Package 'ClinicalCharacteristics'

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Title Runs Clinical Characteristics for OHDSI Studies

Version 1.0.0

Description A tool to characterize cohorts using a table shell approach.

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Imports cli,
crayon,
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Capr,
DatabaseConnector,
dplyr,
glue,
readr,
tibble,
tidyr,
here,
lubridate,
monaco,
reactable,
methods

Additional_repositories https://OHDSI.github.io/drat

Suggests knitr,
rmarkdown

VignetteBuilder knitr

R topics documented:

`addDefaultEthnicityLineItems` *Convenience function to add default ethnicity line items*

Description

Convenience function to add default ethnicity line items

Usage

```
addDefaultEthnicityLineItems()
```

Value

a list of line items for default ethnicity categories (hispanic, not hispanic, not reported)

addDefaultGenderLineItems

Convenience function to add male and female line items for demographic characterization

Description

Convenience function to add male and female line items for demographic characterization

Usage

```
addDefaultGenderLineItems()
```

Value

a list of two line items for male and female gender

addDefaultRaceLineItems

Convenience function to add default race line items

Description

Convenience function to add default race line items

Usage

```
addDefaultRaceLineItems()
```

Value

a list of line items for default race categories (white, black, asian, not reported)

age10yrGrp

Create a breaks Strategy object for age into 10 year groups

Description

Create a breaks Strategy object for age into 10 year groups

Usage

```
age10yrGrp()
```

Value

A BreaksStreategy object with defaults assumptions for 10 year age groups

age5yrGrp *Create a breaks Strategy object for age into 5 year groups*

Description

Create a breaks Strategy object for age into 5 year groups

Usage

```
age5yrGrp()
```

Value

A BreaksStreategy object with defaults assumptions for 5 year age groups

ageChar *Create a age statistic*

Description

Create a age statistic

Usage

```
ageChar(breaks = NULL)
```

Arguments

breaks	a breaksStrategy object dictating how to classify counts into categories

Value

A DemographicAge Statistic class object

anyCountBreaksStat *Create a count stat with breaks where any occurrence is valid.*

Description

Create a count stat with breaks where any occurrence is valid.

Usage

```
anyCountBreaksStat(breaks)
```

Arguments

breaks	a breaksStrategy object dictating how to classify counts into categories. If null then this defaults to a continuous distribution

Value

A stat object breaks

`anyCountCtsStat` *Create a count stat where any occurrence is valid.*

Description

Create a count stat where any occurrence is valid.

Usage

```
anyCountCtsStat()
```

Value

A stat object continuousDistribution

`anyPresenceStat` *Create a presence stat where any occurrence is valid*

Description

Create a presence stat where any occurrence is valid

Usage

```
anyPresenceStat()
```

Value

A presence stat object

anyTimeToFirstBreaksStat *Create a time to stat with breaks where any occurrence is valid*

Description

Create a time to stat with breaks where any occurrence is valid

Usage

```
anyTimeToFirstBreaksStat(breaks)
```

Arguments

breaks	a breaksStrategy object dictating how to classify counts into categories. If null then this defaults to a continuous distribution

Value

A stat object breaks

anyTimeToFirstCtsStat *Create a time to stat where any occurrence is valid*

Description

Create a time to stat where any occurrence is valid

Usage

```
anyTimeToFirstCtsStat()
```

Value

A stat object continuousDistribution

createCohortInfo *Create a CohortInfo object for a cohort and set its attributes*

Description

Create a CohortInfo object for a cohort and set its attributes

Usage

```
createCohortInfo(id, name)
```

Arguments

id	The ID of the cohort
name	The name of the cohort

Value

A CohortInfo object

createCohortLineItem *Create a cohort line item and set its attributes*

Description

Create a cohort line item and set its attributes

Usage

```
createCohortLineItem(
  sectionLabel = NA_character_,
  covariateCohort,
  cohortTable,
  timeInterval,
  statistic
)
```

Arguments

timeInterval	The TimeInterval object used for the line item
statistic	The Statistic object to be used to evaluate the line item
name	(OPTIONAL) The name of the line item (if not provided, the name will be set to the cohort name from the CohortInfo object)
cohort	A CohortInfo object

Value

A CohortLineItem object

createCohortLineItemBatch

Create a batch of cohort line items from a list of CohortInfo objects.

Description

The name of each line item will be set to the name of its cohort from the CohortInfo object.

Usage

```
createCohortLineItemBatch(
  sectionLabel,
  covariateCohorts,
  cohortTable,
  statistic,
  timeIntervals
)
```

Arguments

sectionLabel	The name of the cohort batch
statistic	The Statistic object to be used to evaluate the line items
timeIntervals	A list of TimeInterval class objects
cohorts	A list of CohortInfo objects

Value

A list of CohortLineItem objects

createConceptSetLineItem

Create a concept set line item and set its attributes

Description

Create a concept set line item and set its attributes

Usage

```
createConceptSetLineItem(
  sectionLabel = NA_character_,
  domain,
  conceptSet,
  timeInterval,
  statistic,
  sourceConceptSet = NULL,
  typeConceptIds = c(),
  visitOccurrenceConceptIds = c()
)
```

Arguments

domain	The domain of the concept set (must be one of 'Condition', 'Drug', 'Procedure', 'Observation', 'Measurement', 'Device')
conceptSet	The Capr concept set object
timeInterval	The Time Interval object used for the line item
statistic	The Statistic object to be used to evaluate the line item
sourceConceptSet	(OPTIONAL) A Capr concept set of source concept IDs to use to limit the concept set
typeConceptIds	(OPTIONAL) A list of type concept IDs to use to limit the concept set
visitOccurrenceConceptIds	(OPTIONAL) A list of visit occurrence concept IDs to use to limit the concept set
name	(OPTIONAL) The name of the line item (if not provided, the name will be set to the Capr concept set name)

Value

A ConceptSetLineItem object

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createConceptSetLineItemBatch

Create a batch of concept set line items from a list of Capr concept sets.

Description

The name of each line item will be set to the name of its Capr concept set. All line items will use the same statistic, domain, type concepts, and visit concepts. It is not possible to specify source concept IDs.

Usage

```
createConceptSetLineItemBatch(
  sectionLabel,
  domain,
  conceptSets,
  timeIntervals,
  statistic,
  typeConceptIds = c(),
  visitOccurrenceConceptIds = c()
)
```

Arguments

domain	The domain of the concept sets (must be one of 'Condition', 'Drug', 'Procedure', 'Observation', 'Measurement', 'Device')
conceptSets	A list of concept set Capr objects

timeIntervals	A list of TimeInterval class objects
statistic	The Statistic object to be used to evaluate the line items
typeConceptIds	(OPTIONAL) A list of type concept IDs to use to limit the concept set
visitOccurrenceConceptIds	(OPTIONAL) A list of visit occurrence concept IDs to use to limit the concept set
name	The name of the concept set batch

Value

A list of ConceptSetLineItem objects

`createDemographicLineItem` *Create a demographic line item and set its attributes*

Description

Create a demographic line item and set its attributes

Usage

```
createDemographicLineItem(statistic)
```

Arguments

statistic	The Statistic object to be used to evaluate the line item

Value

A DemographicLineItem object

`createExecutionSettings` *Create an ExecutionSettings object and set its attributes*

Description

Create an ExecutionSettings object and set its attributes

Usage

```
createExecutionSettings(
  connectionDetails,
  connection = NULL,
  cdmDatabaseSchema,
  workDatabaseSchema,
  tempEmulationSchema,
  targetCohortTable,
  cdmSourceName
)
```

Arguments

connectionDetails	A DatabaseConnector connectionDetails object (optional if connection is specified)
connection	A DatabaseConnector connection object (optional if connectionDetails is specified)
cdmDatabaseSchema	The schema of the OMOP CDM database
workDatabaseSchema	The schema to which results will be written
tempEmulationSchema	Some database platforms like Oracle and Snowflake do not truly support temp tables. To emulate temp tables, provide a schema with write privileges where temp tables can be created.
targetCohortTable	The name of the table where the target cohort(s) are stored
cdmSourceName	A human-readable name for the OMOP CDM source

Value

An ExecutionSettings object

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createTableShell *Create an empty TableShell object and set its title*

Description

Create an empty TableShell object and set its title

Usage

```
createTableShell(title, targetCohorts, lineItems)
```

Arguments

title	The title of the TableShell
targetCohorts	A list of TargetCohort objects
lineItems	A list of lineItem objects

Value

A TableShell object

`defaultTableShellBuildOptions` *Default build options to generate table shell*

Description

Default build options to generate table shell

Usage

```
defaultTableShellBuildOptions(
  codesetTempTable = "#codeset",
  timeWindowTempTable = "#time_windows",
  targetCohortTempTable = "#target_cohorts",
  tsMetaTempTable = "#ts_meta",
  conceptSetOccurrenceTempTable = "#concept_set_occ",
  cohortOccurrenceTempTable = "#cohort_occ",
  patientLevelDataTempTable = "#patient_data",
  patientLevelTableShellTempTable = "#pat_ts_tab",
  categoricalSummaryTempTable = "#categorical_table",
  continuousSummaryTempTable = "#continuous_table"
)
```

Arguments

`codesetTempTable`
: the name of the codeset table used in execution. Defaults as a temp table #codeset

`timeWindowTempTable`
: the name of the time Window table used in execution. Defaults as a temp table #time_windows

`targetCohortTempTable`
: the name of the target cohort table used in execution. Defaults as a temp table #target_cohorts

`tsMetaTempTable`
: the name of the table shell meta table used in execution. Defaults as a temp table #ts_meta

`conceptSetOccurrenceTempTable`
: the name of the concept set occurrence table used in execution. Defaults as a temp table #concept_set_occ

`cohortOccurrenceTempTable`
: the name of the cohort occurrence table used in execution. Defaults as a temp table #cohort_occ

`patientLevelDataTempTable`
: the name of the patient level data table used in execution. Note this does not contain info of the table shell. Defaults as a temp table #patient_data

`patientLevelTableShellTempTable`
: the name of the patient level data table with additional meta info used in execution. Defaults as a temp table #pat_ts_tab

`categoricalSummaryTempTable`
: the name of the categorical summary table used in execution. Defaults as a temp table #categorical_table

`continuousSummaryTempTable`
: the name of the continuous summary table used in execution. Defaults as a temp table #continuous_table

`connectionDetails`
: A DatabaseConnector connectionDetails object (optional if connection is specified)

Value

A BuildOptions object

`femaleGender` *Create a female concept stat*

Description

Create a female concept stat

Usage

```
femaleGender()
```

Value

A DemographicConcept Statistic class object indicating a female concept

---

`generateTableShell` *Function to generate results for the table shell object*

Description

Function to generate results for the table shell object

Usage

```
generateTableShell(tableShell, executionSettings, buildOptions = NULL)
```

Arguments

`tableShell` The TableShell object to used for generation

`executionSettings`
: The ExecutionSettings object used to generate table shell

`buildOptions` The BuildOptions object used to generate table shell

Value

A list containing a tibble for categorical and continuous results

lineItems *Combine all lineItems to enter into the tableShell slot*

Description

Combine all lineItems to enter into the tableShell slot

Usage

```
lineItems(...)
```

Arguments

...	A list of lineItems created from various calls

Value

a flattened list of lineItems

maleGender *Create a male concept stat*

Description

Create a male concept stat

Usage

```
maleGender()
```

Value

A DemographicConcept Statistic class object indicating a male concept

newBreaks *Create a breaks Strategy object for categorizing*

Description

Create a breaks Strategy object for categorizing

Usage

```
newBreaks(name, breaks, labels = NULL)
```

Arguments

name	the name of the breaks
breaks	a vector with cut points to user
labels	a character vector indicating how to label the cut-point. Can stay NULL where a default label is given

Value

A BreaksStreategy object

`observedCountBreaksStat` *Create a count stat with breaks where only occurrence during the observation period are valid*

Description

Create a count stat with breaks where only occurrence during the observation period are valid

Usage

```
observedCountBreaksStat(breaks)
```

Arguments

breaks	a breaksStrategy object dictating how to classify counts into categories. If null then this defaults to a continuous distribution

Value

A stat object breaks

`observedCountCtsStat` *Create a count stat where only occurrence during the observation period are valid*

Description

Create a count stat where only occurrence during the observation period are valid

Usage

```
observedCountCtsStat()
```

Value

A stat object continuousDistribution

`observedPresenceStat` *Create a presence stat where only occurrence during the observation period are valid*

Description

Create a presence stat where only occurrence during the observation period are valid

Usage

```
observedPresenceStat()
```

Value

A presence stat object

`observedTimeToFirstBreaksStat` *Create a time to stat with breaks where only occurrence during the observation period are valid*

Description

Create a time to stat with breaks where only occurrence during the observation period are valid

Usage

```
observedTimeToFirstBreaksStat(breaks)
```

Arguments

`breaks`	a breaksStrategy object dictating how to classify counts into categories. If null then this defaults to a continuous distribution

Value

A stat object breaks

observedTimeToFirstCtsStat *Create a continuous time to stat where only occurrence during the observation period are valid*

Description

Create a continuous time to stat where only occurrence during the observation period are valid

Usage

```
observedTimeToFirstCtsStat()
```

Value

A stat object continuousDistribution

parseCohortInfoFromDf *Parse cohort info from a data frame*

Description

Parse cohort info from a data frame

Usage

```
parseCohortInfoFromDf(df)
```

Arguments

df	The data frame containing the information for the cohorts (id and name)

Value

A list of CohortInfo objects

reviewTableShellSql *Function that previews sql script used to generate results for table shell*

Description

Function that previews sql script used to generate results for table shell

Usage

```
reviewTableShellSql(
  tableShell,
  executionSettings,
  buildOptions = NULL,
  saveName = NULL,
  savePath = here::here()
)
```

Arguments

tableShell	The TableShell object to used for generation
executionSettings	The ExecutionSettings object used to generate table shell
buildOptions	The BuildOptions object used to generate table shell

Value

A monaco widget in the viewer tab of RStudio with the sql script

Statistic *An R6 class to define a Statistic object*

Description

A Statistic is a type of metric to be used for characterization Specific types of statistics are defined in derived classes

Methods

Public methods:

- Statistic$new()
- Statistic$getStatisticType()
- Statistic$getAggregationType()
- Statistic$getPersonLineTransformation()
- Statistic$getBreaksIfAny()
- Statistic$clone()

Method new():

Usage:

```
Statistic$new(statType, personLine, aggType)
```

Method `getStatisticType()`**:**

Usage:

```
Statistic$getStatisticType()
```

Method `getAggregationType()`**:**

Usage:

```
Statistic$getAggregationType()
```

Method `getPersonLineTransformation()`**:**

Usage:

```
Statistic$getPersonLineTransformation()
```

Method `getBreaksIfAny()`**:**

Usage:

```
Statistic$getBreaksIfAny()
```

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
Statistic$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

`timeInterval` *Create a single time interval*

Description

Create a single time interval

Usage

```
timeInterval(lb, rb)
```

Arguments

`lb`	the left bound of the time interval
`rb`	the right bound of the time interval

Value

A time interval object

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