**ustrupper() — Convert Unicode string to uppercase, lowercase, or titlecase**

**Description**

ustrupper(s [, loc]) converts the characters in Unicode string s to uppercase under the given locale loc. If loc is not specified, the locale_functions setting is used. The result can be longer or shorter than the input string; for example, the uppercase form of the German letter ß (code point \u00df) is two capital letters “SS”. The same s but different loc can produce different results; for example, the uppercase letter “i” is “I” in English, but it is “İ” with a dot in Turkish.

ustrlower(s [, loc]) converts the characters in Unicode string s to lowercase under the given locale loc. If loc is not specified, the locale_functions setting is used. The result can be longer or shorter than the input Unicode string in bytes. The same s but different loc can produce different results; for example, the lowercase letter of “I” is “i” in English, but it is “ı” without a dot in Turkish. The same Unicode character can be mapped to different Unicode characters based on its surrounding characters; for example, Greek capital letter sigma, Σ, has two lowercase alternatives: σ or, if it is the final character of a word, ς.

ustrtitle(s [, loc]) converts the Unicode words in string s to titlecase. Note that a Unicode word is different from the space-delimited words produced by function word(). A Unicode word is a language unit based on either a set of word-boundary rules or dictionaries for some languages (Chinese, Japanese, and Thai). The titlecase is also locale dependent and context sensitive; for example, lowercase “ij” in titlecase form is “IJ” in Dutch, but it is “Ij” in English. If loc is not specified, the locale_functions setting is used.

When s is not a scalar, these functions return element-by-element results.

**Syntax**

```
string matrix ustrupper(string matrix s [, string scalar loc])
```

```
string matrix ustrlower(string matrix s [, string scalar loc])
```

```
string matrix ustrtitle(string matrix s [, string scalar loc])
```

**Remarks and examples**

Use functions strupper() and strlower() to convert only ASCII letters to uppercase and lowercase.

**Conformability**

ustrupper(s[, loc]), ustrlower(s[, loc]), ustrtitle(s[, loc]):
ustrupper( ) — Convert Unicode string to uppercase, lowercase, or titlecase

\[
\begin{align*}
  s &: \ r \times c \\
  \text{result} &: \ r \times c
\end{align*}
\]

Diagnostics

ustrupper(\(s[\), loc\]), ustrlower(\(s[\), loc\]), and ustrtitle(\(s[\), loc\]) return an empty string if an error occurs.

Also see

[M-5] strupper() — Convert ASCII letter to uppercase (lowercase)

[M-4] String — String manipulation functions

[U] 12.4.2.2 Displaying Unicode characters