Utils

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Contents

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Dummy var

```
#' Dummy Variable
#'
#' Decompose a factor-coercible variable into dummy variables.
#'
#' @param x (`atomic`)
#' @export
#' @source <https://fcacollin.github.io/guide/utils_01/utils_01.html>
#' @md
#' @examples
#' # Use case data.frame.
#' head(iris)
#' head(dummy_var(iris$Species))
#' iris$sp <- dummy_var(iris$Species)
#' head(iris)
#'
#' # With logical.
#' dummy_var(c(TRUE, FALSE))
#'
#' # With character.
#' dummy_var(c("cat", "cat", "dog", "corgi", "corgi"))
#'
dummy_var <- function(x) {
  stopifnot(is.atomic(x))
```

```
  if (!is.factor(x)) {
    x <- as.factor(x)
  }
  x <- droplevels(x)
  y <- stats::model.matrix(~ x + 0)
  colnames(y) <- levels(x)
  as.data.frame(y)
}


# Use case data.frame.
head(iris)
```

```
##   Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 1          5.1         3.5          1.4         0.2
setosa
## 2          4.9         3.0          1.4         0.2
setosa
## 3          4.7         3.2          1.3         0.2
setosa
## 4          4.6         3.1          1.5         0.2
setosa
## 5          5.0         3.6          1.4         0.2
setosa
## 6          5.4         3.9          1.7         0.4
setosa
```

```
head(dummy_var(iris$Species))
```

```
##   setosa versicolor virginica
## 1      1          0         0
## 2      1          0         0
## 3      1          0         0
## 4      1          0         0
## 5      1          0         0
## 6      1          0         0
```

```
iris$sp <- dummy_var(iris$Species)
head(iris)
```

```
##   Sepal.Length Sepal.Width Petal.Length Petal.Width Species sp.setosa
## 1          5.1         3.5          1.4         0.2
 setosa          1
## 2          4.9         3.0          1.4         0.2
 setosa          1
## 3          4.7         3.2          1.3         0.2
 setosa          1
## 4          4.6         3.1          1.5         0.2
 setosa          1
## 5          5.0         3.6          1.4         0.2
 setosa          1
## 6          5.4         3.9          1.7         0.4
 setosa          1
##   sp.versicolor sp.virginica
## 1             0            0
## 2             0            0
## 3             0            0
## 4             0            0
## 5             0            0
## 6             0            0
```

```
# With logical.
dummy_var(c(TRUE, FALSE))
```

```
##   FALSE TRUE
## 1     0    1
## 2     1    0
```

```
# With character.
dummy_var(c("cat", "cat", "dog", "corgi", "corgi"))
```

```
##   cat corgi dog
## 1   1     0   0
## 2   1     0   0
## 3   0     0   1
## 4   0     1   0
## 5   0     1   0
```

Matrix To Long Format

```
#' Matrix-like Data To Long Data Frame
#'
#' Transform a matrix-like data set into a long data frame.
#'
mat_to_long_df <- function(x, ...) {
  UseMethod("mat_to_long_df", x)
}

mat_to_long_df.matrix <- function(x, names = c("row", "col", "value"), ...) {

  assertthat::assert_that(length(names) == 3L)
  if (is.null(colnames(x))) colnames(x) <- as.character(seq_len(ncol(x)))
  if (is.null(rownames(x))) rownames(x) <- as.character(seq_len(nrow(x)))

  y <- data.frame(
    rownames(x)[c(row(x))],
    colnames(x)[c(col(x))],
    c(x),
    row.names = NULL
  )

  names(y) <- names
  y
}

mat_to_long_df.data.frame <- function(x, ...) {
  x <- as.matrix(x)
  mat_to_long_df(x, ...)
}

m <- matrix(
    c(
     11, 12,
     21, 22,
     31, 32
     ),
  nrow = 3, byrow = TRUE,
  dimnames = list(row = 1:3, col = 1:2)
)
df <- as.data.frame(m)

mat_to_long_df(m)
```

```
##   row col value
## 1   1   1    11
## 2   2   1    21
## 3   3   1    31
## 4   1   2    12
## 5   2   2    22
## 6   3   2    32
```

```
mat_to_long_df(df)
```

```
##   row col value
## 1   1   1    11
## 2   2   1    21
## 3   3   1    31
## 4   1   2    12
## 5   2   2    22
## 6   3   2    32
```

```
library(testthat)
test_that("mat_to_long_df␣names␣are␣used", {
  result <- mat_to_long_df(m, names = c("a", "b", "y"))
  expected <- data.frame(
    a = c("1", "2", "3", "1", "2", "3"),
    b = c("1", "1", "1", "2", "2", "2"),
    y = c(11, 21, 31, 12, 22, 32)
  )
  expect_identical(result, expected)
})
```

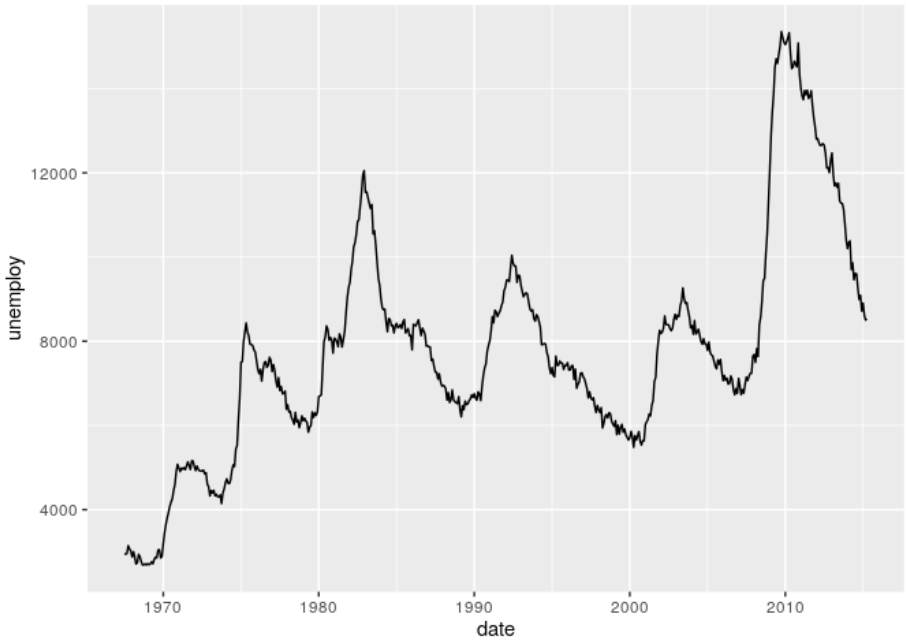
```
## Test passed
```

```
test_that("mat_to_long_df␣error␣if␣not␣3␣names␣provided", {
  expect_error(mat_to_long_df(m, names = "a"))
})
```

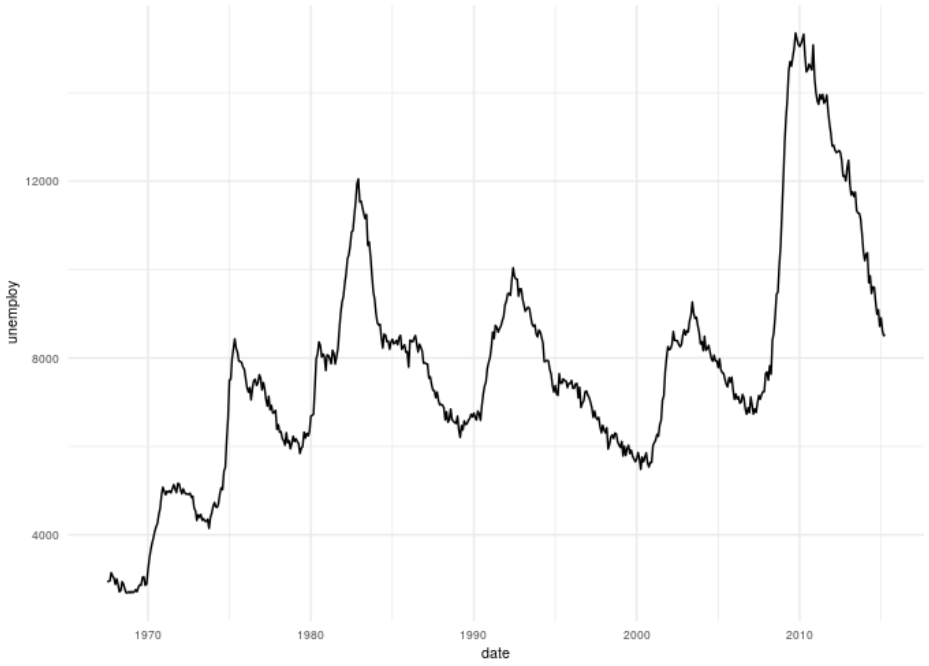
```
## Test passed
```

Set a theme for ggplot2

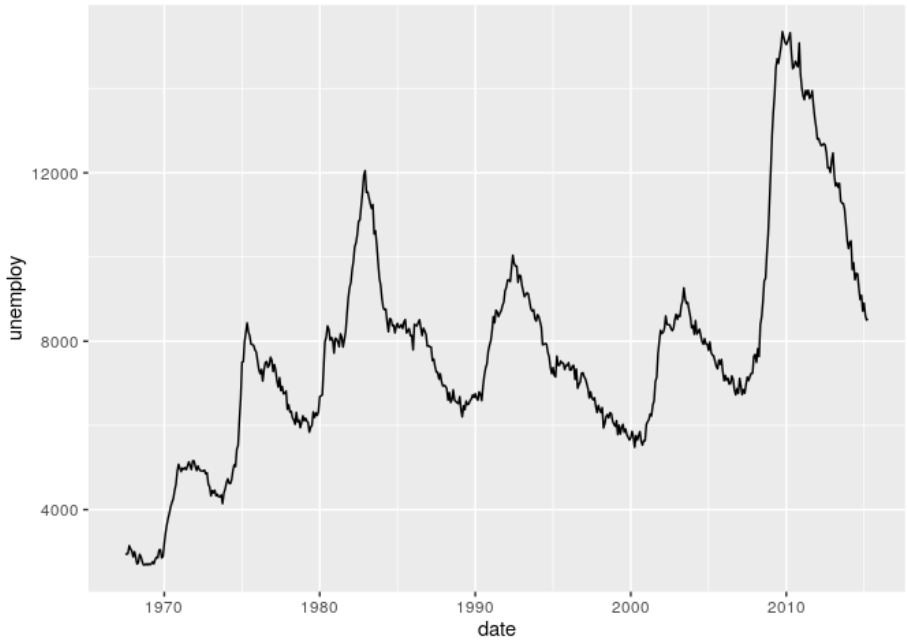
```
#' `ggplot` theme
#'
#' Compliance with journal requirements.
#' @param reset (`flag`).
#' @export
#'
theme_rpack <- function(reset = FALSE) {

  assertthat::assert_that(is.logical(reset))
  if (reset) {
    ggplot2::theme_set(ggplot2::theme_gray())
  } else {
    new_theme <- ggplot2::theme_minimal() +
      ggplot2::theme(
        line = ggplot2::element_line(color = "black"),
        legend.position = "bottom",
        legend.key.height = grid::unit(.3, "cm"),
        text = ggplot2::element_text(size = 8),
        plot.margin = ggplot2::margin(0, 0, 0, 0, "cm"),
        legend.margin = ggplot2::margin(0, 0, 0, 0, "cm")
      )
    ggplot2::theme_set(new_theme)
  }
}


library(ggplot2)
gg <- ggplot(economics, aes(date, unemploy)) + geom_line()
gg
```




```
theme_rpack()
gg
```




```
theme_rpack(reset = TRUE)
gg
```




```
sessionInfo()
```

```
## R version 4.0.4 (2021-02-15)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Debian GNU/Linux 10 (buster)
##
## Matrix products: default
## BLAS:   /usr/lib/x86_64-linux-gnu/openblas/libblas.so.3
## LAPACK: /usr/lib/x86_64-linux-gnu/libopenblasp-r0.3.5.so
##
## locale:
##  [1] LC_CTYPE=en_GB.UTF-8       LC_NUMERIC=C
##  [3] LC_TIME=en_GB.UTF-8        LC_COLLATE=en_GB.UTF-8
##  [5] LC_MONETARY=en_GB.UTF-8    LC_MESSAGES=en_GB.UTF-8
##  [7] LC_PAPER=en_GB.UTF-8       LC_NAME=C
##  [9] LC_ADDRESS=C               LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_GB.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets
methods   base
##
```

```
## other attached packages:
## [1] ggplot2_3.3.3  testthat_3.0.2
##
## loaded via a namespace (and not attached):
##  [1] highr_0.9          compiler_4.0.4     pillar_1.6.0
tools_4.0.4
##  [5] digest_0.6.27      pkgload_1.1.0      evaluate_0.14
lifecycle_1.0.0
##  [9] tibble_3.1.1       gtable_0.3.0       pkgconfig_2.0.3
rlang_0.4.11
## [13] DBI_1.1.1          cli_2.5.0          rstudioapi_0.13
yaml_2.2.1
## [17] xfun_0.22          withr_2.4.1        stringr_1.4.0
dplyr_1.0.5
## [21] knitr_1.33         generics_0.1.0     desc_1.3.0
vctrs_0.3.8
## [25] tidyselect_1.1.1   rprojroot_2.0.2    grid_4.0.4
glue_1.4.2
## [29] R6_2.5.0           fansi_0.4.2        rmarkdown_2.6
farver_2.1.0
## [33] purrr_0.3.4        magrittr_2.0.1     scales_1.1.1
ps_1.6.0
## [37] htmltools_0.5.1.1  ellipsis_0.3.2     assertthat_0.2.1
colorspace_2.0-1
## [41] labeling_0.4.2     utf8_1.2.1         stringi_1.5.3
munsell_0.5.0
## [45] crayon_1.4.1
```