

Package ‘cppcheckR’

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Type Package

Title Check 'C' and 'C++' Files using 'Cppcheck'

Version 1.0.0

Description Allow to run 'Cppcheck' (<<https://cppcheck.sourceforge.io/>>) on 'C' and 'C++' files with a 'R' command or a 'RStudio' addin. The report appears in the 'RStudio' viewer pane as a formatted 'HTML' file. It is also possible to get this report with a 'shiny' application. 'Cppcheck' can spot many error types and it can also give some recommendations on the code.

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URL <https://github.com/stla/cppcheckR>

BugReports <https://github.com/stla/cppcheckR/issues>

Imports htmlwidgets, rmarkdown, rstudioapi, shiny, utils, V8, xml2

Suggests htmltools, shinyAce, shinybusy, shinyFiles, shinyjqui, shinyWidgets

Encoding UTF-8

RoxygenNote 7.2.0

SystemRequirements cppcheck

NeedsCompilation no

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cppcheckR	<i>Check a C/C++ file or a folder</i>
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Description

HTML widget which runs **Cppcheck**.

Usage

```
cppcheckR(  
  path,  
  std = NULL,  
  def = NULL,  
  undef = NULL,  
  checkConfig = FALSE,  
  height = NULL,  
  elementId = NULL  
)
```

Arguments

path	path to a C/C++ file or to a folder containing C/C++ files
std	the standard, one of "c89", "c99", "c11", "c++03", "c++11", "c++14", "c++17", "c++20"; if NULL, you will be prompted to select it
def	character vector of symbols you want to define, e.g. "__cplusplus" or "DEBUG=1"; if NULL, you will be prompted to enter them; set def=NA if you don't want to define any symbol
undef	character vector of symbols you want to undefine; if NULL, you will be prompted to enter them; set undef=NA if you don't want to undefine any symbol
checkConfig	Boolean, whether to run Cppcheck with the option --check-config; this tells you which header files are missing
height	height in pixels (defaults to automatic sizing)
elementId	an id for the widget, this is usually useless

Value

A htmlwidget object.

Examples

```
example <- function(file){
  filepath <- system.file("cppexamples", file, package = "cppcheckR")
  lines <- readLines(filepath)
  print(cppcheckR(filepath, std = "c++03", def = NA, undef = NA))
  message(file, ":")
  cat(paste0(format(seq_along(lines)), ". ", lines), sep = "\n")
}
example("memleak.cpp")
example("outofbounds.cpp")
example("unusedvar.cpp")
example("useless.cpp")
```

cppcheckR-shiny

Shiny bindings for cppcheckR

Description

Output and render functions for using cppcheckR within Shiny applications and interactive Rmd documents.

Usage

```
cppcheckROutput(outputId, width = "100%", height = "400px")
```

```
renderCppcheckR(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

outputId	output variable to read from
width, height	a valid CSS unit (like "100%", "400px", "auto") or a number, which will be coerced to a string and have "px" appended
expr	an expression that generates a <code>'cppcheckR'</code> widget
env	the environment in which to evaluate expr
quoted	logical, whether expr is a quoted expression (with <code>quote()</code>)

Value

cppcheckROutput returns an output element that can be included in a Shiny UI definition, and renderCppcheckRR returns a shiny.render.function object that can be included in a Shiny server definition.

Description

Render a formatted JSON string in HTML.

Usage

```
json2html(  
  json,  
  outfile = NULL,  
  pandoc = FALSE,  
  style = paste0("background-color: #051C55; color: #E76900; ",  
    "font-size: 15px; font-weight: bold; margin: 0; ",  
    "white-space: pre-wrap; outline: #051C55 solid 10px;"),  
  keyColor = "crimson",  
  numberColor = "chartreuse",  
  stringColor = "lightcoral",  
  trueColor = "#00cc00",  
  falseColor = "#ff8080",  
  nullColor = "cornflowerblue"  
)
```

Arguments

json	a JSON string or a path to a JSON file
outfile	either a path to a html file, or NULL if you don't want to write the output to a file
pandoc	Boolean, whether to use pandoc
style	some CSS for the container, only if pandoc=FALSE
keyColor	color of the keys, only if pandoc=FALSE
numberColor	color of the numbers, only if pandoc=FALSE
stringColor	color of the strings, only if pandoc=FALSE
trueColor	color of the true keyword, only if pandoc=FALSE
falseColor	color of the false keyword, only if pandoc=FALSE
nullColor	color of the null keyword, only if pandoc=FALSE

Value

Nothing if outfile is not NULL, otherwise the HTML as a character string.

Examples

```
library(cppcheckR)
xml <- system.file("extdata", "order-schema.xml", package = "xml2")
json <- xml2json(xml)
html <- json2html(json)
library(htmltools)
if(interactive()){
  browsable(HTML(html))
}
# with pandoc
html <- json2html(json, pandoc = TRUE)
if(interactive()){
  browsable(HTML(html))
}
```

shinyCppcheck	<i>Shiny application to check C/C++</i>
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Description

Run a shiny application to check C/C++ files.

Usage

```
shinyCppcheck()
```

Value

Nothing, this just launches a Shiny app.

Note

The packages listed in the **Suggests** field of the package description are required.

xml2json	<i>XML to JSON</i>
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Description

Convert XML to a JSON string.

Usage

```
xml2json(
  xml,
  spaces = 2L,
  linebreaks = FALSE,
  replacer = NULL,
  attributeNamePrefix = "@_",
  textNodeName = "#text",
  ignoreAttributes = FALSE,
  ignoreNameSpace = FALSE,
  parseNodeValue = TRUE,
  parseAttributeValue = TRUE,
  trimValues = TRUE
)
```

Arguments

<code>xml</code>	either a XML file or some XML given as a character string
<code>spaces</code>	an integer, the indentation
<code>linebreaks</code>	Boolean, whether to break the lines in the JSON string when there are some linebreaks; this generates an invalid JSON string
<code>replacer</code>	character vector, the body of the second argument of <code>JSON.stringify</code> (the replacer function), or <code>NULL</code>
<code>attributeNamePrefix</code>	prefix for the attributes
<code>textNodeName</code>	name of text nodes, which appear for nodes which have both a text content and some attributes
<code>ignoreAttributes</code>	Boolean, whether to ignore the attributes
<code>ignoreNameSpace</code>	Boolean, whether to ignore the namespaces
<code>parseNodeValue</code>	Boolean, whether to parse the node values to numbers if possible
<code>parseAttributeValue</code>	Boolean, whether to parse the attribute values to numbers if possible
<code>trimValues</code>	Boolean, whether to trim the values

Value

A JSON string.

Examples

```
xml <- system.file("extdata", "order-schema.xml", package = "xml2")
cat(xml2json(xml))
#
js <- c(
```

```
    'if(key === "@_type"){',  
    '  return undefined;',  
    '} else if(key === "@_name"){',  
    '  return value.toUpperCase();',  
    '}',  
    'return value;'  
  )  
cat(xml2json(xml, linebreaks = TRUE, replacer = js))
```

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