Modul:Escape

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Usage

This module is designed as an way to escape strings in a customized and efficient manner. It works by replacing characters that are preceded by your escape char (or phrase) There are two ways to call this module:

From another module:

```
local esc = require('Module:Escape')
esc:char(Vorlage:Green)
local to_escape = esc:text(Vorlage:Green)
Vorlage:Green
local result = esc:undo(to_escape)
```

From a template:

```
{{invoke:Escape|main|mode=Vorlage:Green|char=Vorlage:Green|Vorlage:Green}}
```

In a template, the most useful function is Vorlage:Code.

This module is primarily intended to be used by other modules. However all functions can be called in template space using Vorlage:Para followed by arguments.

All module functions (i.e. any func. other than main()) should be called using a colon (:), e.g. Vorlage:Code or `esc:kill{'{{example|\\}}}', '}'} == '{{example|}'`

Vorlage: TOC tab	This function takes only one argument: A string. All characters in this string which are preceded by the sequence set by escape:char() will be replaced with placeholders that can be converted back into that char by escape:undo()
Vorlage: TOC tab	Takes two arguments: 1. The string that may contain placeholders set by escape:text()

	2. Optional, a char to be placed in front of any characters that have been de-escaped. (i.e. if you need to re-escape those string with a different char)
Vorlage: TOC tab	This is basically equivalent to calling string.gsub() on the string returned by escape:text() and feeding that result into escape:undo() in a single step. Takes three arguments: 1. A string 2. A sequence of characters to be removed from that string. (May use a string.gsub pattern) 3. Optional, a char to be placed in front of any characters that have been de-escaped.
Vorlage: TOC tab	This function's primary use is to initialize the patterns to scan a string for an escape/escaped sequence. It takes two arguments, the first being the escape character and the second being a table of arguments (optional). By default, this module will escape the Vorlage:Code char. To escape the Vorlage:Code char instead, you can do Vorlage:Code (or Vorlage:Code (presuming you stored the table returned by this module in the local variable Vorlage:Code). When called without the second argument, char() will return a table containing the functions. This allows, for example, `escape:char('*'):kill('1*23', '%d')` which would return '2' For the most part, there is very little reason to set Vorlage:Para in template space since the patterns it stores are not shared with other invokations of this module. Templates should instead use the Vorlage:Para if a new escape sequence is desired. **Shortcut** If provided a second argument that is a table containing a {key = value} pair, such that the key is Vorlage:Code, Vorlage:Code, or Vorlage:Code and the value is a table containing the arguments that would have been passed to those functions. For escape:undo(), will cause the escaescape:text() and escape:kill()

Caveats

- When using a multi-character escape sequence, this module only marks it using the byte value of the first character. Thus, escape:undo() will unescape, for example, all characters escaped with 'e' and 'esc' if both were used. In practice however this shouldn't be a problem as multiple escape sequences are pretty rare unless you're transitioning between multiple code languages. (Multiple multi-char escape sequences beginning with the same character are simply bad practice anyhow.)

- Since byte values are stored as numbers, it is not recommended for you to use a number as an escape sequence (though it may work just fine).
- Placeholder byte values separated with return ('\r') characters--chosen because they are seldom used at all, and virtually never used unpaired with '\n'; moreover, it is distinct from the markers generated by Vorlage:Tag or Vorlage:Code (which use the delete char). To set a different separator char, include the key-value pair `{safeChr = Vorlage:Green}` in the table that you pass to escape:char().

Speed

The following are benchmarks...

when executing the following module function:

```
function p.test_kill500(frame)
 local esc = require('Module:Escape')
 for k = 1, 500 do
  local v = esc:kill(p.test_string2(), 'test')
 end
 return os.clock(esc)
end
```

0.04214

when repeating the following line 500 times in a template:

Vorlage:Code

0.767

All times in seconds. The module time x500 was calculated when you loaded this doc page (normally between 0.02 and 0.07). The template time x500 was recorded on Jan 15, 2015.

Examples

Template

Modul Diskussion:Escape/testcases

Module

Here's some sample output from the debug consol below the module editor:

Vorlage:Blue
test, \test, \7b0447btest\\ \\ \\\\

Vorlage:Blue
test, 5c01165cest, 5c0555cb0447btest5c0925c 5c0925c 5c0925c5c092
5c

Vorlage:Blue
test, 5c01165cest, 5c0555cb0447btest5c0925c 5c0925c 5c0925c5c092
5c

Vorlage:Blue
test, test, 7b0447btest\ \ \\

Vorlage:Blue
true

Vorlage:Blue Vorlage:Green
test, 5c01165cest, 5c0555cb0447btest5c0925c 5c0925c 5c0925c5c092
5c

Vorlage:Blue
test, \test, \,test\\ \\ \\\\

Vorlage:Blue
test, test, 7b0447btest\ \ \\

Vorlage:Blue
test, test, {,test\ \ \\

Vorlage:Blue
false

Vorlage:Blue
true

Vorlage:Blue
test { test {\{ test, \test, \{,test\ \ \ {\

Vorlage:Blue
test test { test, test, {,test \

Vorlage:Blue
true

```
local escape = {
        char = function(self, chr, args)
                args = args or {}
                local safe = args.safeChr or string.char(13)
                chr = tostring(chr or '\\')
                self[1] = ('%s0%%s%s'):format(
                        ('%x%s%s'):format(chr:byte(), safe, safe),
                        ('%s%x'):format(safe, chr:byte())
                )
```

```
                if not self[self[1]] then
                        self[self[1]] = {
                                char = chr,
                                text = ('%s(.)'):format(chr),
                                undo = self[1]:format'(%d+)'
                        }
                end
                return args.text and self:text(args.text)
                        or args.undo and self:undo(args.undo, chr)
                        or args.kill and self:kill(args.kill)
                        or self
        end,
        exec = function(self, text, mode, newEscape)
                local target = self[self[1] or self:char() and self[1]]
                for v in text:gfind(target[mode]) do
                        text = text:gsub(
                                mode == 'text' and
                                        ('%s%s'):format(target.char, v:gsub('%W',
                                        or self[1]:format(v),
                                mode == 'text' and
                                        self[1]:format(v:byte())
                                        or (newEscape or '') .. v:char()
                        )
                end
                return text
        end,
        text = function(self, text)
                return self:exec(type(text) == 'table' and text[1] or text, 'text
        end,
        undo = function(self, text, newEscape)
                if type(text) == 'table' then
                        text, newEscape = unpack(text)
                end
                return self:exec(text, 'undo', newEscape)
        end,
        kill = function(self, text, chars, newEscape)
                if type(text) == 'table' then
                        text, chars, newEscape = unpack(text)
                end
                return self:undo(self:text(text):gsub(chars or '', ''), newEscape
        end
}

function escape.main(frame)
        local args, family = {}, {frame:getParent(), frame}
        for f = 1, 2 do
                for k, v in pairs(family[f] and family[f].args or {}) do
                        args[k] = args[k] or v:match('^%s*(.-)%s*$')
                end
        end
        if args.mode == 'char' then
                return escape:char(args.char or args[2], args)
        end
        return escape[args.mode](escape:char(args.char), args)
end

return escape
```