
\icircumflex{^^8c}{"D7}{"8C}%
\igrave{^^8d}{"DE}{"8D}%
\Adieresis{^^8e}{"8E}{"84}%
\Aring{^^8f}{"8F}{"86}%
\Eacute{^^90}{"90}{"82}%
\ae{^^91}{"92}{"91}%
\AE{^^92}{"92}{"91}%
\ocircumflex{^^93}{"E2}{"93}%
\odieresis{^^94}{"99}{"94}%
\ograve{^^95}{"E3}{"95}%
\ucircumflex{^^96}{"EA}{"96}%
\ugrave{^^97}{"EB}{"97}%
\ydieresis{^^98}{"59}{"98}%
\Odieresis{^^99}{"99}{"94}%
\Udieresis{^^9a}{"9A}{"81}%
\oslash{^^9b}{"9D}{"9B}%
\pounds{^^9c}{"9C}{"9C}%
\Oslash{^^9d}{"9D}{"9B}%
\times{^^9e}{"9E}{"9E}%
\florin{^^9f}{"9F}{"9F}%
\aacute{^^a0}{"B5}{"A0}%
\iacute{^^a1}{"D6}{"A1}%
\oacute{^^a2}{"E0}{"A2}%
\uacute{^^a3}{"E9}{"A3}%
\ntilde{^^a4}{"A5}{"A4}%
\Ntilde{^^a5}{"A5}{"A4}%
\ordfeminine{^^a6}{"A6}{"A6}%
\ordmasculine{^^a7}{"A7}{"A7}%
\questiondown{^^a8}{"A8}{"A8}%
\register{^^a9}{"A9}{"A9}%
\neg{^^aa}{"AA}{"AA}%
\OneHalf{^^ab}{"AB}{"AB}%
\OneQuarter{^^ac}{"AC}{"AC}%
\exclamdown{^^ad}{"AD}{"AD}%
\guilletmotleft{^^ae}{"AE}{"AE}%
\guillemeotright{^^af}{"AF}{"AF}%
\Aacute{^^b5}{"B5}{"A0}%
\Acircumflex{^^b6}{"B6}{"83}%
\Agrave{^^b7}{"B7}{"85}%
\copyright{^^b8}{"B8}{"B8}%
\cent{^^bd}{"BD}{"BD}%
\yen{^^be}{"BE}{"BE}%
\atilde{^^c6}{"C7}{"C6}%
\Atilde{^^c7}{"C7}{"C6}%
\currency{^^cf}{"CF}{"CF}%
\dBar{^^d0}{"D1}{"D0}%
\DBar{^^d1}{"D1}{"D0}%
\Ecircumflex{^^d2}{"D2}{"88}%
```

```
\Edieresis{^^d3}{"D3}{"89}%
\Egrave{^^d4}{"D4}{"8A}%
\powerone{^^d5}{"D5}{"D5}%
\Iacute{^^d6}{"D6}{"A1}%
\Icircumflex{^^d7}{"D7}{"8C}%
\Idieresis{^^d8}{"D8}{"8B}%
\splitbar{^^dd}{"DD}{"DD}%
\Igrave{^^de}{"DE}{"8D}%
\Oacute{^^e0}{"E0}{"A2}%
\beta{^^e1}{"E1}{"E1}%
\Ocircumflex{^^e2}{"E2}{"93}%
\Ograve{^^e3}{"E3}{"95}%
\otilde{^^e4}{"E5}{"E4}%
\Otilde{^^e5}{"E5}{"E4}%
\mu{^^e6}{"E6}{"E6}%
\thorn{^^e7}{"E8}{"E7}%
\Thorn{^^e8}{"E8}{"E7}%
\Uacute{^^e9}{"E9}{"A3}%
\Ucircumflex{^^ea}{"EA}{"96}%
\Ugrave{^^eb}{"EB}{"97}%
\yacute{^^ec}{"ED}{"EC}%
\Yacute{^^ed}{"ED}{"EC}%
\pm{^^f1}{"F1}{"F1}%
\threequarter{^^f3}{"F3}{"F3}%
\ParagraphSign{^^f4}{"F4}{"F4}%
\section{^^f5}{"F5}{"F5}%
\div{^^f6}{"F6}{"F6}%
\cedilla{^^f7}{"F7}{"F7}%
\degree{^^f8}{"F8}{"F8}%
\dieresis{^^f9}{"F9}{"F9}%
\bullet{^^fa}{"FA}{"FA}%
\powerone{^^fb}{"FB}{"FB}%
\powerthree{^^fc}{"FC}{"FC}%
\powertwo{^^fd}{"FD}{"FD}%
\endgroup
```

`\@MakeHyphenation850` `\@MakeHyphenationEightFiveZero` prepare a letter given as parameter to do a letter for hyphenation exception.

The algorithm to build the exception hyphenation pattern put all the characters to lower case before setting up the hyphenation tables. When a string should be broken it is transformed in lowercase and then compared with the hyphenation pattern.

Since these two transformations are performed on two different characters (the first, before a character from a code page was translated, the second after), a match could never occur.

The aim of this macro is to adapt the value of the `\lccode` of a character to be used in the `\hyphenation` to permit a match when this character will be translated in something else.

Examples:

"e grave" (character hexa 8a) in code page 850 will be translated in Dc encoding scheme to character hexa (E8). In code page 850, the character hexa E8 will have a lowercase character hexa E7 (in code page 850). When the translated character "e grave" will be put in lowercase, his value will be hexa E7. From that we can deduce that to use `\hyphenation` with "e grave" (character hexa 8a in code page 850), "e grave" should have `\lccode="E7`.

"n tilde" (character hexa A4 in code page 850) will be translated to character hexa F1 in Dc encoding. Character hexa F1 in code page 850 is "plus-minus" sign which has lowercase hexa F1 thus the `\lccode` for "n tilde" for use with the `\hyphenation` command should be hexa F1.

This macro is meaningless with the Cm encoding !

```
\ifnum\CurrentEncoding=\DC\relax
\def\@MakeHyphenationEightFiveZero#1{%
  \catcode`#1=12% make character given in parameter other which is
                % a legal catcode for \hyphenation
  \ifnum`#1="80
     %C cedilla translated in DC encoding to "D7 (which is A tilde)
```

```
    %with a tilde ("d6) as lowercase
    \lccode`#1="D6%
  \else\ifnum`#1="81
    %u dieresis --> "FC
    \lccode`#1="FC%
  \else\ifnum`#1="82
    %e acute --> "E9 (U acute) --> u acute
    \lccode`#1="A3%
  \else\ifnum`#1="83
    %a circumflex --> "E2 O circumflex --> o circumflex
    \lccode`#1="93%
  \else\ifnum`#1="84
    %a dieresis --> "E4 o tilde
    \lccode`#1="E4%
    \@ConflictHyphenCarMsg{a dieresis ("84)}{a ring ("86)}
  \else\ifnum`#1="85
    %a grave --> "E O acute --> "A2 (o acute in code page 850)
    \lccode`#1="A2%
  \else\ifnum`#1="86
    %a ring --> "E5 O tilde --> "E4
    \lccode`#1="E4%
    \@ConflictHyphenCarMsg{a ring ("86)}{a dieresis ("84)}
  \else\ifnum`#1="87
    %c cedilla --> "E7  --> "E7
    \lccode`#1="E7%
    \@ConflictHyphenCarMsg{c cedilla ("87)}{e grave ("8A)}
 \else\ifnum`#1="88
    %e circumflex --> "EA (U circumflex ---> "96
    \lccode`#1="96%
  \else\ifnum`#1="89
    %e dieresis --> "EB U grave --> "97
    \lccode`#1="97%
  \else\ifnum`#1="8A
    %e grave --> "E8 Thorn --> "E7
    \lccode`#1="E7%
    \@ConflictHyphenCarMsg{e grave ("8A)}{c cedilla ("87)}
  \else\ifnum`#1="8B
    %i dieresis --> "EF (acute accent)
    \lccode`#1="EF%
  \else\ifnum`#1="8C
    %i circumflex --> "EE (BAR Accent)
    \lccode`#1="EE%
  \else\ifnum`#1="8D
    %i grave --> "EC (y acute)
    \lccode`#1="EC%
    \@ConflictHyphenCarMsg{i grave ("8D)}{i acute ("A1)}
  \else\ifnum`#1="8E
    %A dieresis --> "C4 (semi graphical character)
    \lccode`#1="C4%
  \else\ifnum`#1="8F
    %A ring --> "C5 (semi graphical character)
    \lccode`#1="C5%
  \else\ifnum`#1="90
    %E acute --> "C9 (semi graphical character)
    \lccode`#1="C9%
  \else\ifnum`#1="91
    %ae ligature --> "E6 (mu sign)
    \lccode`#1="E6%
  \else\ifnum`#1="92
    %AE ligature --> "C6 (a tilde)
    \lccode`#1="C6%
  \else\ifnum`#1="93
```

```
    %o circumflex --> "F4 (Paragraph Sign)
    \lccode`#1="F4%
\else\ifnum`#1="94
    %o dieresis --> "F6 (divide sign)
    \lccode`#1="F6%
\else\ifnum`#1="95
    %O grave --> "F2 (equal sign)
    \lccode`#1="F2%
\else\ifnum`#1="96
    %u circumflex --> "FB (Power one sign)
    \lccode`#1="FB%
\else\ifnum`#1="97
    %u grave --> "F9 (dieresis accent)
    \lccode`#1="F9%
\else\ifnum`#1="98
    %y dieresis --> "B8 (Copyright sign)
    \lccode`#1="B8%
\else\ifnum`#1="99
    %O dieresis --> "D6 (I acute) --> i acute
    \lccode`#1="A1%
\else\ifnum`#1="9A
    %U dieresis --> "DC (semi graphical sign)
    \lccode`#1="DC%
\else\ifnum`#1="9B
    %o slash --> "F8 (Degree sign)
    \lccode`#1="F8%
\else\ifnum`#1="9D
    %O slash --> "D8 (I dieresis) --> i dieresis
    \lccode`#1="8B%
\else\ifnum`#1="A0
    %a acute --> "E1 (Beta sign)
    \lccode`#1="E1%
\else\ifnum`#1="A1
    %i acute --> "ED (Y acute) --> y acute
    \lccode`#1="EC%
    \@ConflictHyphenCarMsg{i acute ("A1)}{i grave ("8D)}
\else\ifnum`#1="A2
    %o acute --> "F3 (three quarter sign)
    \lccode`#1="F3%
\else\ifnum`#1="A3
    %u acute --> "FA (Bullet sign)
    \lccode`#1="FA%
\else\ifnum`#1="A4
    %n tilde --> "F1 (Plus minus sign)
    \lccode`#1="F1%
\else\ifnum`#1="A5
    %N tilde --> "D1 (D bar) --> d bar
    \lccode`#1="D0%
    \@ConflictHyphenCarMsg{N tilde ("A5)}{D bar ("D1)}
\else\ifnum`#1="B5
    %A acute --> "C1 (semi graphical sign)
    \lccode`#1="C1%
\else\ifnum`#1="B6
    %A circumflex --> "C2 (semi graphical sign)
    \lccode`#1="C2%
\else\ifnum`#1="B7
    %A grave --> "C0 (Semi graphical sign)
    \lccode`#1="C0%
\else\ifnum`#1="D0
    %d bar --> "F0 (minus sign)
    \lccode`#1="F0%
\else\ifnum`#1="D1
```

```
    %D bar --> "D0 (d bar)
    \lccode`#1="D0%
    \@ConflictHyphenCarMsg{D bar ("D1)}{N tilde ("A5}
  \else\ifnum`#1="D2
    %E circumflex --> "CA (semi-graphical sign)
    \lccode`#1="CA%
  \else\ifnum`#1="D3
    %E dieresis --> "CB (semi graphical sign)
    \lccode`#1="CB%
  \else\ifnum`#1="D4
    %E grave --> "C8 (semi graphical sign)
    \lccode`#1="C8%
  \else\ifnum`#1="D6
    %I acute --> "CD (semi graphical sign)
    \lccode`#1="CD%
  \else\ifnum`#1="D7
    %I circumflex --> "CE (semi-graphical sign)
    \lccode`#1="CE%
  \else\ifnum`#1="D8
    %I dieresis --> "CF (currency sign)
    \lccode`#1="CF%
  \else\ifnum`#1="E0
    %O acute --> "D3 (E dieresis) --> e dieresis
    \lccode`#1="89%
  \else\ifnum`#1="E2
    %O circumflex --> "D4 (E grave) --> e grave
    \lccode`#1="8A%
  \else\ifnum`#1="E3
    %O grave --> "D2 (E circumflex) --> e circumflex
    \lccode`#1="88%
  \else\ifnum`#1="E4
    %o tilde --> "F5 (End of flow sign)
    \lccode`#1="F5%
  \else\ifnum`#1="E5
    %O tilde --> "D5 (Power One sign)
    \lccode`#1="D5%
  \else\ifnum`#1="E7
    %thorn --> "FE (semi graphical sign)
    \lccode`#1="FE%
  \else\ifnum`#1="E8
    %P like letter --> "DE (I acute) --> i acute
    \lccode`#1="8D%
  \else\ifnum`#1="E9
    %U acute --> "DA (semi graphical sign)
    \lccode`#1="DA%
  \else\ifnum`#1="EA
    %U circumflex --> "DB (semi graphical sign)
    \lccode`#1="DB%
  \else\ifnum`#1="EB
    %U grave --> "D9 (semi graphical sign)
    \lccode`#1="D9%
  \else\ifnum`#1="EC
    %y acute --> "FD (Power two sign)
    \lccode`#1="FD%
  \else\ifnum`#1="ED
    %Y acute --> "DD (Slit vertical bar sign)
    \lccode`#1="DD%
  \else
    %we don't have a letter (a character to form word)
    \@BadHyphenCarMsg{#1}
    \catcode`#1=15% make this character invalid
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
```

```
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi\fi\fi\fi\fi\fi\fi
% We must have same count of \fi than \ifnum (58)
}%\@MakeHyphenationEightFiveZero
\fi % \ifx\CurrentEncoding...
\catcode`\@=\atcatcode \let\atcatcode\relax
⟨/codepage850⟩
```

4.5 Table for the code page 437 (file: code437.tex)

\@FourThreeSeven

```
⟨*codepage437⟩
\chardef\atcatcode=\catcode`\@
\catcode`\@=11\relax
\begingroup
   \catcode`\A=\active
   \catcode`\E=\active
   \catcode`\I=\active
   \catcode`\O=\active
   \catcode`\U=\active
   \catcode`\Y=\active
   \gdef A{\string A}%
   \gdef E{\string E}%
   \gdef I{\string I}%
   \gdef O{\string O}%
   \gdef U{\string U}%
   \gdef Y{\string Y}%
\endgroup
\input initcar %
\begingroup
\ifcase\CurrentEncoding
   \input shapecm %
\or
   \input shapedc %
\fi
\Ccedilla{^^80}{"80}{"87}%
\Adieresis{^^8e}{"8E}{"84}%
\Aring{^^8f}{"8F}{"86}%
\Eacute{^^90}{"90}{"82}%
\AE{^^92}{"92}{"91}%
\Odieresis{^^99}{"99}{"94}%
\Udieresis{^^9a}{"9A}{"81}%
\Ntilde{^^a5}{"A5}{"A4}%
\udieresis{^^81}{"9A}{"81}%
\eacute{^^82}{"90}{"82}%
\acircumflex{^^83}{"41}{"83}%
\adieresis{^^84}{"8E}{"84}%
\agrave{^^85}{"41}{"85}%
\aring{^^86}{"8F}{"86}%
\ccedilla{^^87}{"80}{"87}%
\ecircumflex{^^88}{"45}{"88}%
\edieresis{^^89}{"45}{"89}%
\egrave{^^8a}{"45}{"8A}%
\idieresis{^^8b}{"49}{"8B}%
\icircumflex{^^8c}{"49}{"8C}%
\igrave{^^8d}{"49}{"8D}%
\ae{^^91}{"92}{"91}%
\ocircumflex{^^93}{"4F}{"93}%
```

```
\odieresis{^^94}{"99}{"94}%
\ograve{^^95}{"4F}{"95}%
\ucircumflex{^^96}{"55}{"96}%
\ugrave{^^97}{"55}{"97}%
\ydieresis{^^98}{"59}{"98}%
\pounds{^^9c}{"9C}{"9C}%
\florin{^^9f}{"9F}{"9F}%
\aacute{^^a0}{"41}{"A0}%
\iacute{^^a1}{"49}{"A1}%
\oacute{^^a2}{"4F}{"A2}%
\uacute{^^a3}{"55}{"A3}%
\ntilde{^^a4}{"A5}{"A4}%
\questiondown{^^a8}{"A8}{"A8}%
\exclamdown{^^ad}{"AD}{"AD}%
\guilletmotleft{^^ae}{"AE}{"AE}%
\guillemeotright{^^af}{"AF}{"AF}%
\alpha{^^e0}{"E0}{"E0}%
\beta{^^e1}{"E1}{"E1}%
\Gamma{^^e2}{"E2}{"E2}%
\pi{^^e3}{"E3}{"E3}%
\Sigma{^^e4}{"E4}{"E4}%
\sigma{^^e5}{"E5}{"E5}%
\mu{^^e6}{"E6}{"E6}%
\tau{^^e7}{"E7}{"E7}%
\Phi{^^e8}{"E8}{"E8}%
\ThetaSign{^^e9}{"E9}{"E9}%
\Omega{^^ea}{"EA}{"EA}%
\delta{^^eb}{"EB}{"EB}%
\infty{^^ec}{"EC}{"EC}%
\emptysetSign{^^ed}{"ED}{"ED}%
\epsilon{^^ee}{"EE}{"EE}%
\cap{^^ef}{"EF}{"EF}%
\equiv{^^f0}{"F0}{"F0}%
\pm{^^f1}{"F1}{"F1}%
\geq{^^f2}{"F2}{"F2}%
\leq{^^f3}{"F3}{"F3}%
\div{^^f6}{"F6}{"F6}%
\approx{^^f7}{"F7}{"F7}%
\bullet{^^f9}{"F9}{"F9}%
\endgroup
```

\@MakeHyphenation437

```
\ifnum\CurrentEncoding=\DC\relax
\def\@MakeHyphenationFourThreeSeven#1{%
  \catcode`#1=12%
  \ifnum`#1="80
     % C cedilla translated in DC encoding to "D7 (which is a semi graphical
     % sign  in code page 437)
     \lccode`#1="D7%
  \else\ifnum`#1="81
     %u dieresis --> "FC
     \lccode`#1="FC%
  \else\ifnum`#1="82
     %e acute --> "E9 (Theta sign)
     \lccode`#1="E9%
  \else\ifnum`#1="83
     %a circumflex --> "E2 (Gamma sign)
     \lccode`#1="E2%
  \else\ifnum`#1="84
     %a dieresis --> "E4 o tilde
     \lccode`#1="E4%
  \else\ifnum`#1="85
```

```
    %a grave --> "E0 (alpha sign)
    \lccode`#1="E0%
 \else\ifnum`#1="86
    %a ring --> "E5 (sigma sign)
    \lccode`#1="E5%
 \else\ifnum`#1="87
    %c cedilla --> "E7 (tau sign)
    \lccode`#1="E7%
\else\ifnum`#1="88
    %e circumflex --> "EA (Omega sign)
    \lccode`#1="EA%
 \else\ifnum`#1="89
    %e dieresis --> "EB (delta sign)
    \lccode`#1="EB%
 \else\ifnum`#1="8A
    %e grave --> "E8 (Phi sign)
    \lccode`#1="E8%
 \else\ifnum`#1="8B
    %i dieresis --> "EF (set intersection sign)
    \lccode`#1="EF%
 \else\ifnum`#1="8C
    %i circumflex --> "EE (epsilon sign)
    \lccode`#1="EE%
 \else\ifnum`#1="8D
    %i grave --> "EC (infinity sign)
    \lccode`#1="EC%
 \else\ifnum`#1="8E
    %A dieresis --> "C4 (semi graphical character)
    \lccode`#1="C4%
 \else\ifnum`#1="8F
    %A ring --> "C5 (semi graphical character)
    \lccode`#1="C5%
 \else\ifnum`#1="90
    %E acute --> "C9 (semi graphical character)
    \lccode`#1="C9%
 \else\ifnum`#1="91
    %ae ligature --> "E6 (mu sign)
    \lccode`#1="E6%
 \else\ifnum`#1="92
    %AE ligature --> "C6 (semi graphical character)
    \lccode`#1="C6%
 \else\ifnum`#1="93
    %o circumflex --> "F4 (upper part of integral sign)
    \lccode`#1="F4%
 \else\ifnum`#1="94
    %o dieresis --> "F6 (divide sign)
    \lccode`#1="F6%
 \else\ifnum`#1="95
    %O grave --> "F2 (greater or equal sign)
    \lccode`#1="F2%
 \else\ifnum`#1="96
    %u circumflex --> "FB (square sign)
    \lccode`#1="FB%
 \else\ifnum`#1="97
    %u grave --> "F9 (big bullet sign)
    \lccode`#1="F9%
 \else\ifnum`#1="98
    %y dieresis --> "B8 (semi graphical character)
    \lccode`#1="B8%
 \else\ifnum`#1="99
    %O dieresis --> "D6 (semi graphical character)
    \lccode`#1="D6%
```

```
  \else\ifnum`#1="9A
     %U dieresis --> "DC (semi graphical sign)
     \lccode`#1="DC%
  \else\ifnum`#1="A0
     %a acute --> "E1 (Beta sign)
     \lccode`#1="E1%
  \else\ifnum`#1="A1
     %i acute --> "ED (empty set sign)
     \lccode`#1="ED%
  \else\ifnum`#1="A2
     %o acute --> "F3 (less or equal sign)
     \lccode`#1="F3%
  \else\ifnum`#1="A3
     %u acute --> "FA (Bullet sign)
     \lccode`#1="FA%
  \else\ifnum`#1="A4
     %n tilde --> "F1 (Plus minus sign)
     \lccode`#1="F1%
  \else\ifnum`#1="A5
     %N tilde --> "D1 (semi graphical character)
     \lccode`#1="D1%
  \else
    %we don't have a letter (a character to form word)
    \@BadHyphenCarMsg{#1}
    \catcode`#1=15% make this character invalid
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
  \fi\fi\fi
% We must have same count of \fi than \ifnum (33)
}%
\fi %\ifx\CurrentEncoding...
\catcode`\@=\atcatcode \let\atcatcode\relax
⟨/codepage437⟩
```

4.6 Table for the code page of Mc Intosh (file: codemac.tex)

\@CodeMac

```
⟨*codepagemac⟩
\chardef\atcatcode=\catcode`\@
\catcode`\@=11\relax
   {%
      \catcode`\Y=\active
      \gdef Y{\string Y}%
   }%
\begingroup
\input initcar %
\ifcase\CurrentEncoding
   \input shapecm %
\or
   \input shapedc %
\fi
\Adieresis{^^80}{"80}{"8A}%
\Aring{^^81}{"81}{"8C}%
\Ccedilla{^^82}{"82}{"8D}%
\Eacute{^^83}{"83}{"8E}%
\Ntilde{^^84}{"84}{"96}%
\Odieresis{^^85}{"85}{"9A}%
\Udieresis{^^86}{"86}{"9F}%
\aacute{^^87}{"E7}{"87}%
\agrave{^^88}{"CB}{"88}%
```

```
\acircumflex{^^89}{"E5}{"89}%
\adieresis{^^8a}{"80}{"8A}%
\atilde{^^8b}{"CC}{"8B}%
\aring{^^8c}{"81}{"8C}%
\ccedilla{^^8d}{"82}{"8D}%
\eacute{^^8e}{"83}{"8E}%
\egrave{^^8f}{"E9}{"8F}%
\ecircumflex{^^90}{"E6}{"90}%
\edieresis{^^91}{"E8}{"91}%
\iacute{^^92}{"EA}{"92}%
\igrave{^^93}{"ED}{"93}%
\icircumflex{^^94}{"EB}{"94}%
\idieresis{^^95}{"EC}{"95}%
\ntilde{^^96}{"84}{"96}%
\oacute{^^97}{"EE}{"97}%
\ograve{^^98}{"F1}{"98}%
\ocircumflex{^^99}{"EF}{"99}%
\odieresis{^^9a}{"85}{"9A}%
\otilde{^^9b}{"CD}{"9B}%
\uacute{^^9c}{"F2}{"9C}%
\ugrave{^^9d}{"F4}{"9D}%
\ucircumflex{^^9e}{"F3}{"9E}%
\udieresis{^^9f}{"86}{"9F}%
\dag{^^a0}{"A0}{"A0}%
\degree{^^a1}{"A1}{"A1}%
\cent{^^a2}{"A2}{"A2}%
\pounds{^^a3}{"A3}{"A3}%
\section{^^a4}{"A4}{"A4}%
\bullet{^^a5}{"A5}{"A5}%
\ParagraphSign{^^a6}{"A6}{"A6}%
\beta{^^a7}{"A7}{"A7}%
\register{^^a8}{"A8}{"A8}%
\copyright{^^a9}{"A9}{"A9}%
\trademark{^^aa}{"AA}{"AA}%
\acute{^^ab}{"AB}{"AB}%
\dieresis{^^ac}{"AC}{"AC}%
\neq{^^ad}{"AD}{"AD}%
\AE{^^ae}{"AE}{"BE}%
\Oslash{^^af}{"AF}{"BF}%
\pm{^^b1}{"B1}{"B1}%
\leq{^^b2}{"B2}{"B2}%
\geq{^^b3}{"B3}{"B3}%
\yen{^^b4}{"B4}{"B4}%
\mu{^^b5}{"B5}{"B5}%
\delta{^^b6}{"B6}{"B6}%
\Sigma{^^b7}{"B7}{"B7}%
\Pi{^^b8}{"B8}{"B8}%
\pi{^^b9}{"B9}{"B9}%
\florin{^^ba}{"BA}{"BA}%
\ordfeminine{^^bb}{"BB}{"BB}%
\ordmasculine{^^bc}{"BC}{"BC}%
\Omega{^^bd}{"BD}{"BD}%
\ae{^^be}{"AE}{"BE}%
\oslash{^^bf}{"AF}{"BF}%
\questiondown{^^c0}{"C0}{"C0}%
\exclamdown{^^c1}{"C1}{"C1}%
\neg{^^c2}{"C2}{"C2}%
\approx{^^c5}{"C5}{"C5}%
\partial{^^c6}{"C6}{"C6}%
\guilletmotleft{^^c7}{"C7}{"C7}%
\guillemeotright{^^c8}{"C8}{"C8}%
\ellipsis{^^c9}{"C9}{"C9}%
```

```
\unbreakablespace{^^ca}{"CA}{"CA}%
\Agrave{^^cb}{"CB}{"88}%
\Atilde{^^cc}{"CC}{"8B}%
\Otilde{^^cd}{"CD}{"9B}%
\OE{^^ce}{"CE}{"CF}%
\oe{^^cf}{"CE}{"CF}%
\emdash{^^d1}{"D1}{"D1}%
\quotedblleft{^^d2}{"D2}{"D2}%
\quotedblright{^^d3}{"D3}{"D3}%
\quoteleft{^^d4}{"D4}{"D4}%
\quoteright{^^d5}{"D5}{"D5}%
\div{^^d6}{"D6}{"D6}%
\diamond{^^d7}{"D7}{"D7}%
\ydieresis{^^d8}{"D9}{"D8}%
\Ydieresis{^^d9}{"D9}{"D8}%
\currency{^^db}{"DB}{"DB}%
\fiLigature{^^de}{"DE}{"DE}%
\flLigature{^^df}{"DF}{"DF}%
\ddag{^^e0}{"E0}{"E0}%
\cedilla{^^e2}{"E2}{"E2}%
\perthousand{^^e4}{"E4}{"E4}%
\Acircumflex{^^e5}{"E5}{"89}%
\Ecircumflex{^^e6}{"E6}{"90}%
\Aacute{^^e7}{"E7}{"87}%
\Edieresis{^^e8}{"E8}{"91}%
\Egrave{^^e9}{"E9}{"8F}%
\Iacute{^^ea}{"EA}{"92}%
\Icircumflex{^^eb}{"EB}{"94}%
\Idieresis{^^ec}{"EC}{"95}%
\Igrave{^^ed}{"ED}{"93}%
\Oacute{^^ee}{"EE}{"97}%
\Ocircumflex{^^ef}{"EF}{"99}%
\Ograve{^^f1}{"F1}{"98}%
\Uacute{^^f2}{"F2}{"9C}%
\Ucircumflex{^^f3}{"F3}{"9E}%
\Ugrave{^^f4}{"F4}{"9D}%
\powerone{^^f5}{"F5}{"F5}%
\endgroup
```

\@MakeHyphenationMac

```
\ifnum\CurrentEncoding=\DC\relax
\def\@MakeHyphenationMac#1{%
 \catcode`#1=12%Legal value for \hyphenation
  \ifnum`#1="80
     % A dieresis --> C4 (graphical symbol)
     \lccode`#1="C4%
  \else\ifnum`#1="81
     %A ring --> "C5 (approx sign)
     \lccode`#1="C5%
  \else\ifnum`#1="82
     %C cedilla --> "C7 (french opening guillemet)
     \lccode`#1="C7%
  \else\ifnum`#1="83
     %E acute --> "C9 (three dot sign)
     \lccode`#1="C9%
  \else\ifnum`#1="84
     %N tilde --> "D1 (long dash)
     \lccode`#1="D1%
  \else\ifnum`#1="85
     %O dieresis --> "D6 (divide sign)
     \lccode`#1="D6%
  \else\ifnum`#1="86
```

```
    %U dieresis --> "DC (graphical symbol)
    \lccode`#1="DC%
 \else\ifnum`#1="87
    %a acute --> "E1 (graphical symbol)
    \lccode`#1="E1%
\else\ifnum`#1="88
    %a grave --> "E0 (double dag sign)
    \lccode`#1="E0%
 \else\ifnum`#1="89
    %a circumflex --> "E2 (cedilla accent)
    \lccode`#1="E2%
 \else\ifnum`#1="8A
    %a dieresis --> "E4 (graphical symbol)
    \lccode`#1="E4%
 \else\ifnum`#1="8B
    %a tilde --> "E3 (graphical symbol)
    \lccode`#1="E3%
 \else\ifnum`#1="8C
    %a ring --> "E5 (A circumflex) --> a circumflex
    \lccode`#1="89%
 \else\ifnum`#1="8D
    %c cedilla --> "E7 (A acute) --> a acute
    \lccode`#1="87%
 \else\ifnum`#1="8E
    %e acute --> "E9 (E grave) --> e grave
    \lccode`#1="8F%
 \else\ifnum`#1="8F
    %e grave --> "E8 (E dieresis) --> e dieresis
    \lccode`#1="91%
 \else\ifnum`#1="90
    %e circumflex --> "EA (I acute) --> i acute
    \lccode`#1="92%
 \else\ifnum`#1="91
    %e dieresis --> "EB (I circumflex) --> i circumflex
    \lccode`#1="94%
 \else\ifnum`#1="92
    %i acute --> "ED (I grave) --> i grave
    \lccode`#1="93%
 \else\ifnum`#1="93
    %i grave --> "EC (I dieresis) --> i dieresis
    \lccode`#1="95%
 \else\ifnum`#1="94
    %i circumflex --> "EE (O acute) --> o acute
    \lccode`#1="97%
 \else\ifnum`#1="95
    %i dieresis --> "EF (O circumflex) --> o circumflex
    \lccode`#1="99%
 \else\ifnum`#1="96
    %n tilde --> "F1 (O grave) --> o grave
    \lccode`#1="98%
 \else\ifnum`#1="97
    %o acute --> "F3 (U circumflex) --> u circumflex
    \lccode`#1="9E%
 \else\ifnum`#1="98
    %o grave --> "F2 (U acute) --> u acute
    \lccode`#1="9C%
 \else\ifnum`#1="99
    %o circumflex --> "F4 (U grave) --> u grave
    \lccode`#1="9D%
 \else\ifnum`#1="9A
    %o dieresis --> "F6 (graphical sign)
    \lccode`#1="F6%
```

```
\else\ifnum`#1="9B
   %o tilde --> "F5 (power one sign)
   \lccode`#1="F5%
\else\ifnum`#1="9C
   %u acute --> "FA (graphical sign)
   \lccode`#1="FA%
\else\ifnum`#1="9D
   %u grave --> "F9 (graphical sign)
   \lccode`#1="F9%
\else\ifnum`#1="9E
   %u circumflex --> "FB (graphical sign)
   \lccode`#1="FB%
\else\ifnum`#1="9F
   %u dieresis --> "FC (graphical sign)
   \lccode`#1="FC%
\else\ifnum`#1="AE
   %AE ligature --> "C6 (differential sign)
   \lccode`#1="C6%
\else\ifnum`#1="BE
   %ae ligature --> "E6 (E circumflex) --> e circumflex
   \lccode`#1="90%
\else\ifnum`#1="CB
   %A grave --> "C0 (Interrogation down sign)
   \lccode`#1="C0%
\else\ifnum`#1="CC
   %A tilde --> "C3 (graphical sign)
   \lccode`#1="C3%
\else\ifnum`#1="CD
   %O tilde --> "D5 (closing american quote)
   \lccode`#1="D5%
\else\ifnum`#1="CE
   %OE ligature --> "D7 (diamond sign)
   \lccode`#1="D7%
\else\ifnum`#1="CF
   %oe ligature --> "F7 (graphical sign)
   \lccode`#1="F7%
\else\ifnum`#1="D8
   %y dieresis --> "B8 (Pi sign)
   \lccode`#1="B8%
\else\ifnum`#1="E5
   %A circumflex --> "C2 (neg sign)
   \lccode`#1="C2%
\else\ifnum`#1="E6
   %E circumflex --> "CA (graphical sign)
   \lccode`#1="CA%
\else\ifnum`#1="E7
   %A acute --> "C1 (Exclam down sign)
   \lccode`#1="C1%
\else\ifnum`#1="E8
   %E dieresis --> "CB (A acute) --> a acute
   \lccode`#1="88%
\else\ifnum`#1="E9
   %E grave --> "C8 (closing french guillemet)
   \lccode`#1="C8%
\else\ifnum`#1="EA
   %I acute --> "CD (O tilde) --> o tilde
   \lccode`#1="9B%
\else\ifnum`#1="EB
   %I circumflex --> "CE (OE ligature) --> oe ligature
   \lccode`#1="EF%
   \@ConflictHyphenCarMsg{I circumflex ("EB)}{I dieresis ("EC)}%
\else\ifnum`#1="EC
```

```
      %I dieresis --> "CF (oe ligature)
      \lccode`#1="EF%
      \@ConflictHyphenCarMsg{I dieresis ("EC)}{I circumflex ("EB)}%
   \else\ifnum`#1="ED
      %I acute --> "CC (A tilde) --> a tilde
      \lccode`#1="8B%
   \else\ifnum`#1="EE%
      %O acute --> "D3 (closing us guillemet)
      \lccode`#1="D3%
   \else\ifnum`#1="EF%
      %O circumflex --> "D4 (opening quote)
      \lccode`#1="D4%
   \else\ifnum`#1="F1%
      %O grave --> "D2 (Opening US guillemets)
      \lccode`#1="D2%
   \else\ifnum`#1="F2%
      %U acute --> "DA (graphical character)
      \lccode`#1="DA%
   \else\ifnum`#1="F3%
      %U circumflex --> "DB (graphical character)
      \lccode`#1="DB%
   \else\ifnum`#1="F4%
      %U grave --> "D9 (Y dieresis) --> y dieresis
      \lccode`#1="D8%
   \else
     %we don't have a letter (a character to form word)
     \@BadHyphenCarMsg{#1}
     \catcode`#1=15% make this character invalid
   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
   \fi\fi\fi\fi\fi
% We must have same count of \fi than \ifnum (55)
}%
\fi %\ifx\CurrentEncoding...
\catcode`\@=\atcatcode \let\atcatcode\relax
⟨/codepagemac⟩
```

4.7 Table for the code page of Iso Latin set One (file: codeiso1.tex)

\@IsoLatinSetOne

```
⟨*codepageiso1⟩
\chardef\atcatcode=\catcode`\@
\catcode`\@=11\relax
   {%
      \catcode`\Y=\active
      \gdef Y{\string Y}%
   }%
\begingroup
\input initcar %
\ifcase\CurrentEncoding
   \input shapecm %
   \Agrave{^^c0}{"C0}{"E0}%
   \Aacute{^^c1}{"C1}{"E1}%
   \Acircumflex{^^c2}{"C2}{"E2}%
   \Atilde{^^c3}{"C3}{"E3}%
   \Adieresis{^^c4}{"C4}{"E4}%
   \Aring{^^c5}{"C5}{"E5}%
   \AE{^^c6}{"C6}{"E6}%
```

```
    \Ccedilla{^^c7}{"C7}{"E7}%
    \Egrave{^^c8}{"C8}{"E8}%
    \Eacute{^^c9}{"C9}{"E9}%
    \Ecircumflex{^^ca}{"CA}{"EA}%
    \Edieresis{^^cb}{"CB}{"EB}%
    \Igrave{^^cc}{"CC}{"EC}%
    \Iacute{^^cd}{"CD}{"ED}%
    \Icircumflex{^^ce}{"CE}{"EE}%
    \Idieresis{^^cf}{"CF}{"EF}%
    \DBar{^^d0}{"D0}{"F0}%
    \Ntilde{^^d1}{"D1}{"F1}%
    \Ograve{^^d2}{"D2}{"F2}%
    \Oacute{^^d3}{"D3}{"F3}%
    \Ocircumflex{^^d4}{"D4}{"F4}%
    \Otilde{^^d5}{"D5}{"F5}%
    \Odieresis{^^d6}{"D6}{"F6}%
    \times{^^d7}{"D7}{"D7}%
    \Oslash{^^d8}{"D8}{"F8}%
    \Ugrave{^^d9}{"D9}{"F9}%
    \Uacute{^^da}{"DA}{"FA}%
    \Ucircumflex{^^db}{"DB}{"FB}%
    \Udieresis{^^dc}{"DC}{"FC}%
    \Yacute{^^dd}{"DD}{"FD}%
    \thorn{^^de}{"FE}{"DE}%
    \beta{^^df}{"DF}{"DF}%
    \agrave{^^e0}{"C0}{"E0}%
    \aacute{^^e1}{"C1}{"E1}%
    \acircumflex{^^e2}{"C2}{"E2}%
    \atilde{^^e3}{"C3}{"E3}%
    \adieresis{^^e4}{"C4}{"E4}%
    \aring{^^e5}{"C5}{"E5}%
    \ae{^^e6}{"C6}{"E6}%
    \ccedilla{^^e7}{"C7}{"E7}%
    \egrave{^^e8}{"C8}{"E8}%
    \eacute{^^e9}{"C9}{"E9}%
    \ecircumflex{^^ea}{"CA}{"EA}%
    \edieresis{^^eb}{"CB}{"EB}%
    \igrave{^^ec}{"CC}{"EC}%
    \iacute{^^ed}{"CD}{"ED}%
    \icircumflex{^^ee}{"CE}{"EE}%
    \idieresis{^^ef}{"CF}{"EF}%
    \dBar{^^f0}{"D0}{"F0}%
    \ntilde{^^f1}{"D1}{"F1}%
    \ograve{^^f2}{"D2}{"F2}%
    \oacute{^^f3}{"D3}{"F3}%
    \ocircumflex{^^f4}{"D4}{"F4}%
    \otilde{^^f5}{"D5}{"F5}%
    \odieresis{^^f6}{"D6}{"F6}%
    \div{^^f7}{"F7}{"F7}%
    \oslash{^^f8}{"D8}{"F8}%
    \ugrave{^^f9}{"D9}{"F9}%
    \uacute{^^fa}{"DA}{"FA}%
    \ucircumflex{^^fb}{"DB}{"FB}%
    \udieresis{^^fc}{"DC}{"FC}%
    \yacute{^^fd}{"DD}{"FD}%
    \Thorn{^^fe}{"DE}{"FE}%
    \ydieresis{^^ff}{"59}{"FF}%
\or
    \input shapedc %
```

The following characters are in the same place in both (Iso1 and Dc) encodings. Thus the only thing to do is to change the *catcode* to transform the character in letter (can be used in control

sequence, but this is not recommended if one want have portable documents) and to define good values for uppercase and lowercase characters.

```
%Agrave
\global\catcode"C0=11\global\uccode"C0="C0\global\lccode"C0="E0%
%Aacute
\global\catcode"C1=11\global\uccode"C1="C1\global\lccode"C1="E1%
%Acircumflex
\global\catcode"C2=11\global\uccode"C2="C2\global\lccode"C2="E2%
%Atilde
\global\catcode"C3=11\global\uccode"C3="C3\global\lccode"C3="E3%
%Adieresis
\global\catcode"C4=11\global\uccode"C4="C4\global\lccode"C4="E4%
%Aring
\global\catcode"C5=11\global\uccode"C5="C5\global\lccode"C5="E5%
%AE
\global\catcode"C6=11\global\uccode"C6="C6\global\lccode"C6="E6%
%Ccedilla
\global\catcode"C7=11\global\uccode"C7="C7\global\lccode"C7="E7
%Egrave
\global\catcode"C8=11\global\uccode"C8="C8\global\lccode"C8="E8%
%Eacute
\global\catcode"C9=11\global\uccode"C9="C9\global\lccode"C9="E9%
%Ecircumflex
\global\catcode"CA=11\global\uccode"CA="CA\global\lccode"CA="EA%
%Edieresis
\global\catcode"CB=11\global\uccode"CB="CB\global\lccode"CB="EB%
%Igrave
\global\catcode"CC=11\global\uccode"CC="CC\global\lccode"CC="EC%
%Iacute
\global\catcode"CD=11\global\uccode"CD="CD\global\lccode"CD="ED%
%Icircumflex
\global\catcode"CE=11\global\uccode"CE="CE\global\lccode"CE="EE%
%Idieresis
\global\catcode"CF=11\global\uccode"CF="CF\global\lccode"CF="EF%
%DBar
\global\catcode"D0=11\global\uccode"D0="D0\global\lccode"D0="F0%
%Ntilde
\global\catcode"D1=11\global\uccode"D1="D1\global\lccode"D1="F1%
%Ograve
\global\catcode"D2=11\global\uccode"D2="D2\global\lccode"D2="F2%
%Oacute
\global\catcode"D3=11\global\uccode"D3="D3\global\lccode"D3="F3%
%Ocircumflex
\global\catcode"D4=11\global\uccode"D4="D4\global\lccode"D4="F4%
%Otilde
\global\catcode"D5=11\global\uccode"D5="D5\global\lccode"D5="F5%
%Odieresis
\global\catcode"D6=11\global\uccode"D6="D6\global\lccode"D6="F6%
\times{^^d7}{"D7}{"D7}%
%Oslash
\global\catcode"D8=11\global\uccode"D8="D8\global\lccode"D8="F8%
%Ugrave
\global\catcode"D9=11\global\uccode"D9="D9\global\lccode"D9="F9%
%Uacute
\global\catcode"DA=11\global\uccode"DA="DA\global\lccode"DA="FA%
%Ucircumflex
\global\catcode"DB=11\global\uccode"DB="DB\global\lccode"DB="FB%
%Udieresis
\global\catcode"DC=11\global\uccode"DC="DC\global\lccode"DC="FC%
%Yacute
\global\catcode"DD=11\global\uccode"DD="DD\global\lccode"DD="FD%
```

```
%thorn
\global\catcode"DE=11\global\uccode"DE="FE\global\lccode"DE="DE%
\beta{^^df}{"DF}{"DF}%
%agrave
\global\catcode"E0=11\global\uccode"E0="C0\global\lccode"E0="E0%
%aacute
\global\catcode"E1=11\global\uccode"E1="C1\global\lccode"E1="E1%
%acircumflex
\global\catcode"E2=11\global\uccode"E2="C2\global\lccode"E2="E2%
%atilde
\global\catcode"E3=11\global\uccode"E3="C3\global\lccode"E3="E3%
%adieresis
\global\catcode"E4=11\global\uccode"E4="C4\global\lccode"E4="E4%
%aring
\global\catcode"E5=11\global\uccode"E5="C5\global\lccode"E5="E5%
%ae
\global\catcode"E6=11\global\uccode"E6="C6\global\lccode"E6="E6%
%ccedilla
\global\catcode"E7=11\global\uccode"E7="C7\global\lccode"E7="E7%
%egrave
\global\catcode"E8=11\global\uccode"E8="C8\global\lccode"E8="E8%
%eacute
\global\catcode"E9=11\global\uccode"E9="C9\global\lccode"E9="E9%
%ecircumflex
\global\catcode"EA=11\global\uccode"EA="CA\global\lccode"EA="EA%
%edieresis
\global\catcode"EB=11\global\uccode"EB="CB\global\lccode"EB="EB%
%igrave
\global\catcode"EC=11\global\uccode"EC="CC\global\lccode"EC="EC%
%iacute
\global\catcode"ED=11\global\uccode"ED="CD\global\lccode"ED="ED%
%icircumflex
\global\catcode"EE=11\global\uccode"EE="CE\global\lccode"EE="EE%
%idieresis
\global\catcode"EF=11\global\uccode"EF="CF\global\lccode"EF="EF%
%dBar
\global\catcode"F0=11\global\uccode"F0="D0\global\lccode"F0="F0%
%ntilde
\global\catcode"F1=11\global\uccode"F1="D1\global\lccode"F1="F1%
%ograve
\global\catcode"F2=11\global\uccode"F2="D2\global\lccode"F2="F2%
%oacute
\global\catcode"F3=11\global\uccode"F3="D3\global\lccode"F3="F3%
%ocircumflex
\global\catcode"F4=11\global\uccode"F4="D4\global\lccode"F4="F4%
%otilde
\global\catcode"F5=11\global\uccode"F5="D5\global\lccode"F5="F5%
%odieresis
\global\catcode"F6=11\global\uccode"F6="D6\global\lccode"F6="F6%
\div{^^f7}{"F7}{"F7}%
%oslash
\global\catcode"F8=11\global\uccode"F8="D8\global\lccode"F8="F8%
%ugrave
\global\catcode"F9=11\global\uccode"F9="D9\global\lccode"F9="F9%
%uacute
\global\catcode"FA=11\global\uccode"FA="DA\global\lccode"FA="FA%
%ucircumflex
\global\catcode"FB=11\global\uccode"FB="DB\global\lccode"FB="FB%
%udieresis
\global\catcode"FC=11\global\uccode"FC="DC\global\lccode"FC="FC%
%yacute
\global\catcode"FD=11\global\uccode"FD="DD\global\lccode"FD="FD%
```

```
    %Thorn
    \global\catcode"FE=11\global\uccode"FE="DE\global\lccode"FE="FE%
    %ydieresis
    \global\catcode"FF=11\global\uccode"FF="59\global\lccode"FF="FF%
\fi %\ifcase
```

These symbols are drawn with mathematical commands and thus are aleways "active" in both encoding

```
\exclamdown{^^a1}{"A1}{"A1}%
\cent{^^a2}{"A2}{"A2}%
\pounds{^^a3}{"A3}{"A3}%
\currency{^^a4}{"A4}{"A4}%
\yen{^^a5}{"A5}{"A5}%
\splitbar{^^a6}{"A6}{"A6}%
\section{^^a7}{"A7}{"A7}%
\dieresis{^^a8}{"A8}{"A8}%
\copyright{^^a9}{"A9}{"A9}%
\ordfeminine{^^aa}{"AA}{"AA}%
\guilletmotleft{^^ab}{"AB}{"AB}%
\neg{^^ac}{"AC}{"AC}%
\register{^^ad}{"AD}{"AD}%
\degree{^^b0}{"B0}{"B0}%
\pm{^^b1}{"B1}{"B1}%
\powertwo{^^b2}{"B2}{"B2}%
\powerthree{^^b3}{"B3}{"B3}%
\mu{^^b5}{"B5}{"B5}%
\ParagraphSign{^^b6}{"B6}{"B6}%
\bullet{^^b7}{"B7}{"B7}%
\cedilla{^^b8}{"B8}{"B8}%
\powerone{^^b9}{"B9}{"B9}%
\ordmasculine{^^ba}{"BA}{"BA}%
\guillemeotright{^^bb}{"BB}{"BB}%
\OneQuarter{^^bc}{"BC}{"BC}%
\OneHalf{^^bd}{"BD}{"BD}%
\threequarter{^^be}{"BE}{"BE}%
\questiondown{^^bf}{"BF}{"BF}%
\endgroup
```

\@MakeHyphenationLatin1

```
\ifnum\CurrentEncoding=\DC
\def\@MakeHyphenationLatinOne#1{%
% Here we have not too much work since the character from Iso Latin set one and
% from DC encoding are the same. We just do the verification that the character
% is a letter.
 \catcode`#1=12%
 \ifnum`#1>"C0%
   \ifnum`#1="D7% Times sign
      \@BadHyphenCarMsg{#1}%
   \fi
   \ifnum`#1="DF% beta sign
      \@BadHyphenCarMsg{#1}%
   \fi
   \ifnum`#1="F7% Divide sign
      \@BadHyphenCarMsg{#1}%
   \fi
 \else
   \@BadHyphenCarMsg{#1}%
 \fi
}%
\fi %\ifnum\CurrentEncoding...
\catcode`\@=\atcatcode \let\atcatcode\relax
```

⟨/codepageiso1⟩

4.8 Default value for each character (file: initcar.tex)

The file when inputting give a default value to each character above 127, and set the value for `\lccode` and `\uccode` to the character itself. This convention doesn't follow the normal TEX convention (where a character without uppercase or lowercase has value zero for both code) but it is necessary to be able to declare hyphenation exception (containing character above 127) with the command `\hyphenation`.

```
⟨*initcar⟩
\gdef^^80{\@DefaultValue{80}}\global\uccode"80="80\global\lccode"80="80%
\gdef^^81{\@DefaultValue{81}}\global\uccode"81="81\global\lccode"81="81%
\gdef^^82{\@DefaultValue{82}}\global\uccode"82="82\global\lccode"82="82%
\gdef^^83{\@DefaultValue{83}}\global\uccode"83="83\global\lccode"83="83%
\gdef^^84{\@DefaultValue{84}}\global\uccode"84="84\global\lccode"84="84%
\gdef^^85{\@DefaultValue{85}}\global\uccode"85="85\global\lccode"85="85%
\gdef^^86{\@DefaultValue{86}}\global\uccode"86="86\global\lccode"86="86%
\gdef^^87{\@DefaultValue{87}}\global\uccode"87="87\global\lccode"87="87%
\gdef^^88{\@DefaultValue{88}}\global\uccode"88="88\global\lccode"88="88%
\gdef^^89{\@DefaultValue{89}}\global\uccode"89="89\global\lccode"89="89%
\gdef^^8a{\@DefaultValue{8a}}\global\uccode"8A="8A\global\lccode"8A="8A%
\gdef^^8b{\@DefaultValue{8b}}\global\uccode"8B="8B\global\lccode"8B="8B%
\gdef^^8c{\@DefaultValue{8c}}\global\uccode"8C="8C\global\lccode"8C="8C%
\gdef^^8d{\@DefaultValue{8d}}\global\uccode"8D="8D\global\lccode"8D="8D%
\gdef^^8e{\@DefaultValue{8e}}\global\uccode"8E="8E\global\lccode"8E="8E%
\gdef^^8f{\@DefaultValue{8f}}\global\uccode"8F="8F\global\lccode"8F="8F%
\gdef^^90{\@DefaultValue{90}}\global\uccode"90="90\global\lccode"90="90%
\gdef^^91{\@DefaultValue{91}}\global\uccode"91="91\global\lccode"91="91%
\gdef^^92{\@DefaultValue{92}}\global\uccode"92="92\global\lccode"92="92%
\gdef^^93{\@DefaultValue{93}}\global\uccode"93="93\global\lccode"93="93%
\gdef^^94{\@DefaultValue{94}}\global\uccode"94="94\global\lccode"94="94%
\gdef^^95{\@DefaultValue{95}}\global\uccode"95="95\global\lccode"95="95%
\gdef^^96{\@DefaultValue{96}}\global\uccode"96="96\global\lccode"96="96%
\gdef^^97{\@DefaultValue{97}}\global\uccode"97="97\global\lccode"97="97%
\gdef^^98{\@DefaultValue{98}}\global\uccode"98="98\global\lccode"98="98%
\gdef^^99{\@DefaultValue{99}}\global\uccode"99="99\global\lccode"99="99%
\gdef^^9a{\@DefaultValue{9a}}\global\uccode"9A="9A\global\lccode"9A="9A%
\gdef^^9b{\@DefaultValue{9b}}\global\uccode"9B="9B\global\lccode"9B="9B%
\gdef^^9c{\@DefaultValue{9c}}\global\uccode"9C="9C\global\lccode"9C="9C%
\gdef^^9d{\@DefaultValue{9d}}\global\uccode"9D="9D\global\lccode"9D="9D%
\gdef^^9e{\@DefaultValue{9e}}\global\uccode"9E="9E\global\lccode"9E="9E%
\gdef^^9f{\@DefaultValue{9f}}\global\uccode"9F="9F\global\lccode"9F="9F%
\gdef^^a0{\@DefaultValue{a0}}\global\uccode"A0="A0\global\lccode"A0="A0%
\gdef^^a1{\@DefaultValue{a1}}\global\uccode"A1="A1\global\lccode"A1="A1%
\gdef^^a2{\@DefaultValue{a2}}\global\uccode"A2="A2\global\lccode"A2="A2%
\gdef^^a3{\@DefaultValue{a3}}\global\uccode"A3="A3\global\lccode"A3="A3%
\gdef^^a4{\@DefaultValue{a4}}\global\uccode"A4="A4\global\lccode"A4="A4%
\gdef^^a5{\@DefaultValue{a5}}\global\uccode"A5="A5\global\lccode"A5="A5%
\gdef^^a6{\@DefaultValue{a6}}\global\uccode"A6="A6\global\lccode"A6="A6%
\gdef^^a7{\@DefaultValue{a7}}\global\uccode"A7="A7\global\lccode"A7="A7%
\gdef^^a8{\@DefaultValue{a8}}\global\uccode"A8="A8\global\lccode"A8="A8%
\gdef^^a9{\@DefaultValue{a9}}\global\uccode"A9="A9\global\lccode"A9="A9%
\gdef^^aa{\@DefaultValue{aa}}\global\uccode"AA="AA\global\lccode"AA="AA%
\gdef^^ab{\@DefaultValue{ab}}\global\uccode"AB="AB\global\lccode"AB="AB%
\gdef^^ac{\@DefaultValue{ac}}\global\uccode"AC="AC\global\lccode"AC="AC%
\gdef^^ad{\@DefaultValue{ad}}\global\uccode"AD="AD\global\lccode"AD="AD%
\gdef^^ae{\@DefaultValue{ae}}\global\uccode"AE="AE\global\lccode"AE="AE%
\gdef^^af{\@DefaultValue{af}}\global\uccode"AF="AF\global\lccode"AF="AF%
\gdef^^b0{\@DefaultValue{b0}}\global\uccode"B0="B0\global\lccode"B0="B0%
\gdef^^b1{\@DefaultValue{b1}}\global\uccode"B1="B1\global\lccode"B1="B1%
\gdef^^b2{\@DefaultValue{b2}}\global\uccode"B2="B2\global\lccode"B2="B2%
\gdef^^b3{\@DefaultValue{b3}}\global\uccode"B3="B3\global\lccode"B3="B3%
\gdef^^b4{\@DefaultValue{b4}}\global\uccode"B4="B4\global\lccode"B4="B4%
```

```
\gdef^^b5{\@DefaultValue{b5}}\global\uccode"B5="B5\global\lccode"B5="B5%
\gdef^^b6{\@DefaultValue{b6}}\global\uccode"B6="B6\global\lccode"B6="B6%
\gdef^^b7{\@DefaultValue{b7}}\global\uccode"B7="B7\global\lccode"B7="B7%
\gdef^^b8{\@DefaultValue{b8}}\global\uccode"B8="B8\global\lccode"B8="B8%
\gdef^^b9{\@DefaultValue{b9}}\global\uccode"B9="B9\global\lccode"B9="B9%
\gdef^^ba{\@DefaultValue{ba}}\global\uccode"BA="BA\global\lccode"BA="BA%
\gdef^^bb{\@DefaultValue{bb}}\global\uccode"BB="BB\global\lccode"BB="BB%
\gdef^^bc{\@DefaultValue{bc}}\global\uccode"BC="BC\global\lccode"BC="BC%
\gdef^^bd{\@DefaultValue{bd}}\global\uccode"BD="BD\global\lccode"BD="BD%
\gdef^^be{\@DefaultValue{be}}\global\uccode"BE="BE\global\lccode"BE="BE%
\gdef^^bf{\@DefaultValue{bf}}\global\uccode"BF="BF\global\lccode"BF="BF%
\gdef^^c0{\@DefaultValue{c0}}\global\uccode"C0="C0\global\lccode"C0="C0%
\gdef^^c1{\@DefaultValue{c1}}\global\uccode"C1="C1\global\lccode"C1="C1%
\gdef^^c2{\@DefaultValue{c2}}\global\uccode"C2="C2\global\lccode"C2="C2%
\gdef^^c3{\@DefaultValue{c3}}\global\uccode"C3="C3\global\lccode"C3="C3%
\gdef^^c4{\@DefaultValue{c4}}\global\uccode"C4="C4\global\lccode"C4="C4%
\gdef^^c5{\@DefaultValue{c5}}\global\uccode"C5="C5\global\lccode"C5="C5%
\gdef^^c6{\@DefaultValue{c6}}\global\uccode"C6="C6\global\lccode"C6="C6%
\gdef^^c7{\@DefaultValue{c7}}\global\uccode"C7="C7\global\lccode"C7="C7%
\gdef^^c8{\@DefaultValue{c8}}\global\uccode"C8="C8\global\lccode"C8="C8%
\gdef^^c9{\@DefaultValue{c9}}\global\uccode"C9="C9\global\lccode"C9="C9%
\gdef^^ca{\@DefaultValue{ca}}\global\uccode"CA="CA\global\lccode"CA="CA%
\gdef^^cb{\@DefaultValue{cb}}\global\uccode"CB="CB\global\lccode"CB="CB%
\gdef^^cc{\@DefaultValue{cc}}\global\uccode"CC="CC\global\lccode"CC="CC%
\gdef^^cd{\@DefaultValue{cd}}\global\uccode"CD="CD\global\lccode"CD="CD%
\gdef^^ce{\@DefaultValue{ce}}\global\uccode"CE="CE\global\lccode"CE="CE%
\gdef^^cf{\@DefaultValue{cf}}\global\uccode"CF="CF\global\lccode"CF="CF%
\gdef^^d0{\@DefaultValue{d0}}\global\uccode"D0="D0\global\lccode"D0="D0%
\gdef^^d1{\@DefaultValue{d1}}\global\uccode"D1="D1\global\lccode"D1="D1%
\gdef^^d2{\@DefaultValue{d2}}\global\uccode"D2="D2\global\lccode"D2="D2%
\gdef^^d3{\@DefaultValue{d3}}\global\uccode"D3="D3\global\lccode"D3="D3%
\gdef^^d4{\@DefaultValue{d4}}\global\uccode"D4="D4\global\lccode"D4="D4%
\gdef^^d5{\@DefaultValue{d5}}\global\uccode"D5="D5\global\lccode"D5="D5%
\gdef^^d6{\@DefaultValue{d6}}\global\uccode"D6="D6\global\lccode"D6="D6%
\gdef^^d7{\@DefaultValue{d7}}\global\uccode"D7="D7\global\lccode"D7="D7%
\gdef^^d8{\@DefaultValue{d8}}\global\uccode"D8="D8\global\lccode"D8="D8%
\gdef^^d9{\@DefaultValue{d9}}\global\uccode"D9="D9\global\lccode"D9="D9%
\gdef^^da{\@DefaultValue{da}}\global\uccode"DA="DA\global\lccode"DA="DA%
\gdef^^db{\@DefaultValue{db}}\global\uccode"DB="DB\global\lccode"DB="DB%
\gdef^^dc{\@DefaultValue{dc}}\global\uccode"DC="DC\global\lccode"DC="DC%
\gdef^^dd{\@DefaultValue{dd}}\global\uccode"DD="DD\global\lccode"DD="DD%
\gdef^^de{\@DefaultValue{de}}\global\uccode"DE="DE\global\lccode"DE="DE%
\gdef^^df{\@DefaultValue{df}}\global\uccode"DF="DF\global\lccode"DF="DF%
\gdef^^e0{\@DefaultValue{e0}}\global\uccode"E0="E0\global\lccode"E0="E0%
\gdef^^e1{\@DefaultValue{e1}}\global\uccode"E1="E1\global\lccode"E1="E1%
\gdef^^e2{\@DefaultValue{e2}}\global\uccode"E2="E2\global\lccode"E2="E2%
\gdef^^e3{\@DefaultValue{e3}}\global\uccode"E3="E3\global\lccode"E3="E3%
\gdef^^e4{\@DefaultValue{e4}}\global\uccode"E4="E4\global\lccode"E4="E4%
\gdef^^e5{\@DefaultValue{e5}}\global\uccode"E5="E5\global\lccode"E5="E5%
\gdef^^e6{\@DefaultValue{e6}}\global\uccode"E6="E6\global\lccode"E6="E6%
\gdef^^e7{\@DefaultValue{e7}}\global\uccode"E7="E7\global\lccode"E7="E7%
\gdef^^e8{\@DefaultValue{e8}}\global\uccode"E8="E8\global\lccode"E8="E8%
\gdef^^e9{\@DefaultValue{e9}}\global\uccode"E9="E9\global\lccode"E9="E9%
\gdef^^ea{\@DefaultValue{ea}}\global\uccode"EA="EA\global\lccode"EA="EA%
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\gdef^^ed{\@DefaultValue{ed}}\global\uccode"ED="ED\global\lccode"ED="ED%
\gdef^^ee{\@DefaultValue{ee}}\global\uccode"EE="EE\global\lccode"EE="EE%
\gdef^^ef{\@DefaultValue{ef}}\global\uccode"EF="EF\global\lccode"EF="EF%
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```

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⟨/initcar⟩
```

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