

The soulutf8 package

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Abstract

This package extends package `soul` and adds some support for UTF-8. Namely the input encodings `utf8.def` from package `inputenc` and package `ucs`'s `utf8x.def` are supported.

Contents

1	Documentation	2
1.1	Patch	2
1.2	Future	2
2	Implementation	2
2.1	Reload check and package identification	2
2.2	Catcodes	3
2.3	Loading packages	4
2.3.1	plain-TeX	4
2.3.2	L ^A T _E X	5
2.3.3	ε-TeX	5
2.4	Macro for redefinitions	5
2.5	Redefinition of <code>\SOUL@eval</code>	6
2.6	UTF-8 analysis	9
2.6.1	Help strings	9
2.6.2	Support for <code>utf8.def</code>	9
2.6.3	Support for <code>utf8x.def</code>	10
2.7	Actions for UTF-8 sequences	10
2.7.1	Redefinition of <code>\SOUL@splittoken</code>	11
2.8	Patches	12
3	Test	14
3.1	Catcode checks for loading	14
3.2	L ^A T _E Xtests	16
3.2.1	Driver definitions	17
3.2.2	Test macros	18
3.2.3	Testing	21
4	Installation	22
4.1	Download	22
4.2	Bundle installation	22
4.3	Package installation	22
4.4	Refresh file name databases	23
4.5	Some details for the interested	23
5	References	24

6 History	24
[2007/09/09 v1.0]	24
7 Index	24

1 Documentation

This package `soulutf8` does not have own options and does not define new user commands. Any option is passed to package `soul` [1] that is loaded first. Then some internal macros of `soul` are redefined to add support for UTF-8. The following input encodings are supported:

```
utf8      LATEX base    TDS:tex/latex/base/utf8.def [3]
utf8x     Package ucs   TDS:tex/latex/ucs/utf8x.def [2]
```

UTF-8 byte sequences are added as token group to a word, even if these UTF-8 characters are some kind of hyphen or space. As exception the following three Unicode characters are handled specially:

Slot	Name	Action
U+00A0	NO-BREAK SPACE	like ~
U+2013	EN DASH	--
U+2014	EM DASH	---

1.1 Patch

Also package `soulutf8` tries to patch package `soul` to improve its behaviour:

- A problem with additional levels of curly braces is fixed. As advantage more implicate kernings are detected. However, the result may be incompatible with the original behaviour of package `soul` because of these respected implicate kernings.
- ε -T_EX, especially `\unexpanded` is supported. This allows a better protection of token groups (`\mbox{...}`, `math, ...`).

1.2 Future

Currently package `soul` does not seem to be maintained. Nevertheless if there will be a new version that adds support for UTF-8, then this package may become obsolete.

2 Implementation

```
1 <{*package>
```

2.1 Reload check and package identification

Reload check, especially if the package is not used with L^AT_EX.

```
2 \begingroup
3 \catcode44 12 % ,
4 \catcode45 12 % -
5 \catcode46 12 % .
6 \catcode58 12 % :
7 \catcode64 11 % @
8 \expandafter\let\expandafter\x\csname ver@soulutf8.sty\endcsname
9 \ifcase 0%
10 \ifx\x\relax % plain
11 \else
```

```

12     \ifx\x\empty % LaTeX
13     \else
14         1%
15     \fi
16 \fi
17 \else
18     \catcode35 6 % #
19     \catcode123 1 % {
20     \catcode125 2 % }
21     \expandafter\ifx\csname PackageInfo\endcsname\relax
22         \def\x#1#2{%
23             \immediate\write-1{Package #1 Info: #2.}%
24         }%
25     \else
26         \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27     \fi
28     \x{soulutf8}{The package is already loaded}%
29 \endgroup
30 \expandafter\endinput
31 \fi
32 \endgroup

```

Package identification:

```

33 \begingroup
34 \catcode35 6 % #
35 \catcode40 12 % (
36 \catcode41 12 % )
37 \catcode44 12 % ,
38 \catcode45 12 % -
39 \catcode46 12 % .
40 \catcode47 12 % /
41 \catcode58 12 % :
42 \catcode64 11 % @
43 \catcode123 1 % {
44 \catcode125 2 % }
45 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
46     \def\x#1#2#3[#4]{\endgroup
47         \immediate\write-1{Package: #3 #4}%
48         \xdef#1{#4}%
49     }%
50 \else
51     \def\x#1#2[#3]{\endgroup
52         #2[#{#3}]%
53         \ifx#1\relax
54             \xdef#1{#3}%
55         \fi
56     }%
57 \fi
58 \expandafter\x\csname ver@soulutf8.sty\endcsname
59 \ProvidesPackage{soulutf8}%
60 [2007/09/09 v1.0 Adding support for UTF-8 to soul (H0)]

```

2.2 Catcodes

```

61 \begingroup
62 \catcode123 1 % {
63 \catcode125 2 % }
64 \def\x{\endgroup
65     \expandafter\edef\csname SOuL@AtEnd\endcsname{%
66         \catcode35 \the\catcode35\relax
67         \catcode64 \the\catcode64\relax
68         \catcode123 \the\catcode123\relax
69         \catcode125 \the\catcode125\relax

```

```

70    }%
71  }%
72 \x
73 \catcode35 6 % #
74 \catcode64 11 % @
75 \catcode123 1 % {
76 \catcode125 2 % }
77 \def\TMP@EnsureCode#1#2{%
78   \edef\Soul@AtEnd{%
79     \Soul@AtEnd
80     \catcode#1 \the\catcode#1\relax
81   }%
82   \catcode#1 #2\relax
83 }
84 \TMP@EnsureCode{10}{12}% ^^J
85 \TMP@EnsureCode{33}{12}% !
86 \TMP@EnsureCode{34}{12}% "
87 \TMP@EnsureCode{36}{3}% $
88 \TMP@EnsureCode{39}{12}% '
89 \TMP@EnsureCode{40}{12}% (
90 \TMP@EnsureCode{41}{12}% )
91 \TMP@EnsureCode{42}{12}% *
92 \TMP@EnsureCode{43}{12}% +
93 \TMP@EnsureCode{44}{12}% ,
94 \TMP@EnsureCode{45}{12}% -
95 \TMP@EnsureCode{46}{12}% .
96 \TMP@EnsureCode{47}{12}% /
97 \TMP@EnsureCode{58}{12}% :
98 \TMP@EnsureCode{60}{12}% <
99 \TMP@EnsureCode{61}{12}% =
100 \TMP@EnsureCode{62}{12}% >
101 \TMP@EnsureCode{94}{7}% ^
102 \TMP@EnsureCode{96}{12}% ‘
103 \TMP@EnsureCode{126}\active % ~
104 \TMP@EnsureCode{128}{12}% ^^80
105 \TMP@EnsureCode{147}{12}% ^^93
106 \TMP@EnsureCode{148}{12}% ^^94
107 \TMP@EnsureCode{160}{12}% ^^a0
108 \TMP@EnsureCode{194}{12}% ^^c2
109 \TMP@EnsureCode{226}{12}% ^^e2

```

2.3 Loading packages

Package soul uses \documentclass to detect L^AT_EX.

```
110 \ifx\documentclass\@undefined
```

2.3.1 plain-T_EX

First we check, whether package soul is already loaded.

```
111 \expandafter\ifx\csname SOUL@endcsname\relax
```

In case of plain-T_EX package soul defines some macros in a simple manner that will break the definitions of minil_TX.tex, for example. Therefore these macros are first saved and restored afterwards.

```

112   \let\Soul@orgDeclareRobustCommand\DeclareRobustCommand
113   \let\Soul@orgnewcommand           \newcommand
114   \let\Soul@orgDeclareOption       \DeclareOption
115   \let\Soul@orgPackageError        \PackageError
116   \def\Soul@restorelatexcmds{%
117     \let\DeclareRobustCommand\Soul@orgDeclareRobustCommand
118     \let\newcommand           \Soul@orgnewcommand
119     \let\DeclareOption       \Soul@orgDeclareOption
120     \let\PackageError        \Soul@orgPackageError

```

```

121    }%
122    \input soul.sty\relax
123    \SOuL@restorelatexcmds
124    \fi

```

`\SOUL@error` Package soul's use of `\PackageError` is replaced by `\@PackageError` of package `infwarerr`.

```

125    \input infwarerr.sty\relax
126    \let\SOuL@orgSOUL@error\SOUL@error
127    \def\SOUL@error{%
128        \begingroup
129        \let\PackageError\@PackageError
130        \SOuL@orgSOUL@error
131    \endgroup
132    }%

133    \input etexcmds.sty\relax

```

`\@onelevel@sanitize` Define L^AT_EX's `\@onelevel@sanitize` if not already available.

```

134    \expandafter\ifx\csname @onelevel@sanitize\endcsname\relax
135        \def\@onelevel@sanitize#1{%
136            \edef#1{%
137                \expandafter\strip@prefix\meaning#1%
138            }%
139        }%

```

`\strip@prefix`

```

140    \def\strip@prefix#1>{ }%

141    \fi
142 \else

```

2.3.2 L^AT_EX

```

143 \DeclareOption*{\PassOptionsToPackage{\CurrentOption}{soul}}%
144 \ProcessOptions\relax
145 \RequirePackage{soul}[2003/11/17]%
146 \RequirePackage{infwarerr}[2007/09/09]%
147 \RequirePackage{etexcmds}[2007/09/09]%
148 \fi

```

2.3.3 ϵ -T_EX

In plain-T_EX command `\+` is an *outer* macro. Therefore numbers are used to avoid problems.

```

149 \ifetex@unexpanded
150 \catcode33=14 % '!': comment
151 \catcode43=9 % '+': ignore
152 \else
153 \catcode33=9 % '!': ignore
154 \catcode43=14 % '+': comment
155 \fi

```

2.4 Macro for redefinitions

`\SOuL@redefine`

```

156 \def\SOuL@redefine#1{%
157     \begingroup
158     \def\SOuL@cmd{#1}%
159     \afterassignment\SOuL@cmdcheck
160     \def\SOuL@temp
161 }

```

\SOUL@cmdcheck

```

162 \def\SOUL@cmdcheck{%
163   \expandafter\ifx\SOUL@cmd\SOUL@temp
164   \else
165     \edef\SOUL@temp*{\expandafter\string\SOUL@cmd}%
166     \@PackageWarningNoLine{soulutf8}{%
167       Command \SOUL@temp* has changed.\MessageBreak
168       Supported versions of package 'soul': 2003/11/17.\MessageBreak
169       Depending on the unknown changes the redefinition\MessageBreak
170       of \SOUL@temp* may not behave correctly%
171     }%
172   \fi
173 \expandafter\endgroup
174 \expandafter\def\SOUL@cmd
175 }

```

2.5 Redefinition of \SOUL@eval

\SOUL@eval Macro \SOUL@eval is redefined to add detection of the first byte of a UTF-8 sequence. Because \SOUL@eval is overwritten, a warning is issued, if the contents of \SOUL@eval is not as expected.

```

176 \SOUL@redefine\SOUL@eval{%

```

First the expected definition.

```

177 \def\SOUL@n*##1{\SOUL@scan}%
178 \if\noexpand\SOUL@@\SOUL@spc
179 \else
180   \SOUL@ignorespacesfalse
181 \fi
182 \ifnum\SOUL@minus=\thr@@
183   \SOUL@flushminus
184 \else\ifnum\SOUL@comma=\tw@
185   \SOUL@flushcomma
186 \else\ifnum\SOUL@apo=\tw@
187   \SOUL@flushapo
188 \else\ifnum\SOUL@grave=\tw@
189   \SOUL@flushgrave
190 \fi\fi\fi\fi
191 \ifx\SOUL@@-\else\SOUL@flushminus\fi
192 \ifx\SOUL@,@\else\SOUL@flushcomma\fi
193 \ifx\SOUL@@'\else\SOUL@flushapo\fi
194 \ifx\SOUL@@'\else\SOUL@flushgrave\fi
195 \ifx\SOUL@@-%
196   \advance\SOUL@minus\@ne
197 \else\ifx\SOUL@@,%
198   \advance\SOUL@comma\@ne
199 \else\ifx\SOUL@@'%
200   \advance\SOUL@apo\@ne
201 \else\ifx\SOUL@@'\%
202   \advance\SOUL@grave\@ne
203 \else
204   \SOUL@flushminus
205   \SOUL@flushcomma
206   \SOUL@flushapo
207   \SOUL@flushgrave
208   \ifx\SOUL@@\SOUL@stop
209     \def\SOUL@n*{%
210       \SOUL@doword
211       \SOUL@eventuallyexhyphen\null
212     }%
213   \else\ifx\SOUL@@\par
214     \def\SOUL@n*\par{\par\leavevmode\SOUL@scan}%

```



```

276 \ifx\SOUL@@-\else\SOUL@flushminus\fi
277 \ifx\SOUL@,@\else\SOUL@flushcomma\fi
278 \ifx\SOUL@@'\else\SOUL@flushapo\fi
279 \ifx\SOUL@@'\else\SOUL@flushgrave\fi
280 \ifx\SOUL@@-%
281   \advance\SOUL@minus\@ne
282 \else\ifx\SOUL@,@,%
283   \advance\SOUL@comma\@ne
284 \else\ifx\SOUL@@'\%
285   \advance\SOUL@apo\@ne
286 \else\ifx\SOUL@@'\%
287   \advance\SOUL@grave\@ne
288 \else
289   \SOUL@flushminus
290   \SOUL@flushcomma
291   \SOUL@flushapo
292   \SOUL@flushgrave
293   \ifx\SOUL@@\SOUL@stop
294     \def\SOUL@n*{%
295       \SOUL@doword
296       \SOUL@eventuallyexhyphen\null
297     }%
298   \else\ifx\SOUL@@\par
299     \def\SOUL@n*\par{\par\leavevmode\SOUL@scan}%
300   \else\if\noexpand\SOUL@@\SOUL@spc
301     \SOUL@doword
302     \SOUL@eventuallyexhyphen\null
303     \ifSOUL@ignorespaces
304     \else
305       \SOUL@everyspace{}%
306     \fi
307     \def\SOUL@n* {\SOUL@scan}%
308   \else\ifx\SOUL@@\%
309     \SOUL@doword
310     \SOUL@eventuallyexhyphen\null
311     \SOUL@everyspace{\unskip\nobreak\hfil\break}%
312     \SOUL@ignorepacestrue
313   \else\ifx\SOUL@@~%
314     \SOUL@doword
315     \SOUL@eventuallyexhyphen\null
316     \SOUL@everyspace{\nobreak}%
317   \else\ifx\SOUL@@\slash
318     \SOUL@doword
319     \SOUL@eventuallyexhyphen{/}%
320     \SOUL@exhyphen{/}%
321   \else\ifx\SOUL@@\mbox
322     \def\SOUL@n*{\SOUL@addprotect}%
323   \else\ifx\SOUL@@\hbox
324     \def\SOUL@n*{\SOUL@addprotect}%
325   \else\ifx\SOUL@@\soulomit
326     \def\SOUL@n*\soulomit##1{%
327       \SOUL@doword
328       {\spaceskip\SOUL@spaceskip##1}%
329       \SOUL@scan
330     }%
331   \else\ifx\SOUL@@\break
332     \SOUL@doword
333     \break
334   \else\ifx\SOUL@@\linebreak
335     \SOUL@doword
336     \SOUL@everyspace{\linebreak}%
337   \else\ifcat\bgroup\noexpand\SOUL@@

```



```

391 \def\Soul@temp{#2}%
392 \chardef\Soul@octets=%
393 \ifx\Soul@temp\Soul@stringtwo
394 \tw@
395 \else\ifx\Soul@temp\Soul@stringthree
396 \thr@@
397 \else\ifx\Soul@temp\Soul@stringfour
398 4 %
399 \else
400 \z@
401 \fi\fi\fi
402 }

```

2.6.3 Support for utf8x.def

\Soul@analyzeutfviii

```

403 \begingroup
404 \edef\x{\endgroup
405 \def\noexpand\Soul@analyzeutfviii{%
406 \noexpand\expandafter\noexpand\Soul@checkutfviii
407 \noexpand\meaning\noexpand\Soul@
408 \Soul@stringmacrocolon\Soul@charhash1{}-{}-{}-{}%
409 \Soul@stringcsnameu\Soul@stringundeferr
410 \noexpand\@nil
411 }%

```

\Soul@checkutfviii

```

412 \def\noexpand\Soul@checkutfviii
413 ##1\Soul@stringmacrocolon\Soul@charhash1##2##3##4##5##6%
414 \Soul@stringcsnameu##7\Soul@stringundeferr##8\noexpand\@nil
415 }%
416 \x{%
417 \def\Soul@temp{#7}%
418 \ifx\Soul@temp\Soul@empty
419 \chardef\Soul@octets=\z@
420 \else
421 \def\Soul@temp{#5}%
422 \ifx\Soul@temp\Soul@charthree
423 \chardef\Soul@octets=4 %
424 \else
425 \def\Soul@temp{#3}%
426 \ifx\Soul@temp\Soul@chartwo
427 \chardef\Soul@octets=\thr@@
428 \else
429 \chardef\Soul@octets=\tw@
430 \fi
431 \fi
432 \fi
433 }

```

2.7 Actions for UTF-8 sequences

\Soul@addtwooctets

```

434 \def\Soul@addtwooctets#1#2{%
435 \def\Soul@temp{#1#2}%
436 \@onelevel@sanitize\Soul@temp
437 \ifx\Soul@temp\Soul@stringnobreakspace
438 \Soul@doword
439 \Soul@eventuallyexhyphen\null
440 \Soul@everySPACE{\nobreak}%
441 \let\Soul@next\Soul@scan

```

```

442 \else
443   \def\Soul@next{%
444 !     \Soul@addtoken{\noexpand#1\noexpand#2}}%
445 +     \Soul@addtoken{\etex@unexpanded{#1#2}}}%
446   }%
447 \fi
448 \Soul@next
449 }

```

\Soul@addthreeoctets

```

450 \def\Soul@addthreeoctets#1#2#3{%
451   \def\Soul@temp{#1#2#3}%
452   \@onelevel@sanitize\Soul@temp
453   \ifx\Soul@temp\Soul@stringendash
454     \Soul@doword
455     \Soul@eventuallyexhyphen{-}%
456     \Soul@exhyphen{--}%
457     \let\Soul@next\Soul@scan
458   \else
459     \ifx\Soul@temp\Soul@stringemdash
460       \Soul@doword
461       \Soul@eventuallyexhyphen{-}%
462       \Soul@exhyphen{---}%
463       \let\Soul@next\Soul@scan
464     \else
465       \def\Soul@next{%
466 !         \Soul@addtoken{\noexpand#1\noexpand#2\noexpand#3}}%
467 +         \Soul@addtoken{\etex@unexpanded{#1#2#3}}}%
468       }%
469     \fi
470   \fi
471   \Soul@next
472 }

```

\Soul@addfouroctets

```

473 \def\Soul@addfouroctets#1#2#3#4{%
474 ! \Soul@addtoken{\noexpand#1\noexpand#2\noexpand#3\noexpand#4}}%
475 + \Soul@addtoken{\etex@unexpanded{#1#2#3#4}}}%
476 }

```

2.7.1 Redefinition of \Soul@splittoken

\Soul@splittoken Macro **\Soul@splittoken** separates the first token or token group from a word and redefines the word to contain the remaining tokens. However if the remaining tokens are a token group, then the curly braces will be removed and the token group is splitted by the next call of **\Soul@splittoken**. The redefinition avoids the removal of curly braces around the remaining tokens.

```

477 \Soul@redefine\Soul@splittoken#1#2\Soul@stop{%
478   \global\Soul@token={#1}%
479   \global\Soul@word={#2}%
480 }#1{%
481   \global\Soul@token={#1}%
482   \Soul@remainingtoken\relax
483 }

```

\Soul@remainingtoken

```

484 \def\Soul@remainingtoken#1\Soul@stop{%
485   \global\Soul@word=\expandafter{\@gobble#1}%
486 }

```

2.8 Patches

The fixed `\SOUL@splittoken` allows to remove the double sets of curly braces in other macros of package `soul`. The benefit is that implicate kernings are more often detected and fixes a bug in package `soul`. The disadvantage is incompatibility. The width of the resulting strings may change.

`\SOUL@flushcomma`

```
487 \SOUL@redefine\SOUL@flushcomma{%
488   \ifcase\SOUL@comma
489   \or
490     \edef\x{\SOUL@word={\the\SOUL@word,}}\x
491   \or
492     \edef\x{\SOUL@word={\the\SOUL@word{,,}}}\x
493   \fi
494   \SOUL@comma\z@
495 }{%
496   \ifcase\SOUL@comma
497   \or
498     \edef\x{\SOUL@word={\the\SOUL@word,}}\x
499   \or
500     \edef\x{\SOUL@word={\the\SOUL@word{,,}}}\x
501   \fi
502   \SOUL@comma\z@
503 }
```

`\SOUL@flushapo`

```
504 \SOUL@redefine\SOUL@flushapo{%
505   \ifcase\SOUL@apo
506   \or
507     \edef\x{\SOUL@word={\the\SOUL@word'}}\x
508   \or
509     \edef\x{\SOUL@word={\the\SOUL@word{' '}}}\x
510   \fi
511   \SOUL@apo\z@
512 }{%
513   \ifcase\SOUL@apo
514   \or
515     \edef\x{\SOUL@word={\the\SOUL@word'}}\x
516   \or
517     \edef\x{\SOUL@word={\the\SOUL@word{' '}}}\x
518   \fi
519   \SOUL@apo\z@
520 }
```

`\SOUL@flushgrave`

```
521 \SOUL@redefine\SOUL@flushgrave{%
522   \ifcase\SOUL@grave
523   \or
524     \edef\x{\SOUL@word={\the\SOUL@word'}}\x
525   \or
526     \edef\x{\SOUL@word={\the\SOUL@word{' '}}}\x
527   \fi
528   \SOUL@grave\z@
529 }{%
530   \ifcase\SOUL@grave
531   \or
532     \edef\x{\SOUL@word={\the\SOUL@word'}}\x
533   \or
534     \edef\x{\SOUL@word={\the\SOUL@word{' '}}}\x
535   \fi
536   \SOUL@grave\z@
537 }
```

\SOUL@addgroup

```

538 \SOUL@redefine\SOUL@addgroup#1#2{%
539   {%
540     \let\protect\noexpand
541     \edef\x{%
542       \global\SOUL@word={%
543         \the\SOUL@word
544         {\noexpand#1#2}}}%
545     }%
546   }%
547   \x
548 }%
549 \SOUL@scan
550 }#1#2{%
551   \begingroup
552   \let\protect\noexpand
553   \edef\x{\endgroup
554     \SOUL@word={%
555       \the\SOUL@word
556       {\noexpand#1{#2}}}%
557   +   {\etex@unexpanded{#1{#2}}}}%
558   }%
559 }%
560 \x
561 \SOUL@scan
562 }

```

\SOUL@addmath

```

563 \SOUL@redefine\SOUL@addmath$#1${%
564   {%
565     \let\protect\noexpand
566     \edef\x{%
567       \global\SOUL@word={%
568         \the\SOUL@word
569         {\hbox{ $#1$ }}}%
570     }%
571   }%
572   \x
573 }%
574 \SOUL@scan
575 }$#1${%
576   \begingroup
577   \let\protect\noexpand
578   \edef\x{\endgroup
579     \SOUL@word={%
580       \the\SOUL@word
581       {\hbox{ $#1$ }}}%
582   +   {\etex@unexpanded{\hbox{ $#1$ }}}%
583   }%
584 }%
585 \x
586 \SOUL@scan
587 }

```

\SOUL@addprotect

```

588 \SOUL@redefine\SOUL@addprotect#1#2{%
589   {%
590     \let\protect\noexpand
591     \edef\x{%
592       \global\SOUL@word={%
593         \the\SOUL@word
594         {\hbox{ #2 }}}%

```

```

595     }%
596   }%
597   \x
598 }%
599 \SOUL@scan
600 }#1#2{%
601   \begingroup
602     \let\protect\noexpand
603     \edef\x{\endgroup
604       \SOUL@word={%
605         \the\SOUL@word
606 !       {\hbox{#2}}}%
607 +       {\etex@unexpanded{\hbox{#2}}}%
608     }%
609   }%
610   \x
611   \SOUL@scan
612 }

```

\SOUL@addtoken

```

613 + \SOUL@redefine\SOUL@addtoken#1{%
614 +   \edef\x{%
615 +     \SOUL@word={%
616 +       \the\SOUL@word
617 +       \noexpand#1%
618 +     }%
619 +   }%
620 +   \x
621 +   \SOUL@scan
622 + }#1{%
623 +   \edef\x{%
624 +     \SOUL@word={%
625 +       \the\SOUL@word
626 +       \etex@unexpanded{#1}%
627 +     }%
628 +   }%
629 +   \x
630 +   \SOUL@scan
631 + }%

632 \SOUL@AtEnd
633 </package>

```

3 Test

3.1 Catcode checks for loading

```

634 <*test1>
635 \catcode'\{=1 %
636 \catcode'\}=2 %
637 \catcode'\#=6 %
638 \catcode'\@=11 %
639 \expandafter\ifx\csname count@\endcsname\relax
640 \countdef\count@=255 %
641 \fi
642 \expandafter\ifx\csname @gobble\endcsname\relax
643 \long\def@gobble#1{%
644 \fi
645 \expandafter\ifx\csname @firstofone\endcsname\relax
646 \long\def@firstofone#1{#1}%
647 \fi

```

```

648 \expandafter\ifx\csname loop\endcsname\relax
649 \expandafter\@firstofone
650 \else
651 \expandafter\@gobble
652 \fi
653 {%
654 \def\loop#1\repeat{%
655 \def\body{#1}%
656 \iterate
657 }%
658 \def\iterate{%
659 \body
660 \let\next\iterate
661 \else
662 \let\next\relax
663 \fi
664 \next
665 }%
666 \let\repeat=\fi
667 }%
668 \def\RestoreCatcodes{}
669 \count@=0 %
670 \loop
671 \edef\RestoreCatcodes{%
672 \RestoreCatcodes
673 \catcode\the\count@=\the\catcode\count@\relax
674 }%
675 \ifnum\count@<255 %
676 \advance\count@ 1 %
677 \repeat
678
679 \def\RangeCatcodeInvalid#1#2{%
680 \count@=#1\relax
681 \loop
682 \catcode\count@=15 %
683 \ifnum\count@<#2\relax
684 \advance\count@ 1 %
685 \repeat
686 }
687 \expandafter\ifx\csname LoadCommand\endcsname\relax
688 \def\LoadCommand{\input soulutf8.sty\relax}%
689 \fi
690 \def\Test{%
691 \RangeCatcodeInvalid{0}{47}%
692 \RangeCatcodeInvalid{58}{64}%
693 \RangeCatcodeInvalid{91}{96}%
694 \RangeCatcodeInvalid{123}{255}%
695 \catcode'\@=12 %
696 \catcode'\=0 %
697 \catcode'\{=1 %
698 \catcode'\}=2 %
699 \catcode'\#=6 %
700 \catcode'\[=12 %
701 \catcode'\]=12 %
702 \catcode'\%=14 %
703 \catcode'\ =10 %
704 \catcode13=5 %
705 \LoadCommand
706 \RestoreCatcodes
707 }
708 \Test
709 \csname @@end\endcsname

```

```

710 \end
711 </test1>

```

3.2 L^AT_EX tests

```

712 <*test2 | test3 | test4 | test5>
713 <noetex> \let \SavedUnexpanded \unexpanded
714 <noetex> \let \unexpanded \UNDEFINED
715 \NeedsTeXFormat{LaTeX2e}
716 \documentclass{article}
717 \usepackage[T1]{fontenc}
718 \usepackage{lmodern}
719 \usepackage{textcomp}
720 \usepackage[ngerman]{babel}
721 \expandafter\def\csname ver@hypdestopt.sty\endcsname{}
722 \usepackage[unicode]{hyperref}
723 \usepackage{bookmark}
724 \usepackage{color}
725 \usepackage{soul}[2003/11/17]
726 \makeatletter
727 \newcommand*{\@ifDefined}[1]{%
728   \@ifundefined{#1}{%
729     \latex@error{%
730       \expandafter\noexpand\csname#1\endcsname undefined%
731     }\@ehc
732   }%
733 }
734 \newcommand*{\SaveOrg}[1]{%
735   \@ifdefinable{ORG@SOUL@#1}{%
736     \@ifDefined{SOUL@#1}{%
737       \expandafter\let\csname ORG@SOUL@#1\expandafter\endcsname
738         \csname SOUL@#1\endcsname
739     }%
740   }%
741 }
742 \newcommand*{\RestoreOrg}[1]{%
743   \@ifDefined{ORG@SOUL@#1}{%
744     \@ifDefined{SOUL@#1}{%
745       \expandafter\let\csname SOUL@#1\expandafter\endcsname
746         \csname ORG@SOUL@#1\endcsname
747     }%
748   }%
749 }
750 \makeatother
751 \SaveOrg{eval}
752 \SaveOrg{splittoken}
753 \SaveOrg{flushcomma}
754 \SaveOrg{flushapo}
755 \SaveOrg{grave}
756 \SaveOrg{addgroup}
757 \SaveOrg{addmath}
758 \SaveOrg{addprotect}
759 \SaveOrg{addtoken}
760 \usepackage{soulutf8}[2007/09/09]
761 <noetex> \let \unexpanded \SavedUnexpanded

```

Input encoding utf8.

```

762 <*utf8>
763 \usepackage[utf8]{inputenc}
764 \DeclareUnicodeCharacter{00A0}{\nobreakspace}
765 </utf8>

```

Input encoding utf8x. Package ucs has a nasty bug, that it redefines \show.


```

766 <*utf8x>
767 \let\origshow\show
768 \usepackage[utf8x]{inputenc}
769 \AtBeginDocument{%
770   \let\show\origshow
771 }
772 </utf8x>

```

3.2.1 Driver definitions

```

773 \makeatletter

```

\an The definition for \an is taken from the documentation of package soul.

```

774 \DeclareRobustCommand*{\an}{%
775   \def\SOUL@preamble{$^{^P}$}%
776   \def\SOUL@everyspace##1{##1\texttt{\char'\ }\linebreak[2]}%
777   \def\SOUL@postamble{$^{^E}$}%
778   \def\SOUL@everyhyphen{$^{^-}$}\linebreak[1]}%
779   \def\SOUL@everyexhyphen##1{##1$^{^=}$}%
780   \def\SOUL@everysyllable{$^{^S}$}%
781   \def\SOUL@everytoken{\the\SOUL@token$^{^T}$}%
782   \def\SOUL@everylowerthan{$^{^L}$}%
783   \SOUL@
784 }

```

\sy The definition for \sy is taken from the documentation of package soul.

```

785 \DeclareRobustCommand*{\sy}{%
786   \SOUL@setup
787   \def\SOUL@preamble{%
788     \lefthyphenmin=\z@
789     \righthyphenmin=\z@
790   }%
791   \def\SOUL@everyspace##1{##1\space}%
792   \def\SOUL@everysyllable{\the\SOUL@syllable}%
793   \def\SOUL@everyhyphen{%
794     \discretionary{%
795       \SOUL@setkern\SOUL@hyphkern
796       \SOUL@sethyphenchar
797     }{}{%
798       \hbox{\kern1pt$\cdot$}%
799     }%
800   }%
801   \def\SOUL@everyexhyphen##1{%
802     \SOUL@setkern\SOUL@hyphkern
803     \hbox{##1}%
804     \discretionary{}{}{%
805       \SOUL@setkern\SOUL@charkern
806     }%
807   }%
808   \SOUL@
809 }

```

\soulH

```

810 \DeclareRobustCommand*{\soulH}{%
811   \def\SOUL@preamble{%
812     \gdef\SOULH{}%
813     \soulHadd{ }%
814   }%
815   \def\SOUL@everyspace##1{%
816     \soulHadd{Sp}%
817   }%
818   \def\SOUL@postamble{%
819     \soulHadd{ ]}%

```

```

820 }%
821 \def\SOUL@everyhyphen{%
822   \soulHadd{Hy}%
823 }%
824 \def\SOUL@everyexhyphen##1{%
825   \soulHadd{Exhy}%
826 }%
827 \def\SOUL@everysyllable{%
828   \soulHadd{Sy}%
829 }%
830 \def\SOUL@everytoken{%
831   \soulHadd{T}%
832 }%
833 \def\SOUL@everylowerthan{%
834   \soulHadd{<}%
835 }%
836 \SOUL@
837 }
838 \newcommand*{\soulHadd}[1]{%
839   #1%
840   \expandafter\gdef\expandafter\soulHstring\expandafter{%
841     \soulHstring
842     #1%
843   }%
844 }

```

3.2.2 Test macros

```

845 \usepackage{qstest}
846 \IncludeTests{*}
847 \LogTests{log}{*}{*}

848 \newsavebox\boxA
849 \newsavebox\boxB
850 \newsavebox\boxC

\TestDriver

851 \newcommand*{\TestDriver}[4]{%
852   \subsection{Driver #1}%
853   \@PackageInfo{soulutf8-test}{* Driver #1}%
854   \expandafter\let\expandafter\testdriver\csname #1\endcsname
855   \def\teststringA{#3}%
856   \def\teststringB{#4}%
857   \begin{qstest}{string-#2-driver-#1}{string,#2,driver,#1}%
858     \@PackageInfo{soulutf8-test}{* Version: soulutf8}%
859     \global\let\soulHstring\@empty
860     \setbox0=\hbox{\expandafter\testdriver\expandafter{\teststringA}}%
861     \let\HstringA\soulHstring
862     \SetTestVBox{\boxA}{\teststringA}%
863     %
864     \@PackageInfo{soulutf8-test}{* Version: soul + patch}%
865     \global\let\soulHstring\@empty
866     \RestoreOrg{eval}%
867     \setbox2=\hbox{\expandafter\testdriver\expandafter{\teststringB}}%
868     \let\HstringB\soulHstring
869     \SetTestVBox{\boxB}{\teststringB}%
870     %
871     \@PackageInfo{soulutf8-test}{* Version: original soul}%
872     \global\let\soulHstring\@empty
873     \RestoreOrg{splittoken}%
874     \RestoreOrg{flushcomma}%
875     \RestoreOrg{flushapo}%
876     \RestoreOrg{grave}%

```

```

877 \RestoreOrg{addgroup}%
878 \RestoreOrg{addmath}%
879 \RestoreOrg{addprotect}%
880 \RestoreOrg{addtoken}%
881 \setbox4=\hbox{\expandafter\testdriver\expandafter{\teststringB}}%
882 \let\HstringC\soulHstring
883 \SetTestVBox{\boxC}{\teststringB}%
884 %
885 \TestInfo{0}{soulutf8}%
886 \TestInfo{2}{soul + patch}%
887 \TestInfo{4}{original soul}%
888 \TestInfoVBox
889 \showboxdepth=\maxdimen
890 \showboxbreadth=\maxdimen
891 \tracingonline=@ne
892 \Expect*{\HstringA}*{\HstringB}%
893 \Expect*{\HstringA}*{\HstringC}%
894 \Expect*{\the\wd0}*{\the\wd2}%
895 \ifdim\wd0=\wd2 %
896 \else
897 \showbox0 %
898 \showbox2 %
899 \fi
900 \Expect*{\the\ht0}*{\the\ht2}%
901 \Expect*{\the\dp0}*{\the\dp2}%
902 \Expect*{\the\wd\boxB}*{\the\wd\boxA}%
903 \Expect*{\the\wd\boxC}*{\the\wd\boxA}%
904 \Expect*{\the\ht\boxB}*{\the\ht\boxA}%
905 \ifdim\ht\boxB=\ht\boxA
906 \else
907 \showbox\boxA
908 \showbox\boxB
909 \fi
910 \Expect*{\the\ht\boxC}*{\the\ht\boxA}%
911 \Expect*{\the\dp\boxB}*{\the\dp\boxA}%
912 \Expect*{\the\dp\boxC}*{\the\dp\boxA}%
913 \end{qstest}%
914 }

```

\SetTestVBox

```

915 \newcommand*{\SetTestVBox}[2]{%
916 \setbox#1=\vbox{%
917 \hsize=0pt\relax
918 \hfuzz=100mm\relax
919 \expandafter\testdriver\expandafter{#2}%
920 }%
921 }

```

\TestInfo

```

922 \newcommand*{\TestInfo}[2]{%
923 \par
924 \noindent
925 \copy#1\relax
926 \hfill
927 \begingroup
928 \small
929 \ifdim\wd0=\wd2\relax
930 \ifdim\wd0=\wd4\relax
931 \else
932 \ifnum#1=2 %
933 \raisebox{.5\baselineskip}[Opt][Opt]{%
934 \llap{$\}$ }%

```

```

935         \rlap{width = \the\wd#1\relax\space$\{$}%
936         \phantom{width = 999.99999pt}}%
937         \qqquad
938     }%
939     \else
940         \ifnum#1=4 %
941             \rlap{width = \the\wd#1}%
942             \phantom{width = 999.99999pt}}%
943             \qqquad
944         \fi
945     \fi
946 \fi
947 \else
948     \begingroup
949         \bfseries
950         \rlap{width = \the\wd#1}%
951         \phantom{width = 999.99999pt}}%
952     \endgroup
953     \qqquad
954 \fi
955 \rlap{(#2)}%
956 \phantom{(original soul)}}%
957 \endgroup
958 \par
959 }

```

\TestInfoVBox

```

960 \newcommand*{\TestInfoVBox}{%
961     \par
962     \noindent
963     \mbox{\vrule\relax\space\copy\boxA}%
964     \ifdim\ht\boxA=\ht\boxB
965     \else
966         \hfill
967         \begingroup
968             \small
969             \rlap{(soulutf8)}%
970             \phantom{(soulutf8)}}%
971         \endgroup
972     \par
973     \noindent
974     \mbox{\vrule\relax\space\copy\boxB}%
975     \hfill
976     \begingroup
977         \small
978         \rlap{(soul)}%
979         \phantom{(soulutf8)}}%
980     \endgroup
981 \fi
982 \par
983 }

```

\Test

```

984 \makeatletter
985 \newcommand*{\Test}[3]{%
986     \clearpage
987     \begingroup
988         \def\linebreak{\textbackslash linebreak }%
989         \def\{\{\textbackslash\textbackslash}%
990         \def\soulomit##1{%
991             \textbackslash soulomit\textbraceleft##1\textbraceright
992             }%

```

```

993 \def\mbox##1{%
994 \textbackslash mbox\textbraceleft##1\textbraceright
995 }%
996 \def\abc{\textbackslash abc }%
997 \def\texttt##1{%
998 \textbackslash texttt\textbraceleft##1\textbraceright
999 }%
1000 \def\c##1{%
1001 \textbackslash c\textbraceleft##1\textbraceright
1002 }%
1003 <utf8x>
1004 \count@=128 %
1005 \loop
1006 \ifnum\count@<256 %
1007 \lccode'\~=\count@
1008 \lowercase{%
1009 \def~{\noexpand~}%
1010 }%
1011 \advance\count@\@ne
1012 \repeat
1013 </utf8x>
1014 \csname protected@edef\endcsname\x\endgroup
1015 \noexpand\section{String #1: #2}%
1016 }%
1017 \x
1018 \TestDriver{so}{#1}{#2}{#3}%
1019 \TestDriver{caps}{#1}{#2}{#3}%
1020 \TestDriver{ul}{#1}{#2}{#3}%
1021 \TestDriver{st}{#1}{#2}{#3}%
1022 \TestDriver{hl}{#1}{#2}{#3}%
1023 \TestDriver{an}{#1}{#2}{#3}%
1024 \TestDriver{sy}{#1}{#2}{#3}%
1025 \TestDriver{soulH}{#1}{#2}{#3}%
1026 }
1027 \makeatother

```

3.2.3 Testing

```

1028 \begin{document}
1029 \Test A{}{}%
1030 \Test B{Hello World}{Hello World}%
1031 \Test C{%
1032 Umlauts: ^c3^84^c3^96^c3^9c^c3^a4^c3^b6^c3^bc^c3^9f%
1033 }%
1034 Umlauts: \"A\"O\"U\"a\"o\"u\"ss
1035 }%
1036 \Test D{Euro: ^e2^82^ac}{Euro: \texteuro}%
1037 \Test E{Stra^c3^9fe}{Stra\ss e}%
1038 \Test F{R^c3^b6mer}{R\"omer}%
1039 \Test G{A^e2^80^93B^e2^80^94C}{A--B---C}%
1040 \Test H{X^c2^a0Y}{X~Y}%
1041 \Test I{A^c5^a4}{A\v T}%
1042 \Test J{A,B,,C,,,D,,,E}{A,B,,C,,,D,,,E}%
1043 \Test K{A'B''C''D''''E}{A'B''C''D''''E}%
1044 \Test L{A'B'C''D''''E}{A'B'C''D''''E}%
1045 \Test M{A$x$B}{A$x$B}%
1046 \Test N{A\mbox{abc}B}{A\mbox{abc}B}%
1047 \Test O{,TA''}{,TA''}%
1048 \Test P{{!'}Hola{?'}}{{!'}Hola{?'}}%
1049 \Test Q{re-sent\slash x}{re-sent\slash x}%
1050 \Test R{new\\line}{new\\line}%
1051 \Test S{foo\linebreak bar}{foo\linebreak bar}%
1052 \Test T{Virchow{sche}}{Virchow{sche}}%

```

```

1053 \Test U{A\soulomit{foo}B}{A\soulomit{foo}B}%
1054 \Test V{A\texttt{xyz}B}{A\texttt{xyz}B}%
1055 \Test W{ffi}{ffi}%
1056 \Test X{f{}f{}i}{f{}f{}i}%
1057 \Test Y{f\mbox{}f\mbox{}i}{f\mbox{}f\mbox{}i}%
1058 \Test Z{c{"a}}{c{"a}}%
1059 <*test2 | test3>
1060 \let\abcx\UNDEFINED
1061 \def\abc{%
1062     \begingroup
1063     \def\abcx{x}%
1064     \abcx
1065     \endgroup
1066 }%
1067 \Test{AA}{[{x\abc x}]}[{xxx}]}%
1068 </test2 | test3>
1069 \end{document}
1070 </test2 | test3 | test4 | test5>

```

4 Installation

4.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/soulutf8.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/soulutf8.pdf](#) Documentation.

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

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#)

TDS refers to the standard “A Directory Structure for T_EX Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

4.2 Bundle installation

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

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

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

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

4.3 Package installation

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

```
tex soulutf8.dtx
```

¹<http://ftp.ctan.org/tex-archive/>

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

```
soulutf8.sty      → tex/generic/oberdiek/soulutf8.sty
soulutf8.pdf      → doc/latex/oberdiek/soulutf8.pdf
test/soulutf8-test1.tex → doc/latex/oberdiek/test/soulutf8-test1.tex
test/soulutf8-test2.tex → doc/latex/oberdiek/test/soulutf8-test2.tex
test/soulutf8-test3.tex → doc/latex/oberdiek/test/soulutf8-test3.tex
test/soulutf8-test4.tex → doc/latex/oberdiek/test/soulutf8-test4.tex
test/soulutf8-test5.tex → doc/latex/oberdiek/test/soulutf8-test5.tex
soulutf8.dtx      → source/latex/oberdiek/soulutf8.dtx
```

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

4.4 Refresh file name databases

If your \TeX distribution (te \TeX , mi \TeX , ...) relies on file name databases, you must refresh these. For example, te \TeX users run `texhash` or `mktextlsr`.

4.5 Some details for the interested

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

```
pdftk soulutf8.pdf unpack_files output .
```

Unpacking with \LaTeX . The `.dtx` chooses its action depending on the format:

plain- \TeX : Run `docstrip` and extract the files.

\LaTeX : Generate the documentation.

If you insist on using \LaTeX for `docstrip` (really, `docstrip` does not need \LaTeX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{soulutf8.dtx}
```

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

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

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

An example follows how to generate the documentation with pdf \LaTeX :

```
pdflatex soulutf8.dtx
makeindex -s gind.ist soulutf8.idx
pdflatex soulutf8.dtx
makeindex -s gind.ist soulutf8.idx
pdflatex soulutf8.dtx
```

5 References

- [1] Melchior Franz: *The soul package*; 2003/11/17;
CTAN:macros/latex/contrib/soul/.
- [2] Dominique P. G. Unruh: *ucs.sty – Unicode Support*; 2004/10/17;
CTAN:macros/latex/contrib/unicode/.
- [3] Frank Mittelbach, Chris Rowley: *Providing some UTF-8 support via inputenc*;
2006/03/30;
CTAN:macros/latex/base/utf8inc.dtx.

6 History

[2007/09/09 v1.0]

- First version.

7 Index

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

Symbols	
\"	1034, 1038, 1058
\#	637, 699
\%	702
\@	638, 695
\@PackageError	129
\@PackageInfo	853, 858, 864, 871
\@PackageWarningNoLine	166
\@ehc	731
\@empty	859, 865, 872
\@firstofone	646, 649
\@gobble	485, 643, 651
\@ifDefined	727, 736, 743, 744
\@ifdefinable	735
\@ifundefined	728
\@latex@error	729
\@ne	196, 198, 200, 202, 281, 283, 285, 287, 891, 1011
\@nil	385, 388, 410, 414
\@onelevel@sanitize	<u>134</u> , 362, 436, 452
\@undefined	110
\[700
\]	223, 308, 696, 989, 1050
\{	635, 697, 935
\}	636, 698, 934
\]	701
\~	1007
_	703, 776
A	
\abc	996, 1061, 1067
\abcx	1060, 1063, 1064
\active	103
\advance	196, 198, 200, 202, 281, 283, 285, 287, 676, 684, 1011
\afterassignment	159
\an	<u>774</u>
\AtBeginDocument	769
B	
\baselineskip	933
\begin	857, 1028
\bfseries	949
\body	655, 659
\boxA	848, 862, 902, 903, 904, 905, 907, 910, 911, 912, 963, 964
\boxB	849, 869, 902, 904, 905, 908, 911, 964, 974
\boxC	850, 883, 903, 910, 912
\break	226, 246, 248, 311, 331, 333
C	
\c	1000, 1058
\catcode	3, 4, 5, 6, 7, 18, 19, 20, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 62, 63, 66, 67, 68, 69, 73, 74, 75, 76, 80, 82, 150, 151, 153, 154, 635, 636, 637, 638, 673, 682, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704
\cdot	798
\char	776
\chardef	392, 419, 423, 427, 429
\clearpage	986
\copy	925, 963, 974
\count@	640, 669, 673, 675, 676, 680, 682, 683, 684, 1004, 1006, 1007, 1011
\countdef	640
\csname	8, 21, 45, 58, 65, 111, 134, 361, 362, 639,

642, 645, 648, 687, 709, 721, 730, 737, 738, 745, 746, 854, 1014	\input 122, 125, 133, 688
\CurrentOption 143	\iterate 656, 658, 660
D	K
\DeclareOption 114, 119, 143	\kern 798
\DeclareRobustCommand 112, 117, 774, 785, 810	L
\DeclareUnicodeCharacter 764	\lccode 1007
\discretionary 794, 804	\leavevmode 214, 299
\documentclass 110, 716	\lefthyphenmin 788
\dp 901, 911, 912	\linebreak 249, 251, 334, 336, 776, 778, 988, 1051
E	\llap 934
\empty 12	\LoadCommand 688, 705
\end 710, 913, 1069	\LogTests 847
\endcsname 8, 21, 45, 58, 65, 111, 134, 361, 362, 639, 642, 645, 648, 687, 709, 721, 730, 737, 738, 745, 746, 854, 1014	\loop 654, 670, 681, 1005
\endinginput 30	\lowercase 1008
\etex@unexpanded 445, 467, 475, 557, 582, 607, 626	M
\Expect 892, 893, 894, 900, 901, 902, 903, 904, 910, 911, 912	\makeatletter 726, 773, 984
G	\makeatother 750, 1027
\gdef 812, 840	\maxdimen 889, 890
H	\mbox 236, 321, 963, 974, 993, 1046, 1057
\hbox .. 238, 323, 569, 581, 582, 594, 606, 607, 798, 803, 860, 867, 881	\meaning 137, 383, 407
\hfil 226, 311	\MessageBreak 167, 168, 169
\hfill 926, 966, 975	N
\hfuzz 918	\NeedsTeXFormat 715
\hsize 917	\newcommand 113, 118, 727, 734, 742, 838, 851, 915, 922, 960, 985
\HstringA 861, 892, 893	\newsavebox 848, 849, 850
\HstringB 868, 892	\next 660, 662, 664
\HstringC 882, 893	\nobreak 226, 231, 311, 316, 440
\ht 900, 904, 905, 910, 964	\nobreakspace 764
I	\noindent 924, 962, 973
\if 178, 215, 263, 300	\null 211, 217, 225, 230, 296, 302, 310, 315, 439
\ifcase 9, 343, 346, 488, 496, 505, 513, 522, 530	O
\ifcat 252, 254, 337, 339	\origshow 767, 770
\ifdim 895, 905, 929, 930, 964	P
\ifetex@unexpanded 149	\PackageError 115, 120, 129
\ifnum . 182, 184, 186, 188, 267, 269, 271, 273, 675, 683, 932, 940, 1006	\PackageInfo 26
\ifSOUL@ignorespaces 218, 303	\par 213, 214, 298, 299, 923, 958, 961, 972, 982
\ifx 10, 12, 21, 45, 53, 110, 111, 134, 163, 191, 192, 193, 194, 195, 197, 199, 201, 208, 213, 223, 228, 232, 236, 238, 240, 246, 249, 276, 277, 278, 279, 280, 282, 284, 286, 293, 298, 308, 313, 317, 321, 323, 325, 331, 334, 393, 395, 397, 418, 422, 426, 437, 453, 459, 639, 642, 645, 648, 687	\PassOptionsToPackage 143
\immediate 23, 47	\phantom .. 936, 942, 951, 956, 970, 979
\IncludeTests 846	\ProcessOptions 144
	\protect .. 540, 552, 565, 577, 590, 602
	\ProvidesPackage 59
	Q
	\qqquad 937, 943, 953
	R
	\raisebox 933
	\RangeCatcodeInvalid 679, 691, 692, 693, 694
	\repeat 654, 666, 677, 685, 1012
	\RequirePackage 145, 146, 147
	\RestoreCatcodes .. 668, 671, 672, 706
	\RestoreOrg 742, 866, 873, 874, 875, 876, 877, 878, 879, 880

\righthyphenmin	789	\SOUL@everylowerthan	782, 833
\rlap	935, 941, 950, 955, 969, 978	\SOUL@everyospace	220, 226, 231, 251, 305, 311, 316, 336, 440, 776, 791, 815
S			
\SavedUnexpanded	713, 761	\SOUL@everyosyllable	780, 792, 827
\SaveOrg	734, 751, 752, 753, 754, 755, 756, 757, 758, 759	\SOUL@everytoken	781, 830
\section	1015	\SOUL@exhyphen	235, 320, 456, 462
\setbox	860, 867, 881, 916	\SOUL@flushapo	187, 193, 206, 272, 278, 291, 504
\SetTestVBox	862, 869, 883, 915	\SOUL@flushcomma	185, 192, 205, 270, 277, 290, 487
\show	767, 770	\SOUL@flushgrave	189, 194, 207, 274, 279, 292, 521
\showbox	897, 898, 907, 908	\SOUL@flushminus	183, 191, 204, 268, 276, 289
\showboxbreadth	890	\SOUL@grave	188, 202, 273, 287, 522, 528, 530, 536
\showboxdepth	889	\SOUL@hyphkern	795, 802
\slash	232, 317, 1049	\SOUL@ignorespacesfalse	180, 265
\small	928, 968, 977	\SOUL@ignorespacestrue	227, 312
\SOUL@	783, 808, 836	\SOUL@minus	182, 196, 267, 281
\SOUL@@	178, 191, 192, 193, 194, 195, 197, 199, 201, 208, 213, 215, 223, 228, 232, 236, 238, 240, 246, 249, 252, 254, 263, 276, 277, 278, 279, 280, 282, 284, 286, 293, 298, 300, 308, 313, 317, 321, 323, 325, 331, 334, 337, 339, 383, 407	\SOUL@n	177, 209, 214, 222, 237, 239, 241, 253, 255, 257, 260, 262, 294, 299, 307, 322, 324, 326, 338, 340, 347, 350, 352, 354, 358
\SOuL@addfouroctets	354, 473	\SOuL@next	441, 443, 448, 457, 463, 465, 471
\SOUL@addgroup	253, 338, 538	\SOuL@octets	343, 346, 392, 419, 423, 427, 429
\SOUL@addmath	255, 340, 563	\SOuL@orgDeclareOption	114, 119
\SOUL@addprotect	237, 239, 322, 324, 588	\SOuL@orgDeclareRobustCommand	112, 117
\SOuL@addthreeoctets	352, 450	\SOuL@orgnewcommand	113, 118
\SOUL@addtoken	444, 445, 466, 467, 474, 475, 613	\SOuL@orgPackageError	115, 120
\SOuL@addtwooctets	350, 434	\SOuL@orgSOUL@error	126, 130
\SOuL@analyzeutfviii	342, 379	\SOUL@postamble	777, 818
\SOuL@analyzeutfviiix	344, 403	\SOUL@preamble	775, 787, 811
\SOUL@apo	186, 200, 271, 285, 505, 511, 513, 519	\SOuL@redefine	156, 176, 477, 487, 504, 521, 538, 563, 588, 613
\SOuL@AtEnd	78, 79, 632	\SOuL@remainingtoken	482, 484
\SOuL@charhash	375, 408, 413	\SOuL@restorelatexcmds	116, 123
\SOUL@charkern	805	\SOUL@scan	177, 214, 222, 244, 262, 299, 307, 329, 441, 457, 463, 549, 561, 574, 586, 599, 611, 621, 630
\SOuL@charthree	377, 422	\SOUL@sethyphenchar	796
\SOuL@chartwo	376, 426	\SOUL@setkern	795, 802, 805
\SOuL@checkutfviii	382, 387	\SOUL@setup	786
\SOuL@checkutfviiix	406, 412	\SOUL@spaceskip	243, 328
\SOuL@cmd	158, 163, 165, 174	\SOUL@spc	178, 215, 263, 300
\SOuL@cmdcheck	159, 162	\SOUL@splittoken	477
\SOUL@comma	184, 198, 269, 283, 488, 494, 496, 502	\SOUL@stop	208, 293, 477, 484
\SOuL@defsanitizedstring	360, 364, 365, 366, 367, 368, 369, 370, 371	\SOuL@stringcsnameu	409, 414
\SOUL@dotoken	257, 347	\SOuL@stringemdash	373, 459
\SOUL@doword	210, 216, 224, 229, 233, 242, 247, 250, 295, 301, 309, 314, 318, 327, 332, 335, 438, 454, 460	\SOuL@stringendash	372, 453
\SOuL@empty	378, 418	\SOuL@stringfour	397
\SOUL@error	125	\SOuL@stringmacrocolon	408, 413
\SOUL@eval	176	\SOuL@stringnobreakspace	374, 437
\SOUL@eventuallyexhyphen	211, 217, 225, 230, 234, 296, 302, 310, 315, 319, 439, 455, 461	\SOuL@stringoctets	384, 388
\SOUL@everyexhyphen	779, 801, 824	\SOuL@stringthree	395
\SOUL@everyhyphen	778, 793, 821	\SOuL@stringtwo	393
		\SOuL@stringundeferr	409, 414

<code>\SOuL@stringUTFviii</code>	384, 388	<code>\texttt</code>	776, 997, 1054
<code>\SOUL@syllable</code>	792	<code>\the</code>	66, 67,
<code>\SOuL@temp</code>	160, 163, 165,		68, 69, 80, 490, 492, 498, 500,
	167, 170, 391, 393, 395, 397,		507, 509, 515, 517, 524, 526,
	417, 418, 421, 422, 425, 426,		532, 534, 543, 555, 568, 580,
	435, 436, 437, 451, 452, 453, 459		593, 605, 616, 625, 673, 781,
<code>\SOUL@token</code>	478, 481, 781		792, 894, 900, 901, 902, 903,
<code>\SOUL@word</code>	479, 485, 490, 492, 498,		904, 910, 911, 912, 935, 941, 950
	500, 507, 509, 515, 517, 524,	<code>\thr@@</code>	182, 267, 396, 427
	526, 532, 534, 542, 543, 554,	<code>\TMP@EnsureCode</code>	77, 84, 85,
	555, 567, 568, 579, 580, 592,		86, 87, 88, 89, 90, 91, 92, 93, 94,
	593, 604, 605, 615, 616, 624, 625		95, 96, 97, 98, 99, 100, 101, 102,
<code>\SOULH</code>	812		103, 104, 105, 106, 107, 108, 109
<code>\soulH</code>	<u>810</u>	<code>\tracingonline</code>	891
<code>\soulHadd</code>	813, 816,	<code>\tw@</code> 184, 186, 188, 269, 271, 273, 394, 429	
	819, 822, 825, 828, 831, 834, 838		
<code>\soulHstring</code>	840,		
	841, 859, 861, 865, 868, 872, 882		
<code>\soulomit</code>	240, 241, 325, 326, 990, 1053		
<code>\space</code>	791, 935, 963, 974		
<code>\spaceskip</code>	243, 328		
<code>\ss</code>	1034, 1037		
<code>\strip@prefix</code>	137, <u>140</u>		
<code>\subsection</code>	852		
<code>\sy</code>	<u>785</u>		
	T		
<code>\Test</code>	690, 708, <u>984</u> , 1029,		
	1030, 1031, 1036, 1037, 1038,		
	1039, 1040, 1041, 1042, 1043,		
	1044, 1045, 1046, 1047, 1048,		
	1049, 1050, 1051, 1052, 1053,		
	1054, 1055, 1056, 1057, 1058, 1067		
<code>\TestDriver</code>	<u>851</u> , 1018, 1019,		
	1020, 1021, 1022, 1023, 1024, 1025		
<code>\testdriver</code>	854, 860, 867, 881, 919		
<code>\TestInfo</code>	885, 886, 887, <u>922</u>		
<code>\TestInfoVBox</code>	888, <u>960</u>		
<code>\teststringA</code>	855, 860, 862		
<code>\teststringB</code>	856, 867, 869, 881, 883		
<code>\textbackslash</code>			
	988, 989, 991, 994, 996, 998, 1001		
<code>\textbraceleft</code>	991, 994, 998, 1001		
<code>\textbraceright</code>	991, 994, 998, 1001		
<code>\texteuro</code>	1036		
		U	
		<code>\UNDEFINED</code>	714, 1060
		<code>\unexpanded</code>	713, 714, 761
		<code>\unskip</code>	226, 311
		<code>\usepackage</code>	717, 718, 719, 720, 722,
			723, 724, 725, 760, 763, 768, 845
		V	
		<code>\v</code>	1041
		<code>\vbox</code>	916
		<code>\vrule</code>	963, 974
		W	
		<code>\wd</code>	894, 895,
			902, 903, 929, 930, 935, 941, 950
		<code>\write</code>	23, 47
		X	
		<code>\x</code>	8, 10, 12, 22, 26, 28,
			46, 51, 58, 64, 72, 380, 390, 404,
			416, 490, 492, 498, 500, 507,
			509, 515, 517, 524, 526, 532,
			534, 541, 547, 553, 560, 566,
			572, 578, 585, 591, 597, 603,
			610, 614, 620, 623, 629, 1014, 1017
		Z	
		<code>\z@</code>	400, 419, 494,
			502, 511, 519, 528, 536, 788, 789