Package: kwb.umberto (via r-universe)

August 31, 2024

Title R package supporting UMERTO LCA at KWB

Version 0.2.0

Description Helper functions for data import, aggregation and visualisation of UMBERTO (https://www.ifu.com/umberto/) model output.

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URL https://github.com/KWB-R/kwb.umberto

BugReports https://github.com/KWB-R/kwb.umberto/issues

Imports data.table, dplyr, ggforce, ggplot2, janitor, magrittr, openxlsx, readr, tidyr, tidyselect

Suggests covr, knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

ByteCompile true

Encoding UTF-8

LazyData true

RoxygenNote 7.2.2

Config/testthat/edition 3

Repository https://kwb-r.r-universe.dev

RemoteUrl https://github.com/KWB-R/kwb.umberto

RemoteRef HEAD

RemoteSha f47902b383f3801241e2e169312fed0b9311ba10

Contents

`create_pivot_list` *Create pivot list*

Description

Create pivot list

Usage

```
create_pivot_list(pivot_data, arrange_cols = "process")
```

Arguments

`pivot_data`	privot data as retrieved from function pivot_data()
`arrange_cols`	columns used for arranging the data (default: "process")

Value

a list of results, where each element contains the result table for one lci_method

Examples

```
zipfile <- system.file("extdata/umberto-nxt_v7.1.0.13.503/Beispiel_Auswertung.zip",
package = "kwb.umberto")
umberto7_csv_dir <- file.path(tempdir(), "Beispiel_Auswertung")
unzip(zipfile, exdir = umberto7_csv_dir)
umberto7_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto7_csv_dir)
umberto7_data_grouped <- kwb.umberto::group_data(umberto7_rawdata)
umberto7_data_pivot <- kwb.umberto::pivot_data(umberto7_data_grouped)
umberto7_data_pivot_list <- kwb.umberto::create_pivot_list(umberto7_data_pivot)
head(umberto7_data_pivot_list)

umberto10_csv_dir <- system.file("extdata/umberto-lca+_v10.1.0.3.146",
package = "kwb.umberto")
umberto10_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto10_csv_dir)
umberto10_data_grouped <- kwb.umberto::group_data(umberto10_rawdata)
umberto10_data_pivot <- kwb.umberto::pivot_data(umberto10_data_grouped)
umberto10_data_pivot_list <- kwb.umberto::create_pivot_list(umberto10_data_pivot)
head(umberto10_data_pivot_list)
```

group_data *Group data*

Description

Group data

Usage

```
group_data(
  raw_data,
  grouping_paras = c("lci_method", "model", "process", "unit"),
  grouping_function = "sum",
  summarise_col = "quantity"
)
```

Arguments

raw_data	as retrieved by function import_rawdata()
grouping_paras	cleaned column names used for grouping. (default: c("lci_method", "model", "process", "unit"))
grouping_function	R function used for grouping (default: "sum")
summarise_col	column name used for summarising (default: "quantity"), i.e. for which the "grouping_function" should be applied

Value

aggregated data according

Examples

```
zipfile <- system.file("extdata/umberto-nxt_v7.1.0.13.503/Beispiel_Auswertung.zip",
package = "kwb.umberto")
umberto7_csv_dir <- file.path(tempdir(), "Beispiel_Auswertung")
unzip(zipfile, exdir = umberto7_csv_dir)
umberto7_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto7_csv_dir)
umberto7_data_grouped <- kwb.umberto::group_data(umberto7_rawdata)
head(umberto7_data_grouped )

umberto10_csv_dir <- system.file("extdata/umberto-lca+_v10.1.0.3.146",
package = "kwb.umberto")
umberto10_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto10_csv_dir)
umberto10_data_grouped <- kwb.umberto::group_data(umberto10_rawdata)
head(umberto10_data_grouped)
```

import_rawdata *Import rawdata*

Description

Import rawdata

Usage

```
import_rawdata(csv_dir, sep = ";", ...)
```

Arguments

csv_dir	path to directory with .csv files
sep	Single character used to separate fields within a record (default: in GERMAN format, i.e. sep = ";")
...	further arguments passed to either readr::read_csv2 (default for sep == ';') or readr::read_csv (if sep == ',')

Value

data.frame with all imported raw data

Examples

```
zipfile <- system.file("extdata/umberto-nxt_v7.1.0.13.503/Beispiel_Auswertung.zip",
package = "kwb.umberto")
umberto7_csv_dir <- file.path(tempdir(), "Beispiel_Auswertung")
unzip(zipfile, exdir = umberto7_csv_dir)
umberto7_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto7_csv_dir)
head(umberto7_rawdata)

umberto10_csv_dir <- system.file("extdata/umberto-lca+_v10.1.0.3.146",
package = "kwb.umberto")
umberto10_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto10_csv_dir)
head(umberto10_rawdata)
```

pivot_data *Make pivot data*

Description

Make pivot data

Usage

```
pivot_data(
  rawdata_grouped,
  cols_to_ignore = "unit",
  key_col = "model",
  value_col = "quantity_sum"
)
```

Arguments

rawdata_grouped	grouped rawdata as retrieved by function group_data()
cols_to_ignore	column names not to be considered for transforming the data from the "list" to the "wide" format with tidyr::spread() (default: "unit")
key_col	column name containing the key for transforming the data from the "list" to the "wide" format with tidyr::spread() (default: "model")
value_col	column name containing the values that will be used during transforming the data from the "list" to the "wide" format with tidyr::spread() (default: "quantity_sum")

Value

data.frame with the aggregated results for all different"lci_method"

Examples

```
zipfile <- system.file("extdata/umberto-nxt_v7.1.0.13.503/Beispiel_Auswertung.zip",
package = "kwb.umberto")
umberto7_csv_dir <- file.path(tempdir(), "Beispiel_Auswertung")
unzip(zipfile, exdir = umberto7_csv_dir)
umberto7_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto7_csv_dir)
umberto7_data_grouped <- kwb.umberto::group_data(umberto7_rawdata)
umberto7_data_pivot <- kwb.umberto::pivot_data(umberto7_data_grouped)
head(umberto7_data_pivot)

umberto10_csv_dir <- system.file("extdata/umberto-lca+_v10.1.0.3.146",
package = "kwb.umberto")
umberto10_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto10_csv_dir)
umberto10_data_grouped <- kwb.umberto::group_data(umberto10_rawdata)
umberto10_data_pivot <- kwb.umberto::pivot_data(umberto10_data_grouped)
head(umberto10_data_pivot)
```

plot_results *Plot results*

Description

Plot results

Usage

```
plot_results(
  grouped_data,
  x_col = "model",
  y_col = "quantity_sum",
  fill_col = "process"
)
```

Arguments

grouped_data	data.frame with grouped rawdata as retrieved by function group_data()
x_col	column name to be used for plotting on x-axis (default: "model")
y_col	column name to be used for plotting on y-axis (default: "quantity_sum")
fill_col	column name to be used for filling (default: "process")

Value

simple plots for all different groups

Examples

```
zipfile <- system.file("extdata/umberto-nxt_v7.1.0.13.503/Beispiel_Auswertung.zip",
package = "kwb.umberto")
umberto7_csv_dir <- file.path(tempdir(), "Beispiel_Auswertung")
unzip(zipfile, exdir = umberto7_csv_dir)
umberto7_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto7_csv_dir)
umberto7_data_grouped <- kwb.umberto::group_data(umberto7_rawdata)
kwb.umberto::plot_results(grouped_data = umberto7_data_grouped)

umberto10_csv_dir <- system.file("extdata/umberto-lca+_v10.1.0.3.146",
package = "kwb.umberto")
umberto10_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto10_csv_dir)
umberto10_data_grouped <- kwb.umberto::group_data(umberto10_rawdata)
kwb.umberto::plot_results(grouped_data = umberto10_data_grouped)
```

write_xlsx *Write results to EXCEL*

Description

Write results to EXCEL

Usage

```
write_xlsx(data_pivot_list, path = "results.xlsx")
```

Arguments

data_pivot_list	a list as retrieved by function create_pivot_list()
path	relative or full path to be used for exporting the results to EXCEL (default: "results.xlsx")

Value

writes results in EXCEL file defined in "path", where each sheet

Examples

```
zipfile <- system.file("extdata/umberto-nxt_v7.1.0.13.503/Beispiel_Auswertung.zip",
package = "kwb.umberto")
umberto7_csv_dir <- file.path(tempdir(), "Beispiel_Auswertung")
unzip(zipfile, exdir = umberto7_csv_dir)
umberto7_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto7_csv_dir)
umberto7_data_grouped <- kwb.umberto::group_data(umberto7_rawdata)
umberto7_data_pivot <- kwb.umberto::pivot_data(umberto7_data_grouped)
umberto7_data_pivot_list <- kwb.umberto::create_pivot_list(umberto7_data_pivot)
export_path <- file.path(getwd(), "umberto7_results.xlsx")
print(sprintf("Exporting aggregated results to %s", export_path))
write_xlsx(umberto7_data_pivot_list, path = export_path)

umberto10_csv_dir <- system.file("extdata/umberto-lca+_v10.1.0.3.146",
package = "kwb.umberto")
umberto10_rawdata <- kwb.umberto::import_rawdata(csv_dir = umberto10_csv_dir)
umberto10_data_grouped <- kwb.umberto::group_data(umberto10_rawdata)
umberto10_data_pivot <- kwb.umberto::pivot_data(umberto10_data_grouped)
umberto10_data_pivot_list <- kwb.umberto::create_pivot_list(umberto10_data_pivot)
export_path <- file.path(getwd(), "umberto10_results.xlsx")
print(sprintf("Exporting aggregated results to %s", export_path))
write_xlsx(umberto10_data_pivot_list, path = export_path)
```

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