Package 'MeasurementDiagnostics'

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Type Package

Title Diagnostics for Lists of Codes Based on Measurements

Version 0.0.1

Description Diagnostics of list of codes based on concepts from the domains measurement and observation. This package works for data mapped to the Observational Medical Outcomes Partnership Common Data Model.

Imports cli, CohortConstructor (>= 0.4.0), DBI, dplyr, magrittr, omopgenerics (>= 1.2.0), PatientProfiles (>= 1.4.0), purrr, rlang, tidyr

Suggests CDMConnector (>= 2.0.0), CodelistGenerator (>= 3.5.0), visOmopResults (>= 1.0.2), duckdb, knitr, omock (>= 0.4.0), rmarkdown, testthat, ggplot2, gt, flextable, RPostgres, lubridate, odbc

Depends R (>= 4.1)

License Apache License (>= 2)

Encoding UTF-8

RoxygenNote 7.3.2

VignetteBuilder knitr

NeedsCompilation no

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Contents

`mockMeasurementDiagnostics` *Function to create a mock cdm reference.*

Description

Creates an example dataset that can be used to show how the package works

Usage

```
mockMeasurementDiagnostics(
  nPerson = 100,
  con = DBI::dbConnect(duckdb::duckdb()),
  writeSchema = "main",
  seed = 111
)
```

Arguments

`nPerson`	number of people in the cdm.
`con`	A DBI connection to create the cdm mock object.
`writeSchema`	Name of an schema on the same connection with writing permissions.
`seed`	seed to use when creating the mock data.

Value

cdm object

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
cdm
```

plotMeasurementTimings *Plot summariseMeasurementTiming results.*

Description

Plot summariseMeasurementTiming results.

Usage

```
plotMeasurementTimings(
  result,
  x = "codelist_name",
  plotType = "boxplot",
  timeScale = "days",
  facet = visOmopResults::strataColumns(result),
  colour = "cdm_name"
)
```

Arguments

result	A summarised_result object.
x	Columns to use as horizontal axes. See options with 'visOmopResults::plotColumns(result)'.
plotType	Type of desired formatted table, possibilities are "boxplot" and "densityplot".
timeScale	Time scale to show, it can be "days" or "years".
facet	Columns to facet by. See options with 'visOmopResults::plotColumns(result)'. Formula input is also allowed to specify rows and columns.
colour	Columns to color by. See options with 'visOmopResults::plotColumns(result)'.

Value

A ggplot.

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
              cdm = cdm,
              codes = list("test_codelist" = c(3001467L, 45875977L))
           )
plotMeasurementTimings(result)
CDMConnector::cdmDisconnect(cdm)
```

`plotMeasurementValueAsConcept` *Plot summariseMeasurementTiming results.*

Description

Plot summariseMeasurementTiming results.

Usage

```
plotMeasurementValueAsConcept(
  result,
  x = "count",
  y = "codelist_name",
  facet = c("cdm_name"),
 colour = c("concept_name", "variable_level", visOmopResults::strataColumns(result))
)
```

Arguments

`result`	A summarised_result object.
`x`	Columns to use as horizontal axes. See options with 'visOmopResults::plotColumns(result)'.
`y`	Columns to use as horizontal axes. See options with 'visOmopResults::plotColumns(result)'.
`facet`	Columns to facet by. See options with 'visOmopResults::plotColumns(result)'. Formula input is also allowed to specify rows and columns.
`colour`	Columns to color by. See options with 'visOmopResults::plotColumns(result)'.

Value

A ggplot.

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
              cdm = cdm,
              bySex = TRUE,
              codes = list("test_codelist" = c(3001467L, 45875977L)))
plotMeasurementValueAsConcept(result)
CDMConnector::cdmDisconnect(cdm)
```

plotMeasurementValueAsNumeric *Plot summariseMeasurementTiming results.*

Description

Plot summariseMeasurementTiming results.

Usage

```
plotMeasurementValueAsNumeric(
  result,
  x = c("unit_concept_name"),
  facet = c("codelist_name", "concept_name"),
  colour = c("cdm_name", visOmopResults::strataColumns(result))
)
```

Arguments

result	A summarised_result object.
x	Columns to use as horizontal axes. See options with 'visOmopResults::plotColumns(result)'.
facet	Columns to facet by. See options with 'visOmopResults::plotColumns(result)'. Formula input is also allowed to specify rows and columns.
colour	Columns to color by. See options with 'visOmopResults::plotColumns(result)'.

Value

A ggplot.

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
              cdm = cdm,
              bySex = TRUE,
              codes = list("test_codelist" = c(3001467L, 45875977L)))
plotMeasurementValueAsNumeric(result)
CDMConnector::cdmDisconnect(cdm)
```

summariseCohortMeasurementUse *Diagnostics of a codelist of measurement codes within a cohort*

Description

Diagnostics of a codelist of measurement codes within a cohort

Usage

```
summariseCohortMeasurementUse(
  codes,
  cohort,
  timing = "during",
  byConcept = TRUE,
  byYear = FALSE,
  bySex = FALSE,
  ageGroup = NULL,
  dateRange = as.Date(c(NA, NA)),
  checks = c("measurement_timings", "measurement_value_as_numeric",
    "measurement_value_as_concept")
)
```

Arguments

codes	A codelist of measurement/observation codes for which to perform diagnostics.
cohort	A cohort in which to perform the diagnostics of the measurement codes provided.
timing	Three options: 1) "any" if the interest is on measurement recorded any time, 2) "during", if interested in measurements while the subject is in the cohort (or in observation if cohort = NULL), and 3) "cohort_start_date" for measurements occurring at cohort start date (or at "observation_period_start_date if cohort = NULL).
byConcept	TRUE or FALSE. If TRUE code use will be summarised by concept.
byYear	TRUE or FALSE. If TRUE code use will be summarised by year.
bySex	TRUE or FALSE. If TRUE code use will be summarised by sex.
ageGroup	If not NULL, a list of ageGroup vectors of length two.
dateRange	Two dates. The first indicating the earliest measurement date and the second indicating the latest possible measurement date.
checks	Diagnostics to run. Options are: "measurement_timing", "measurement_value_as_numeric", and "measurement_value_as_concept".

Value

A summarised result

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseCohortMeasurementUse(
  codes = list("test_codelist" = c(3001467L, 45875977L)),
  cohort = cdm$my_cohort, timing = "cohort_start_date"
)
CDMConnector::cdmDisconnect(cdm = cdm)
```

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summariseMeasurementUse

Diagnostics of a codelist of measurement codes in the database

---

Description

Diagnostics of a codelist of measurement codes in the database

Usage

```
summariseMeasurementUse(
  cdm,
  codes,
  byConcept = TRUE,
  byYear = FALSE,
  bySex = FALSE,
  ageGroup = NULL,
  dateRange = as.Date(c(NA, NA)),
  checks = c("measurement_timings", "measurement_value_as_numeric",
    "measurement_value_as_concept")
)
```

Arguments

cdm	A reference to the cdm object.
codes	A codelist of measurement/observation codes for which to perform diagnostics.
byConcept	TRUE or FALSE. If TRUE code use will be summarised by concept.
byYear	TRUE or FALSE. If TRUE code use will be summarised by year.
bySex	TRUE or FALSE. If TRUE code use will be summarised by sex.
ageGroup	If not NULL, a list of ageGroup vectors of length two.
dateRange	Two dates. The first indicating the earliest measurement date and the second indicating the latest possible measurement date.
checks	Diagnostics to run. Options are: "measurement_timing", "measurement_value_as_numeric", and "measurement_value_as_concept".

Value

A summarised result

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
  cdm = cdm, codes = list("test_codelist" = c(3001467L, 45875977L))
)
CDMConnector::cdmDisconnect(cdm = cdm)
```

---

tableMeasurementTimings

Format a measurement_timings object into a visual table

Description

Format a measurement_timings object into a visual table

Usage

```
tableMeasurementTimings(
  result,
  type = "gt",
  header = c(visOmopResults::strataColumns(result)),
  groupColumn = c("codelist_name"),
  settingsColumn = character(),
  hide = c("variable_level"),
  style = "default",
  .options = list()
)
```

Arguments

result	A summarised_result object.
type	Type of table. Check supported types with 'visOmopResults::tableType()'.
header	Columns to use as header. See options with 'visOmopResults::tableColumns(result)'.
groupColumn	Columns to group by. See options with 'visOmopResults::tableColumns(result)'.
settingsColumn	Columns from settings to include in results. See options with 'visOmopResults::settingsColumns(result)'.
hide	Columns to hide from the visualisation. See options with 'visOmopResults::tableColumns(result)'.

style	Named list that specifies how to style the different parts of the table generated. It can either be a pre-defined style ("default" or "darwin" - the latter just for gt and flextable), NULL to get the table type default style, or custom. Keep in mind that styling code is different for all table styles. To see the different styles use visOmopResults::tableStyle().
.options	A named list with additional formatting options. ‘visOmopResults::tableOptions()‘ shows allowed arguments and their default values.

Value

A formatted table

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
              cdm = cdm,
              codes = list("test_codelist" = c(3001467L, 45875977L)))
tableMeasurementTimings(result)
CDMConnector::cdmDisconnect(cdm = cdm)
```

---

tableMeasurementValueAsConcept

Format a measurement_timings object into a visual table

Description

Format a measurement_timings object into a visual table

Usage

```
tableMeasurementValueAsConcept(
  result,
  type = "gt",
  header = c(visOmopResults::strataColumns(result)),
  groupColumn = c("codelist_name"),
  settingsColumn = character(),
  hide = character(),
  style = "default",
  .options = list()
)
```

Arguments

result	A summarised_result object.
type	Type of table. Check supported types with 'visOmopResults::tableType()'.
header	Columns to use as header. See options with 'visOmopResults::tableColumns(result)'.
groupColumn	Columns to group by. See options with 'visOmopResults::tableColumns(result)'.
settingsColumn	Columns from settings to include in results. See options with 'visOmopResults::settingsColumns(result)'.
hide	Columns to hide from the visualisation. See options with 'visOmopResults::tableColumns(result)'.
style	Named list that specifies how to style the different parts of the table generated. It can either be a pre-defined style ("default" or "darwin" - the latter just for gt and flextable), NULL to get the table type default style, or custom. Keep in mind that styling code is different for all table styles. To see the different styles use visOmopResults::tableStyle().
.options	A named list with additional formatting options. 'visOmopResults::tableOptions()' shows allowed arguments and their default values.

Value

A formatted table

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
              cdm = cdm,
              codes = list("test_codelist" = c(3001467L, 45875977L)))
tableMeasurementValueAsConcept(result)
CDMConnector::cdmDisconnect(cdm = cdm)
```

---

tableMeasurementValueAsNumeric

Format a measurement_timings object into a visual table

Description

Format a measurement_timings object into a visual table

Usage

```
tableMeasurementValueAsNumeric(
  result,
  type = "gt",
  header = c(visOmopResults::strataColumns(result)),
```

```
  groupColumn = c("codelist_name"),
  settingsColumn = character(),
  hide = c("variable_name", "variable_level"),
  style = "default",
  .options = list()
)
```

Arguments

result	A summarised_result object.
type	Type of table. Check supported types with 'visOmopResults::tableType()'.
header	Columns to use as header. See options with 'visOmopResults::tableColumns(result)'.
groupColumn	Columns to group by. See options with 'visOmopResults::tableColumns(result)'.
settingsColumn	Columns from settings to include in results. See options with 'visOmopResults::settingsColumns(result)'.
hide	Columns to hide from the visualisation. See options with 'visOmopResults::tableColumns(result)'.
style	Named list that specifies how to style the different parts of the table generated. It can either be a pre-defined style ("default" or "darwin" - the latter just for gt and flextable), NULL to get the table type default style, or custom. Keep in mind that styling code is different for all table styles. To see the different styles use visOmopResults::tableStyle().
.options	A named list with additional formatting options. 'visOmopResults::tableOptions()' shows allowed arguments and their default values.

Value

A formatted table

Examples

```
library(MeasurementDiagnostics)
cdm <- mockMeasurementDiagnostics()
result <- summariseMeasurementUse(
              cdm = cdm,
              codes = list("test_codelist" = c(3001467L, 45875977L)))
tableMeasurementValueAsNumeric(result)
CDMConnector::cdmDisconnect(cdm = cdm)
```

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