Package ‘Dict’

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Title R6 Based Key-Value Dictionary Implementation
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Description A key-value dictionary data structure based on R6 class which is designed to be similar usages with other languages dictionary (e.g. 'Python') with reference semantics and extend-abilities by R6.

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R6 Based Key-Value Dictionary Implementation

Description

A key-value dictionary data structure based on R6 class which is designed to be similar usages with other languages dictionary (e.g. Python) with reference semantics and extendabilities by R6.

Usage

dict(..., .class = "any", .overwrite = TRUE)

Arguments

... Any length of key and value pairs. If you would like to use a not valid R name as a key, you must wrap it by backquotes or convert it using make.names.
.class A character scalar of value object’s class. It must be an output from class. If "any" (default), value can contain any type of object.
.overwrite A logical scalar whether to overwrite the value if the key is overlapped.

Value

A Dict class object.

Active bindings

items A tbl_df of the dictionary items.
keys A character vector of the dictionary keys.
values A list of of the dictionary values.
length A integer scalar of the items length.
class A character scalar of value class.
.overwrite A logical scalar whether to overwrite value if key is overlapped.

Methods

Public methods:

• Dict$new()
• Dict$print()
• Dict$add()
• Dict$has()
• Dict$get()
• Dict$remove()
• Dict$sort()
• Dict$clear()
• Dict$clone()

Method new(): Construct a new Dict object.

Usage:
Dict$new(..., .class = "any", .overwrite = TRUE)

Arguments:
... Any length of key and value pairs. If you would like to use a not valid R name as a key, you must wrap it by backquotes or convert it using make.names.
.class A character scalar of value object's class. It must be an output from class. If "any" (default), value can contain any type of object.
.overwrite A logical scalar whether to overwrite the value if the key is overlapped.

Returns: A Dict class object.

Examples:
ages <- Dict$new(
  Charlie = 40L,
  Alice = 30L,
  Bob = 25L,
  .class = "integer",
  .overwrite = TRUE
)

Method print(): Print Dict items which is a tbl_df-class object by tibble package.

Usage:
Dict$print(...)

Arguments:
... Additional arguments passed to print.tbl.

Returns: Dict object by invisible(self).

Examples:
ages$print(n = Inf)

Method add(): Add key-value objects to the dictionary.

Usage:
Dict$add(...)

Arguments:
... Any length of key and value pairs. If you would like to use a not valid R name as a key, you must wrap it by backquotes or convert it using make.names.

Returns: Dict object by invisible(self).

Examples:
ages$add(John = 18L)
ages["John"] <- 18L

Method has(): Check if the object contains the key.

Usage:
Dict$has(key = NULL)

Arguments:
key  A character scalar of the dictionary key.

Returns: A logical scalar.

Examples:
ages$has("Bob")

Method get(): Retrieves object with a key from the dictionary.

Usage:
Dict$get(key = NULL, default = NULL)

Arguments:
key  A character scalar, integer scalar of items index or NULL. If key is NULL and items is not empty, the first value is returned.
default  A default value returned, if the key is not found. Default is NULL.

Returns: A object with the key.

Examples:
ages$get("Bob")
age["Bob"]
age[3]  # also by integer index

Method remove(): Removes a key-value from the dictionary by a key. If the key is a not valid key, this function throw an error. Use self$has() to check key availability.

Usage:
Dict$remove(key = NULL)

Arguments:
key  A character scalar of the dictionary key.

Returns: Dict object by invisible(self).

Examples:
ages$remove("Bob")

Method sort(): Sort dictionary by keys.

Usage:
Dict$sort(desc = FALSE)

Arguments:
desc  A logical scalar whether to sort in descending order. Default is FALSE.

Returns: Dict object by invisible(self).

Examples:
ages$sort()

Method clear(): Clear dictionary.

Usage:
Dict$clear()

Returns: Dict object by invisible(self).

Examples:
ages$clear()

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

Usage:
Dict$clone(deep = FALSE)

Arguments:
deep Whether to make a deep clone.

Examples

## ------------------------------------------------
## Method `Dict$new`
## ------------------------------------------------

ages <- Dict$new(
  Charlie = 40L,
  Alice = 30L,
  Bob = 25L,
  .class = "integer",
  .overwrite = TRUE
)

## ------------------------------------------------
## Method `Dict$print`
## ------------------------------------------------

ages$print(n = Inf)

## ------------------------------------------------
## Method `Dict$add`
## ------------------------------------------------

ages$add(John = 18L)
ages["John"] <- 18L

## ------------------------------------------------
## Method `Dict$has`
## ------------------------------------------------

ages$has("Bob")

## ------------------------------------------------
## Method `Dict$get`
## ------------------------------------------------

ages$get("Bob")
ages["Bob"]
ages[3] # also by integer index

## Method `Dict$remove`

ages$remove("Bob")

## Method `Dict$sort`

ages$sort()

## Method `Dict$clear`

ages$clear()
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