**ustrlen() — Length of Unicode string in Unicode characters**

### Description

`ustrlen(s)` returns the number of Unicode characters in the Unicode string `s`. An invalid UTF-8 sequence is counted as one Unicode character. Note that any Unicode character besides ASCII characters (0–127) takes more than 1 byte in UTF-8 encoding, for example, “é” takes 2 bytes.

`ustrinvalidcnt(s)` returns the number of invalid UTF-8 sequences in `s`. An invalid UTF-8 sequence can contain one byte or multiple bytes.

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

### Syntax

```plaintext
real matrix ustrlen(string matrix s)
real matrix ustrinvalidcnt(string matrix s)
```

### Remarks and examples

`ustrlen(s)`, when `s` is a binary string (a string containing null terminator `char(0)`), returns the overall length of the Unicode string. Note that null terminator `char(0)` is a valid Unicode code point.

Use `udstrlen()` to obtain the length of a string in display columns. Use `strlen()` to obtain the length of a string in bytes. See [U] 12.4.2.2 Displaying Unicode characters.

### Conformability

`ustrlen(s), ustrinvalidcnt(s):

- `s`: `r × c`
- `result`: `r × c`

### Diagnostics

`ustrlen(s)` and `ustrinvalidcnt(s)` return negative error codes if an error occurs.
Also see

[M-5] strlen() — Length of string in bytes

[M-5] ustrlen() — Length of Unicode string in display columns

[M-4] String — String manipulation functions

[U] 12.4.2.2 Displaying Unicode characters