

Package ‘edm1’

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Title Simplify Complex Data Manipulation

Version 2.0.0.0

Description Provides complex sorting algorithms. Provides date manipulation algorithms. In addition to providing handy functions to discretize variables, an SQL joins alternatives, a set of function to work with geographical coordinates, and other functions to work with text mining.

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Imports stringr,
stringi,
dplyr,
data.table,
openxlsx

Depends stringr,
stringi,
dplyr,
data.table,
openxlsx

Contents

all_stat	5
any_join_datf	6
appndr	8
arroundr_mean	9
arroundr_min	10
better_match	10
better_split	11
better_split_any	12
better_sub	12
better_sub_mult	13
better_unique	14
bind_cols	15
bind_rows	16
can_be_num	17
closer_ptrn	17

closer_ptm_adv	20
clusterizer_v	21
colins_datf	23
col_to_row	24
converter_date	25
converter_format	26
cost_and_taxes	26
cumulated_rows	27
cumulated_rows_na	28
cutr_v	29
cut_v	29
data_gen	30
data_meshup	32
date_addr	33
date_converter_reverse	34
datf_appendr	35
datf_appendr2	35
datf_insertr	36
datf_row_appendr	37
datf_row_appendr2	37
dcr_untl	38
dcr_val	39
depth_pairs_findr	39
diff_datf	40
dynamic_idx_converttr	40
edm_arrangr	41
edm_arrangr2	42
edm_group_by1	43
edm_group_by2	44
edm_pivot_longer1	45
edm_pivot_longer2	47
edm_pivot_wider1	49
edm_pivot_wider2	51
elements_equalifier	52
equalizer_v	53
extract_normal	54
extrt_only_v	60
fillr	60
fixer_nest_v	61
fold_rec	62
fold_rec2	62
format_date	63
geo_min	63
get_rec	64
globe	64
glue_groupr_v	65
grep_all	66
grep_all2	66
groupr_datf	67
gsub_mult	68
historic_sequence1	69
historic_sequence2	70

how_normal	71
how_unif	74
id_keepr	75
incr_fillr	76
infinite_char_seq	77
inner_all	77
insert_datf	78
intersect_all	79
intersect_mod	79
inter_max	81
inter_min	82
isnt_divisible	83
is_divisible	83
join_n_lvl	84
just_anything	85
just_anything2	85
just_anything3	86
just_chr	86
just_chr2	87
just_chr3	87
just_nb	88
just_nb2	88
just_nb3	89
just_not_anything	89
just_not_anything2	90
just_not_anything3	90
leap_yr	91
left_all	91
letter_to_nb	92
list_files	92
lst_flatnr	93
match_by	93
match_na_omit	94
multitud	94
nb2_follow	95
nb_follow	96
nb_to_letter	96
nestr_datf1	98
nestr_datf2	99
nest_v	99
new_ordered	100
normal_dens	101
occu	101
old_to_new_idx	102
pairs_findr	102
pairs_findr_merger	103
pairs_insertr	104
pairs_insertr2	106
paste_datf	107
paste_datf2	108
pattern_generator	108
pattern_gettr	109

pattern_tuning	110
power_to_char	111
pre_to_post_idx	111
ptrn_switchr	112
ptrn_twkr	112
read_edm_parser	113
rearangr_v	114
regex_spe_detect	115
regroupr	115
rm_na_rows	116
rm_rows	117
row_to_col	118
r_print	118
save_untl	119
see_datf	120
see_diff	121
see_diff_all	122
see_file	122
see_idx	123
see_inside	124
see_in_grep	124
see_in_l	125
see_mode	126
selected_char	126
sequence_na_mean1	127
sequence_na_mean2	128
sequence_na_med1	129
sequence_na_med2	130
sort_date	131
sort_normal_qual	132
sort_normal_qual2	136
split_by_step	139
str_remove_untl	140
sub_mult	141
successive_diff	141
sum_group1	142
sum_group2	143
swipr	145
test_order	146
to_unique	147
union_all	148
union_keep	148
unique_datf	149
unique_ltr_from_v	150
unique_pos	150
unique_total	151
until_stnl	151
val_replacer	152
vector_replacor	152
vec_in_datf	153
vlookup_datf	154
wider_datf	155

wide_to_narrow_idx	156
write_edm_parser	157

Index	158
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all_stat	<i>all_stat</i>
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Description

Allow to see all the main statistics indicators (mean, median, variance, standard deviation, sum, max, min, quantile) of variables in a dataframe by the modality of a variable in a column of the input datarame. In addition to that, you can get the occurence of other qualitative variables by your chosen qualitative variable, you have just to precise it in the vector "stat_var" where all the statistics indicators are given with "occu-var_you_want/".

Usage

```
all_stat(inpt_v, var_add = c(), stat_var = c(), inpt_datf)
```

Arguments

inpt_v	is the modalities of the variables
var_add	is the variables you want to get the stats from
stat_var	is the stats indicators you want
inpt_datf	is the input dataframe

Examples

```
datf <- data.frame("mod"=c("first", "seco", "seco", "first", "first", "third", "first"),
  "var1"=c(11, 22, 21, 22, 22, 11, 9),
  "var2"=c("d", "d", "z", "z", "z", "d", "z"),
  "var3"=c(45, 44, 43, 46, 45, 45, 42),
  "var4"=c("A", "A", "A", "A", "B", "C", "C"))

print(all_stat(inpt_v=c("first", "seco"), var_add = c("var1", "var2", "var3", "var4"),
  stat_var=c("sum", "mean", "median", "sd", "occu-var2/", "occu-var4/", "variance",
"quantile-0.75/"),
  inpt_datf=datf))

#   modal_v var_vector occu sum mean  med standard_devaition      variance
#1    first
#2          var1      64   16 16.5   6.97614984548545 48.6666666666667
#3          var2-d      1
#4          var2-z      3
#5          var3     178 44.5   45   1.73205080756888      3
#6          var4-A      2
#7          var4-B      1
#8          var4-C      1
#9    seco
#10         var1     43 21.5 21.5   0.707106781186548      0.5
#11         var2-d      1
#12         var2-z      1
```

```

#13          var3      87 43.5 43.5  0.707106781186548      0.5
#14          var4-A      2
#15          var4-B      0
#16          var4-C      0
# quantile-0.75
#1
#2          22
#3
#4
#5          45.25
#6
#7
#8
#9
#10         21.75
#11
#12
#13         43.75
#14
#15
#16

```

any_join_datf	<i>any_join_datf</i>
---------------	----------------------

Description

Allow to perform SQL joints with more features

Usage

```

any_join_datf(
  inpt_datf_l,
  join_type = "inner",
  join_spe = NA,
  id_v = c(),
  excl_col = c(),
  rtn_col = c(),
  d_val = NA
)

```

Arguments

<code>inpt_datf_l</code>	is a list containing all the dataframe
<code>join_type</code>	is the joint type. Defaults to inner but can be changed to a vector containing all the dataframes you want to take their ids to don external joints.
<code>join_spe</code>	can be equal to a vector to do an external joints on all the dataframes. In this case, <code>join_type</code> should not be equal to "inner"
<code>id_v</code>	is a vector containing all the ids name of the dataframes. The ids names can be changed to number of their columns taking in count their position in <code>inpt_datf_l</code> . It means that if my id is in the third column of the second dataframe and the first dataframe have 5 columns, the column number of the ids is $5 + 3 = 8$

`excl_col` is a vector containing the column names to exclude, if this vector is filled so "rtn_col" should not be filled. You can also put the column number in the manner indicated for "id_v". Defaults to `c()`

`rtn_col` is a vector containing the column names to retain, if this vector is filled so "excl_col" should not be filled. You can also put the column number in the manner indicated for "id_v". Defaults to `c()`

`d_val` is the default val when here is no match

Examples

```
datf1 <- data.frame("val"=c(1, 1, 2, 4), "ids"=c("e", "a", "z", "a"),
  "last"=c("oui", "oui", "non", "oui"),
  "second_ids"=c(13, 11, 12, 8), "third_col"=c(4:1))

datf2 <- data.frame("val"=c(3, 7, 2, 4, 1, 2), "ids"=c("a", "z", "z", "a", "a", "a"),
  "bool"=c(TRUE, FALSE, FALSE, FALSE, TRUE, TRUE),
  "second_ids"=c(13, 12, 8, 34, 22, 12))

datf3 <- data.frame("val"=c(1, 9, 2, 4), "ids"=c("a", "a", "z", "a"),
  "last"=c("oui", "oui", "non", "oui"),
  "second_ids"=c(13, 11, 12, 8))

print(any_join_datf(inpt_datf_l=list(datf1, datf2, datf3), join_type="inner",
  id_v=c("ids", "second_ids"),
  excl_col=c(), rtn_col=c()))

#  ids val  ids last second_ids val  ids  bool second_ids val  ids last second_ids
#3 z12   2   z non           12   7   z FALSE           12   2   z non           12

print(any_join_datf(inpt_datf_l=list(datf1, datf2, datf3), join_type="inner", id_v=c("ids",
  excl_col=c(), rtn_col=c()))

#  ids val  ids last second_ids val  ids  bool second_ids val  ids last second_ids
#2   a   1   a oui           11   3   a TRUE           13   1   a oui           13
#3   z   2   z non           12   7   z FALSE           12   2   z non           12
#4   a   4   a oui            8   4   a FALSE           34   9   a oui           11

print(any_join_datf(inpt_datf_l=list(datf1, datf2, datf3), join_type=c(1), id_v=c("ids"),
  excl_col=c(), rtn_col=c()))

#  ids val  ids last second_ids val  ids  bool second_ids val  ids last
#1   e   1   e oui           13 <NA> <NA> <NA>           <NA> <NA> <NA> <NA>
#2   a   1   a oui           11   3   a TRUE           13   1   a oui
#3   z   2   z non           12   7   z FALSE           12   2   z non
#4   a   4   a oui            8   4   a FALSE           34   9   a oui
# second_ids
#1           <NA>
#2           13
#3           12
#4           11

print(any_join_datf(inpt_datf_l=list(datf2, datf1, datf3), join_type=c(1, 3),
  id_v=c("ids", "second_ids"),
  excl_col=c(), rtn_col=c()))

#  ids val  ids  bool second_ids val  ids last second_ids val  ids last
```

```
#1 a13 3 a TRUE 13 <NA> <NA> <NA> <NA> 1 a oui
#2 z12 7 z FALSE 12 2 z non 12 2 z non
#3 z8 2 z FALSE 8 <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#4 a34 4 a FALSE 34 <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#5 a22 1 a TRUE 22 <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#6 a12 2 a TRUE 12 <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#7 a13 <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#8 a11 <NA> <NA> <NA> <NA> 1 a oui 11 9 a oui
#9 z12 <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#10 a8 <NA> <NA> <NA> <NA> 4 a oui 8 4 a oui
# second_ids
#1 13
#2 12
#3 <NA>
#4 <NA>
#5 <NA>
#6 <NA>
#7 <NA>
#8 11
#9 <NA>
#10 8

print(any_join_datf(inpt_datf_l=list(datf1, datf2, datf3), join_type=c(1), id_v=c("ids"),
                    excl_col=c(), rtn_col=c()))

#ids val ids last second_ids val ids bool second_ids val ids last
#1 e 1 e oui 13 <NA> <NA> <NA> <NA> <NA> <NA> <NA>
#2 a 1 a oui 11 3 a TRUE 13 1 a oui
#3 z 2 z non 12 7 z FALSE 12 2 z non
#4 a 4 a oui 8 4 a FALSE 34 9 a oui
# second_ids
#1 <NA>
#2 13
#3 12
#4 11
```

appndr	<i>appndr</i>
--------	---------------

Description

Append to a vector "inpt_v" a special value "val" n times "hmn". The appending begins at "strt" index.

Usage

```
appndr(inpt_v, val = NA, hmn, strt = "max")
```

Arguments

- inpt_v is the input vector
- val is the special value
- hmn is the number of special value element added

`strt` is the index from which appending begins, defaults to max which means the end of "inpt_v"

Examples

```
print(appndr(inpt_v=c(1:3), val="oui", hmn=5))

#[1] "1" "2" "3" "oui" "oui" "oui" "oui" "oui"

print(appndr(inpt_v=c(1:3), val="oui", hmn=5, strt=1))

#[1] "1" "oui" "oui" "oui" "oui" "oui" "2" "3"
```

arroundr_mean	<i>arroundr_mean</i>
---------------	----------------------

Description

Takes an ascendly int ordered vector as input and assigns each elements that are close enough to the same value accrdng to a step value (step_value), see examples.

Usage

```
arroundr_mean(inpt_v = c(), step_val)
```

Arguments

`inpt_v` is the input vector
`step_val` is the step_value

Examples

```
x <- arroundr_mean(inpt_v = c(-11:25), step_val = 5)
print(x)
print(length(x))

[1] -9.0 -9.0 -9.0 -9.0 -9.0 -4.0 -4.0 -4.0 -4.0 -4.0 1.0 1.0 1.0 1.0 1.0
[16] 6.0 6.0 6.0 6.0 6.0 11.0 11.0 11.0 11.0 11.0 16.0 16.0 16.0 16.0 16.0
[31] 21.0 21.0 21.0 21.0 21.0 23.8 23.8
[1] 37
```

arroundr_min	<i>arroundr_min</i>
--------------	---------------------

Description

Takes an ascendly int ordered vector as input and assigns each elements that are close enough to the same value accrdng to a step value (step_value), see examples.

Usage

```
arroundr_min(inpt_v = c(), step_val)
```

Arguments

inpt_v	is the input vector
step_val	is the step value

Examples

```
print(arroundr_min(inpt_v = c(-11:25), step_val = 5))

[1] -11 -11 -11 -11 -11 -11 -6 -6 -6 -6 -6 -1 -1 -1 -1 -1 4 4 4
[20] 4 4 9 9 9 9 9 14 14 14 14 14 19 19 19 19 19 24
```

better_match	<i>better_match</i>
--------------	---------------------

Description

Allow to get the nth element matched in a vector

Usage

```
better_match(inpt_v = c(), ptrn, until = 1, nvr_here = NA)
```

Arguments

inpt_v	is the input vector
ptrn	is the pattern to be matched
until	is the maximum number of matched pattern outputed
nvr_here	is a value you are sure is not present in inpt_v

Examples

```
print(better_match(inpt_v=c(1:12, 3, 4, 33, 3), ptrn=3, untl=1))

#[1] 3

print(better_match(inpt_v=c(1:12, 3, 4, 33, 3), ptrn=3, untl=5))

#[1] 3 13 16

print(better_match(inpt_v=c(1:12, 3, 4, 33, 3), ptrn=c(3, 4), untl=5))

[1] 3 13 16 4 14

print(better_match(inpt_v=c(1:12, 3, 4, 33, 3), ptrn=c(3, 4), untl=c(1, 5)))

[1] 3 4 14
```

better_split	<i>better_split</i>
--------------	---------------------

Description

Allows to split a string by multiple split, returns a vector and not a list.

Usage

```
better_split(inpt, split_v = c())
```

Arguments

inpt	is the input character
split_v	is the vector containing the splits

Examples

```
print(better_split(inpt = "o-u_i", split_v = c("-")))

[1] "o" "u_i"

print(better_split(inpt = "o-u_i", split_v = c("-", "_")))

[1] "o" "u" "i"
```

better_split_any *better_split_any*

Description

Allows to split a string by multiple split regardless of their length, returns a vector and not a list.
Contrary to better_split, this functions keep the delimiters in the output.

Usage

```
better_split_any(inpt, split_v = c())
```

Arguments

inpt is the input character
split_v is the vector containing the splits

Examples

```
print(better_split_any(inpt = "o-u_i", split_v = c("-")))

[1] "o"  "-" "u_i"

print(better_split_any(inpt = "o-u_i", split_v = c("-", "_")))

[1] "o" "-" "u"  "_" "i"

print(better_split_any(inpt = "--o--_/m/m/___opo-/m/-u_i_--", split_v = c("--", "_", "/"

[1] "--"      "o"        "--"      "_"        "/"        "m"        "/"        "m"        "/"
[10] "_"       "_"        "-opo-"   "/"        "m"        "/"        "-u"       "_"       "i-"
[19] "_"       "--"

print(better_split_any(inpt = "(ok(ee:56))(ok2(oui)(ee:4))", split_v = c("(", ")", ":", ""))

[1] "("      "ok"    "("      "ee"    ":"      "56"    ")"      ")"      "("      "ok2"   "("      "oui"
[13] ")"      "("      "ee"    ":"      "4"      ")"      ")"
```

better_sub *better_sub*

Description

Allow to perform a sub operation to a given number of matched patterns, see examples

Usage

```
better_sub(inpt_v = c(), pattern, replacement, until_v = c())
```

Arguments

`inpt_v` is a vector containing all the elements that contains expressions to be substituted
`pattern` is the expression that will be substituted
`replacement` is the expression that will substitute pattern
`until_v` is a vector containing, for each element of `inpt_v`, the number of pattern that will be substituted

Examples

```
print(better_sub(inpt_v = c("yes NAME, i will call NAME and NAME",
                           "yes NAME, i will call NAME and NAME"),
              pattern = "NAME",
              replacement = "Kevin",
              until = c(2)))

[1] "yes Kevin, i will call Kevin and NAME"
[2] "yes Kevin, i will call Kevin and NAME"

print(better_sub(inpt_v = c("yes NAME, i will call NAME and NAME",
                           "yes NAME, i will call NAME and NAME"),
              pattern = "NAME",
              replacement = "Kevin",
              until = c(2, 3)))

[1] "yes Kevin, i will call Kevin and NAME"
[2] "yes Kevin, i will call Kevin and Kevin"

print(better_sub(inpt_v = c("yes NAME, i will call NAME and NAME",
                           "yes NAME, i will call NAME and NAME"),
              pattern = "NAME",
              replacement = "Kevin",
              until = c("max", 3)))

[1] "yes Kevin, i will call Kevin and Kevin"
[2] "yes Kevin, i will call Kevin and Kevin"
```

better_sub_mult *better_sub_mult*

Description

Allow to perform a sub_mult operation to a given number of matched patterns, see examples

Usage

```
better_sub_mult(
  inpt_v = c(),
  pattern_v = c(),
  replacement_v = c(),
  until_v = c()
)
```

Arguments

<code>inpt_v</code>	is a vector containing all the elements that contains expressions to be substituted
<code>pattern_v</code>	is a vector containing all the patterns to be substituted in any elements of <code>inpt_v</code>
<code>replacement_v</code>	is a vector containing the expression that are going to substitute those provided by <code>pattern_v</code>
<code>until_v</code>	is a vector containing, for each element of <code>inpt_v</code> , the number of pattern that will be substituted

Examples

```
print(better_sub_mult(inpt_v = c("yes NAME, i will call NAME and NAME2",
                                "yes NAME, i will call NAME and NAME2, especially NAME2"),
                    pattern_v = c("NAME", "NAME2"),
                    replacement_v = c("Kevin", "Paul"),
                    until = c(1, 3)))

[1] "yes Kevin, i will call NAME and Paul"
[2] "yes Kevin, i will call NAME and Paul, especially Paul"

print(better_sub_mult(inpt_v = c("yes NAME, i will call NAME and NAME2",
                                "yes NAME, i will call NAME and NAME2, especially NAME2"),
                    pattern_v = c("NAME", "NAME2"),
                    replacement_v = c("Kevin", "Paul"),
                    until = c("max", 3)))

[1] "yes Kevin, i will call Kevin and Kevin2"
[2] "yes Kevin, i will call Kevin and Kevin2, especially Kevin2"
```

better_unique

*better_unique***Description**

Returns the element that are not unique from the input vector

Usage

```
better_unique(inpt_v, occu = ">-1-")
```

Arguments

<code>inpt_v</code>	is the input vector containing the elements
<code>occu</code>	is a parameter that specifies the occurrence of the elements that must be returned, defaults to ">-1-" it means that the function will return all the elements that are present more than one time in <code>inpt_v</code> . The synthax is the following "comparaison_type-actual_value-". The comparaison type may be "==" or ">" or "<". Occu can also be a vector containing all the occurrence that must have the elements to be returned.

Examples

```
print(better_unique(inpt_v=c("oui", "oui", "non", "non", "peut", "peut1", "non")))

#[1] "oui" "non"

print(better_unique(inpt_v=c("oui", "oui", "non", "non", "peut", "peut1", "non"), occu="=1-"))

#[1] "oui"

print(better_unique(inpt_v=c("oui", "oui", "non", "non", "peut", "peut1", "non"), occu=">1-"))

#[1] "non"

print(better_unique(inpt_v=c("oui", "oui", "non", "non", "peut", "peut1", "non"), occu="<2-"))

#[1] "non" "peut" "peut1"

print(better_unique(inpt_v = c("a", "b", "c", "c"), occu = "=-1-"))

[1] "a" "b"

print(better_unique(inpt_v = c("a", "b", "c", "c"), occu = "<-2-"))

[1] "a" "b"
```

bind_cols

bind_cols

Description

Allow to find the cols of a dataframe in an other dataframe, see examples

Usage

```
bind_cols(from_datf, in_datf)
```

Arguments

from_datf is the dataframe that contains the cols to find among other cols
in_datf is the dataframe that only contains the cols to find in from_datf

Examples

```
iris[, 5] <- as.character(iris[, 5])
iris <- cbind(iris, iris[, 4])
from_datf <- iris
in_datf <- iris[, c(1, 2, 2, 2, 4)]
bind_cols(from_datf = from_datf,
          in_datf = in_datf)

[[1]]
[1] 1
```

```
[[2]]
[1] 2

[[3]]
[1] 2

[[4]]
[1] 2

[[5]]
[1] 4 6
```

bind_rows

bind_rows

Description

Allow to find the rows of a dataframe in an other dataframe, see examples

Usage

```
bind_rows(from_datf, in_datf)
```

Arguments

`from_datf` is the dataframe that contains the rows to find among other rows
`in_datf` is the dataframe that only contains the rows to find in `from_datf`

Examples

```
iris[, 5] <- as.character(iris[, 5])
from_datf <- iris
in_datf <- iris[c(4, 2, 23, 21, 11), ]

bind_rows(from_datf = from_datf,
          in_datf = in_datf)

[[1]]
[1] 4

[[2]]
[1] 2

[[3]]
[1] 23

[[4]]
[1] 21

[[5]]
[1] 11
```

can_be_num	<i>can_be_num</i>
------------	-------------------

Description

Return TRUE if a variable can be converted to a number and FALSE if not (supports float)

Usage

```
can_be_num(x)
```

Arguments

x is the input value

Examples

```
print(can_be_num("34.677"))
#[1] TRUE

print(can_be_num("34"))
#[1] TRUE

print(can_be_num("3rt4"))
#[1] FALSE

print(can_be_num(34))
#[1] TRUE
```

closer_ptrn	<i>closer_ptrn</i>
-------------	--------------------

Description

Take a vector of patterns as input and output each chosen word with their closest patterns from chosen patterns.

Usage

```
closer_ptrn(
  inpt_v,
  base_v = c("?", letters),
  excl_v = c(),
  rtn_v = c(),
  sub_excl_v = c(),
  sub_rtn_v = c()
)
```

Arguments

<code>inpt_v</code>	is the input vector containing all the patterns
<code>base_v</code>	must contain all the characters that the patterns are susceptible to contain, defaults to <code>c("?", letters)</code> . "?" is necessary because it is internally the default value added to each element that does not have a sufficient length compared to the longest pattern in <code>inpt_v</code> . If set to <code>NA</code> , the function will find by itself the elements to be filled with but it may take an extra time
<code>excl_v</code>	is the vector containing all the patterns from <code>inpt_v</code> to exclude for comparing them to others patterns. If this parameter is filled, so <code>"rtn_v"</code> must be empty.
<code>rtn_v</code>	is the vector containing all the patterns from <code>inpt_v</code> to keep for comparing them to others patterns. If this parameter is filled, so <code>"rtn_v"</code> must be empty.
<code>sub_excl_v</code>	is the vector containing all the patterns from <code>inpt_v</code> to exclude for using them to compare to another pattern. If this parameter is filled, so <code>"sub_rtn_v"</code> must be empty.
<code>sub_rtn_v</code>	is the vector containing all the patterns from <code>inpt_v</code> to retain for using them to compare to another pattern. If this parameter is filled, so <code>"sub_excl_v"</code> must be empty.

Examples

```
print(closer_ptrn(inpt_v=c("bonjour", "lpoerc", "nonnour", "bonnour", "nonjour", "aurevoir")

#[[1]]
#[1] "bonjour"
#
#[[2]]
#[1] "lpoerc"    "nonnour"    "bonnour"    "nonjour"    "aurevoir"
#
#[[3]]
#[1] 1 1 2 7 8
#
#[[4]]
#[1] "lpoerc"
#
#[[5]]
#[1] "bonjour" "nonnour" "bonnour" "nonjour" "aurevoir"
#
#[[6]]
#[1] 7 7 7 7 7
#
#[[7]]
#[1] "nonnour"
#
#[[8]]
#[1] "bonjour" "lpoerc"    "bonnour"    "nonjour"    "aurevoir"
#
#[[9]]
#[1] 1 1 2 7 8
#
#[[10]]
#[1] "bonnour"
#
#[[11]]
#[1] "bonjour" "lpoerc"    "nonnour"    "nonjour"    "aurevoir"
```

```

#
#[[12]]
#[1] 1 1 2 7 8
#
#[[13]]
#[1] "nonjour"
#
#[[14]]
#[1] "bonjour" "lpoerc" "nonnour" "bonnour" "aurevoir"
#
#[[15]]
#[1] 1 1 2 7 8
#
#[[16]]
#[1] "aurevoir"
#
#[[17]]
#[1] "bonjour" "lpoerc" "nonnour" "bonnour" "nonjour"
#
#[[18]]
#[1] 7 8 8 8 8

print(closer_ptrn(inpt_v=c("bonjour", "lpoerc", "nonnour", "bonnour", "nonjour", "aurevoir"),
excl_v=c("nonnour", "nonjour"),
      sub_excl_v=c("nonnour")))

#[1] 3 5
#[[1]]
#[1] "bonjour"
#
#[[2]]
#[1] "lpoerc" "bonnour" "nonjour" "aurevoir"
#
#[[3]]
#[1] 1 1 7 8
#
#[[4]]
#[1] "lpoerc"
#
#[[5]]
#[1] "bonjour" "bonnour" "nonjour" "aurevoir"
#
#[[6]]
#[1] 7 7 7 7
#
#[[7]]
#[1] "bonnour"
#
#[[8]]
#[1] "bonjour" "lpoerc" "bonnour" "nonjour" "aurevoir"
#
#[[9]]
#[1] 0 1 2 7 8
#
#[[10]]
#[1] "aurevoir"
#

```

```
#[[1]]
#[1] "bonjour" "lpoerc" "nonjour" "aurevoir"
#
#[[12]]
#[1] 0 7 8 8
```

closer_ptrn_adv	<i>closer_ptrn_adv</i>
-----------------	------------------------

Description

Allow to find how patterns are far or near between each other relatively to a vector containing characters at each index ("base_v"). The function gets the sum of the indexes of each pattern letter relatively to the characters in base_v. So each pattern can be compared.

Usage

```
closer_ptrn_adv(
  inpt_v,
  res = "raw_stat",
  default_val = "?",
  base_v = c(default_val, letters),
  c_word = NA
)
```

Arguments

inpt_v	is the input vector containing all the patterns to be analyzed
res	is a parameter controlling the result. If set to "raw_stat", each word in inpt_v will come with its score (indexes of its letters relatively to base_v). If set to something else, so "c_word" parameter must be filled.
default_val	is the value that will be added to all patterns that do not equal the length of the longest pattern in inpt_v. Those get this value added to make all patterns equal in length so they can be compared, defaults to "?"
base_v	is the vector from which all pattern get its result (letters indexes for each pattern relatively to base_v), defaults to c("default_val", letters). "default_val" is another parameter and letters is all the western alphabetic letters in a vector
c_word	is a pattern from which the nearest to the farthest pattern in inpt_v will be compared

Examples

```
print(closer_ptrn_adv(inpt_v=c("aurevoir", "bonnour", "nonnour", "fin", "mois", "bonjour"),
  res="word", c_word="bonjour"))

#[[1]]
#[1] 1 5 15 17 38 65
#
#[[2]]
#[1] "bonjour" "bonnour" "aurevoir" "nonnour" "mois" "fin"
```

```
print(closer_ptrn_adv(inpt_v=c("aurevoir", "bonnour", "nonnour", "fin", "mois")))

#[[1]]
#[1] 117 107 119 37 64
#
#[[2]]
#[1] "aurevoir" "bonnour" "nonnour" "fin" "mois"
```

clusterizer_v

clusterizer_v

Description

Allow to output clusters of elements. Takes as input a vector "inpt_v" containing a sequence of number. Can also take another vector "w_v" that has the same size of inpt_v because its elements are related to it. The way the clusters are made is related to an accuracy value which is "c_val". It means that if the difference between the values associated to 2 elements is superior to c_val, these two elements are in distinct clusters. The second element of the outputed list is the begin and end value of each cluster.

Usage

```
clusterizer_v(inpt_v, w_v = NA, c_val)
```

Arguments

inpt_v	is the vector containing the sequence of number
w_v	is the vector containing the elements related to inpt_v, defaults to NA
c_val	is the accuracy of the clusterization

Examples

```
print(clusterizer_v(inpt_v=sample.int(20, 26, replace=TRUE), w_v=NA, c_val=0.9))

# [[1]]
#[[1]][[1]]
#[1] 1
#
#[[1]][[2]]
#[1] 2
#
#[[1]][[3]]
#[1] 3
#
#[[1]][[4]]
#[1] 4
#
#[[1]][[5]]
#[1] 5 5
#
#[[1]][[6]]
```

```

#[1] 6 6 6 6
#
#[[1]][[7]]
#[1] 7 7 7
#
#[[1]][[8]]
#[1] 8 8 8
#
#[[1]][[9]]
#[1] 9
#
#[[1]][[10]]
#[1] 10
#
#[[1]][[11]]
#[1] 12
#
#[[1]][[12]]
#[1] 13 13 13
#
#[[1]][[13]]
#[1] 18 18 18
#
#[[1]][[14]]
#[1] 20
#
#
#[[2]]
# [1] "1" "1" "-" "2" "2" "-" "3" "3" "-" "4" "4" "-" "5" "5" "-"
#[16] "6" "6" "-" "7" "7" "-" "8" "8" "-" "9" "9" "-" "10" "10" "-"
#[31] "12" "12" "-" "13" "13" "-" "18" "18" "-" "20" "20"

print(clusterizer_v(inpt_v=sample.int(40, 26, replace=TRUE), w_v=letters, c_val=0.29))

#[[1]]
#[[1]][[1]]
#[1] "a"
#
#[[1]][[2]]
#[1] "b"
#
#[[1]][[3]]
#[1] "c" "d"
#
#[[1]][[4]]
#[1] "e" "f"
#
#[[1]][[5]]
#[1] "g" "h" "i" "j"
#
#[[1]][[6]]
#[1] "k"
#
#[[1]][[7]]
#[1] "l"
#
#[[1]][[8]]

```

```

#[1] "m" "n"
#
#[[1]][[9]]
#[1] "o"
#
#[[1]][[10]]
#[1] "p"
#
#[[1]][[11]]
#[1] "q" "r"
#
#[[1]][[12]]
#[1] "s" "t" "u"
#
#[[1]][[13]]
#[1] "v"
#
#[[1]][[14]]
#[1] "w"
#
#[[1]][[15]]
#[1] "x"
#
#[[1]][[16]]
#[1] "y"
#
#[[1]][[17]]
#[1] "z"
#
#
#[[2]]
#[1] "13" "13" "-" "14" "14" "-" "15" "15" "-" "16" "16" "-" "17" "17" "-"
#[16] "19" "19" "-" "21" "21" "-" "22" "22" "-" "23" "23" "-" "25" "25" "-"
#[31] "27" "27" "-" "29" "29" "-" "30" "30" "-" "31" "31" "-" "34" "34" "-"
#[46] "35" "35" "-" "37" "37"

```

colins_datf

colins_datf

Description

Allow to insert vectors into a dataframe.

Usage

```
colins_datf(inpt_datf, target_col = list(), target_pos = list())
```

Arguments

<code>inpt_datf</code>	is the dataframe where vectors will be inserted
<code>target_col</code>	is a list containing all the vectors to be inserted
<code>target_pos</code>	is a list containing the vectors made of the columns names or numbers where the associated vectors from <code>target_col</code> will be inserted after

Examples

```
datf1 <- data.frame("frst_col"=c(1:5), "scd_col"=c(5:1))

print(colins_datf(inpt_datf=datf1, target_col=list(c("oui", "oui", "oui", "non", "non"),
  c("u", "z", "z", "z", "u")),
  target_pos=list(c("frst_col", "scd_col"), c("scd_col"))))

#  frst_col cur_col scd_col cur_col.1 cur_col
#1         1     oui      5      oui      u
#2         2     oui      4      oui      z
#3         3     oui      3      oui      z
#4         4     non      2      non      z
#5         5     non      1      non      u

print(colins_datf(inpt_datf=datf1, target_col=list(c("oui", "oui", "oui", "non", "non"),
  c("u", "z", "z", "z", "u")),
  target_pos=list(c(1, 2), c("frst_col"))))

#  frst_col cur_col scd_col cur_col cur_col
#1         1     oui      5        u     oui
#2         2     oui      4        z     oui
#3         3     oui      3        z     oui
#4         4     non      2        z     non
#5         5     non      1        u     non
```

col_to_row	<i>col_to_row</i>
------------	-------------------

Description

Allow to reverse a dataframe (cols become rows and rows become cols)

Usage

```
col_to_row(inpt_datf)
```

Arguments

`inpt_datf` is the inout dataframe

Examples

```
datf_test <- data.frame(c(1:11), c(11:1))

print(col_to_row(inpt_datf = datf_test))

  X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11
1  1  2  3  4  5  6  7  8  9  10  11
2 11 10  9  8  7  6  5  4  3  2  1
```

converter_date	<i>converter_date</i>
----------------	-----------------------

Description

Allow to convert any date like second/minute/hour/day/month/year to either second, minute...year. The input date should not necessarily have all its time units (second, minute...) but all the time units according to a format. Example: "snhdmy" is for second, hour, minute, day, month, year. And "mdy" is for month, day, year.

Usage

```
converter_date(inpt_date, convert_to, frmt = "snhdmy", sep_ = "-")
```

Arguments

- inpt_date is the input date
- convert_to is the time unit the input date will be converted ("s", "n", "h", "d", "m", "y")
- frmt is the format of the input date
- sep_ is the separator of the input date. For example this input date "12-07-2012" has "-" as a separator

Examples

```
print(converter_date(inpt_date="14-04-11-2024", sep_="-", frmt="hdmy", convert_to="m"))
#[1] 24299.15

print(converter_date(inpt_date="14-04-11-2024", sep_="-", frmt="hdmy", convert_to="y"))
#[1] 2024.929

print(converter_date(inpt_date="14-04-11-2024", sep_="-", frmt="hdmy", convert_to="s"))
#[1] 63900626400

print(converter_date(inpt_date="63900626400", sep_="-", frmt="s", convert_to="y"))
#[1] 2024.929

print(converter_date(inpt_date="2024", sep_="-", frmt="y", convert_to="s"))
#[1] 63873964800
```

converter_format	<i>converter_format</i>
------------------	-------------------------

Description

Allow to convert a format to another

Usage

```
converter_format(inpt_val, sep_ = "-", inpt_frmt, frmt, default_val = "00")
```

Arguments

inpt_val	is the input value that is linked to the format
sep_	is the separator of the value in inpt_val
inpt_frmt	is the format of the input value
frmt	is the format you want to convert to
default_val	is the default value given to the units that are not present in the input format

Examples

```
print(converter_format(inpt_val="23-12-05-1567", sep_="-",
                       inpt_frmt="shmy", frmt="snhdmy", default_val="00"))

#[1] "23-00-12-00-05-1567"

print(converter_format(inpt_val="23-12-05-1567", sep_="-",
                       inpt_frmt="shmy", frmt="Pnhdmy", default_val="00"))

#[1] "00-00-12-00-05-1567"
```

cost_and_taxes	<i>cost_and_taxes</i>
----------------	-----------------------

Description

Allow to calculate basic variables related to cost and taxes from a bunch of products (elements). So put every variable you know in the following order:

Usage

```
cost_and_taxes(
  qte = NA,
  pu = NA,
  prix_ht = NA,
  tva = NA,
  prix_ttc = NA,
  prix_tva = NA,
```

```

    pu_ttc = NA,
    adjust = NA,
    prix_d_ht = NA,
    prix_d_ttc = NA,
    pu_d = NA,
    pu_d_ttc = NA
  )

```

Arguments

qte	is the quantity of elements
pu	is the price of a single elements without taxes
prix_ht	is the duty-free price of the whole set of elements
tva	is the percentage of all taxes
prix_ttc	is the price of all the elements with taxes
prix_tva	is the cost of all the taxes
pu_ttc	is the price of a single element taxes included
adjust	is the discount percentage
prix_d_ht	is the free-duty price of an element after discount
prix_d_ttc	is the price with taxes of an element after discount
pu_d	is the price of a single element after discount and without taxes
pu_d_ttc	is the free-duty price of a single element after discount

Examples

```

print(cost_and_taxes(pu=45, prix_ttc=2111, qte=23))

# [1] 23.000000 45.000000 45.000000 1.039614 2111.000000 1076.000000
# [7] 45.000000 NA NA NA NA NA

```

cumulated_rows	<i>cumulated_rows</i>
----------------	-----------------------

Description

Output a vector of size that equals to the rows number of the input dataframe, with TRUE value at the indices corresponding to the row where at least a cell of any column is equal to one of the values inputed in values_v

Usage

```
cumulated_rows(inpt_datf, values_v = c())
```

Arguments

inpt_datf	is the input data.frame
values_v	is a vector containing all the values that a cell has to equal to return a TRUE value in the output vector at the index corresponding to the row of the cell

Examples

```
datf_teste <- data.frame(c(1:10), c(10:1))

print(datf_teste)

      c.1.10. c.10.1.
1         1      10
2         2       9
3         3       8
4         4       7
5         5       6
6         6       5
7         7       4
8         8       3
9         9       2
10        10       1

print(cumulated_rows(inpt_datf = datf_teste, values_v = c(2, 3)))

[1]  FALSE TRUE TRUE  FALSE  FALSE  FALSE  FALSE TRUE TRUE  FALSE
```

cumulated_rows_na	<i>cumulated_rows_na</i>
-------------------	--------------------------

Description

Output a vector of size that equals to the rows number of the input dataframe, with TRUE value at the indices corresponding to the row where at least a cell of any column is equal to NA.

Usage

```
cumulated_rows_na(inpt_datf)
```

Arguments

`inpt_datf` is the input data.frame

Examples

```
datf_teste <- data.frame(c(1, 2, 3, 4, 5, NA, 7), c(10, 9, 8, NA, 7, 6, NA))

print(datf_teste)

      c.1..2..3..4..5..NA..7. c.10..9..8..NA..7..6..NA.
1                             1                        10
2                             2                         9
3                             3                         8
4                             4                        NA
5                             5                         7
6                             NA                        6
7                             7                        NA

print(cumulated_rows_na(inpt_datf = datf_teste))
```

```
[1] FALSE FALSE FALSE TRUE FALSE TRUE TRUE
```

cutr_v

cutr_v

Description

Allow to reduce all the elements in a vector to a defined size of nchar

Usage

```
cutr_v(inpt_v, until = "min")
```

Arguments

inpt_v is the input vector

until is the maximum size of nchar authorized by an element, defaults to "min", it means the shortest element in the list

Examples

```
test_v <- c("oui", "nonon", "ez", "aa", "a", "dsfsdsds")

print(cutr_v(inpt_v=test_v, until="min"))

#[1] "o" "n" "e" "a" "a" "d"

print(cutr_v(inpt_v=test_v, until=3))

#[1] "oui" "non" "ez" "aa" "a" "dsf"
```

cut_v

cut_v

Description

Allow to convert a vector to a dataframe according to a separator.

Usage

```
cut_v(inpt_v, sep_ = "")
```

Arguments

inpt_v is the input vector

sep_ is the separator of the elements in inpt_v, defaults to ""

Examples

```
print(cut_v(inpt_v=c("oui", "non", "oui", "non")))

#      X.o. X.u. X.i.
#oui  "o"  "u"  "i"
#non  "n"  "o"  "n"
#oui  "o"  "u"  "i"
#non  "n"  "o"  "n"

print(cut_v(inpt_v=c("ou-i", "n-on", "ou-i", "n-on"), sep_="-"))

#      X.ou. X.i.
#ou-i  "ou"  "i"
#n-on  "n"   "on"
#ou-i  "ou"  "i"
#n-on  "n"   "on"
```

data_gen

*data_gen***Description**

Allo to generate in a csv all kind of data you can imagine according to what you provide

Usage

```
data_gen(
  type_ = c("number", "mixed", "string"),
  strt_l = c(0, 0, 10),
  nb_r = c(50, 10, 40),
  output = NA,
  properties = c("1-5", "1-5", "1-5"),
  type_distrib = c("random", "random", "random"),
  str_source = c("a", "b", "c", "d", "e", "f", "g", "h", "i", "j", "k", "l", "m",
    "o", "p", "q", "r", "s", "t", "u", "v", "w", "x", "y", "z"),
  round_l = c(0, 0, 0),
  sep_ = ",",
)
```

Arguments

type_	is a vector. Its arguments designates a column, a column can be made of numbers ("number"), string ("string") or both ("mixed")
strt_l	is a vector containing for each column the row from which the data will begin to be generated
nb_r	is a vector containing for each column, the number of row full from generated data
output	is the name of the output csv file, defaults to NA so no csv will be outputted by default

properties	is linked to type_distri because it is the parameters ("min_val-max_val") for "random type", ("u-x") for the poisson distribution, ("u-d") for gaussian distribution
type_distri	is a vector which, for each column, associate a type of distribution ("random", "poisson", "gaussian"), it means that not only the number but also the length of the string will be randomly generated according to these distribution laws
str_source	is the source (vector) from which the character creating random string are (default set to the occidental alphabet)
round_l	is a vector which, for each column containing number, associate a round value, if the type of the value is numeric
sep_	is the separator used to write data in the csv

Value

new generated data in addition to saving it in the output

Examples

```
print(data_gen())
```

```
#  X1  X2  X3
#1  4   2 <NA>
#2  2   4 <NA>
#3  5   2 <NA>
#4  2 abcd <NA>
#5  4 abcd <NA>
#6  2   4 <NA>
#7  2  abc <NA>
#8  4  abc <NA>
#9  4   3 <NA>
#10 4  abc abcd
#11 5 <NA>  abc
#12 4 <NA>  abc
#13 1 <NA>   ab
#14 1 <NA> abcde
#15 2 <NA>   abc
#16 4 <NA>    a
#17 1 <NA>  abcd
#18 4 <NA>   ab
#19 2 <NA>  abcd
#20 3 <NA>   ab
#21 3 <NA>  abcd
#22 2 <NA>    a
#23 4 <NA>   abc
#24 1 <NA>  abcd
#25 4 <NA>   abc
#26 4 <NA>   ab
#27 2 <NA>   abc
#28 5 <NA>   ab
#29 3 <NA>   abc
#30 5 <NA>  abcd
#31 2 <NA>   abc
#32 2 <NA>   abc
#33 1 <NA>   ab
#34 5 <NA>    a
```

```
#35 4 <NA>    ab
#36 1 <NA>    ab
#37 1 <NA> abcde
#38 5 <NA>    abc
#39 4 <NA>    ab
#40 5 <NA> abcde
#41 2 <NA>    ab
#42 3 <NA>    ab
#43 2 <NA>    ab
#44 4 <NA>    abcd
#45 5 <NA>    abcd
#46 3 <NA>    abcd
#47 2 <NA>    abcd
#48 3 <NA>    abcd
#49 3 <NA>    abcd
#50 4 <NA>    a
```

```
print(data_gen(strt_l=c(0, 0, 0), nb_r=c(5, 5, 5)))
```

```
#  X1    X2    X3
#1  2     a   abc
#2  3 abcde   ab
#3  4 abcde    a
#4  1     3   abc
#5  3     a  abcd
```

data_mesup

data_mesup

Description

Allow to automatically arrange 1 dimensional data according to vector and parameters

Usage

```
data_mesup(
  data,
  cols = NA,
  file_ = NA,
  sep_ = ";",
  organisation = c(2, 1, 0),
  unic_sep1 = "_",
  unic_sep2 = "-"
)
```

Arguments

data	is the data provided (vector) each column is separated by a unic separator and each dataset from the same column is separated by another unic separator (ex: <code>c("", c("d", "-", "e", "-", "f"), "", c("a", "a1", "-", "b", "-", "c", "c1"), "-")</code>)
cols	are the colnames of the data generated in a csv
file_	is the file to which the data will be outputed, defaults to NA which means that the functio will return the dataframe generated and won't write it to a csv file

sep_ is the separator of the csv outputed

organisation is the way variables include themselves, for instance ,resuming precedent example, if organisation=c(1, 0) so the data output will be: d, a d, a1 e, c f, c f, c1

unic_sep1 is the unic separator between variables (default is "_")

unic_sep2 is the unic separator between datasets (default is "-")

Examples

```
print(data_meshup(data=c("_", c("-", "d", "-", "e", "-", "f"), "_",
  c("-", "a", "a1", "-", "B", "r", "uy", "-", "c", "c1"), "_"), organisation=c(1, 0)))

# X1 X2
#1 d a
#2 d a1
#3 e B
#4 e r
#5 e uy
#6 f c
#7 f c1
```

date_addr

date_addr

Description

Allow to add or subtract two dates that have the same time unit or not

Usage

```
date_addr(
  date1,
  date2,
  add = FALSE,
  frmt1,
  frmt2 = frmt1,
  sep_ = "-",
  convert_to = "dmy"
)
```

Arguments

date1 is the date from which the second date will be added or subtracted

date2 is the date that will be added or will subtract date1

add equals to FALSE if you want date1 - date2 and TRUE if you want date1 + date2

frmt1 is the format of date1 (snhdmy) (second, minute, hour, day, monthn year)

frmt2 is the format of date2 (snhdmy)

sep_ is the separator of date1 and date2

convert_to is the format of the outputed date

Examples

```

print(date_addr(date1="25-02", date2="58-12-08", frmt1="dm", frmt2="shd", sep_="-",
               convert_to="dmy"))

#[1] "18-2-0"

print(date_addr(date1="25-02", date2="58-12-08", frmt1="dm", frmt2="shd", sep_="-",
               convert_to="dmy", add=TRUE))

#[1] "3-3-0"

print(date_addr(date1="25-02-2024", date2="1-01", frmt1="dmy", frmt2="dm", sep_="-",
               convert_to="dmy", add=TRUE))

#[1] "27-3-2024"

print(date_addr(date1="25-02-2024", date2="1-01", frmt1="dmy", frmt2="dm", sep_="-",
               convert_to="dmy", add=FALSE))

#[1] "23-1-2024"

print(date_addr(date1="25-02-2024", date2="1-01", frmt1="dmy", frmt2="dm", sep_="-",
               convert_to="n", add=FALSE))

#[1] "1064596320"

print(date_addr(date1="25-02-2024", date2="1-01", frmt1="dmy", frmt2="dm", sep_="-",
               convert_to="s", add=FALSE))

#[1] "63875779200"

```

```

date_converter_reverse
      date_converter_reverse

```

Description

Allow to convert single date value like 2025.36 year to a date like second/minutehour/day/month/year (snhdmy)

Usage

```
date_converter_reverse(inpt_date, convert_to = "dmy", frmt = "y", sep_ = "-")
```

Arguments

inpt_date	is the input date
convert_to	is the date format the input date will be converted
frmt	is the time unit of the input date
sep_	is the separator of the outputed date

Examples

```
print(date_converter_reverse(inpt_date="2024.929", convert_to="hmy", frmt="y", sep="-"))

#[1] "110-11-2024"

print(date_converter_reverse(inpt_date="2024.929", convert_to="dmy", frmt="y", sep="-"))

#[1] "4-11-2024"

print(date_converter_reverse(inpt_date="2024.929", convert_to="hdmy", frmt="y", sep="-"))

#[1] "14-4-11-2024"

print(date_converter_reverse(inpt_date="2024.929", convert_to="dhym", frmt="y", sep="-"))

#[1] "4-14-2024-11"
```

datf_appendr	<i>datf_appendr</i>
--------------	---------------------

Description

Allow to append all columns of a dataframe in a vector.

Usage

```
datf_appendr(inpt_datf)
```

Arguments

inpt_datf is the input dataframe

Examples

```
datf_teste <- data.frame("col1" = c(1:5), "col2" = c(5:1))

print(datf_appendr(inpt_datf = datf_teste))

[1] 1 2 3 4 5 5 4 3 2 1
```

datf_appendr2	<i>datf_appendr2</i>
---------------	----------------------

Description

Allow to append all columns of a dataframe in a vector, specifying the column types ("integer" or "character"), see examples

Usage

```
datf_appendr2(inpt_datf, chs_type = "integer")
```

Arguments

`inpt_datf` is the inout dataframe

Examples

```
datf_teste <- data.frame("col1" = c(1:5), "col2" = c(5:1),
  "col3" = c("oui", "oui", "oui", "non", "non"))

print(datf_appendr2(inpt_datf = datf_teste, chs_type = "integer"))

[1] 1 2 3 4 5 5 4 3 2 1

print(datf_appendr2(inpt_datf = datf_teste, chs_type = "character"))

[1] "oui" "oui" "oui" "non" "non"
```

<code>datf_insertr</code>	<i><code>datf_insertr</code></i>
---------------------------	----------------------------------

Description

Insert rows after certain indexes, see examples

Usage

```
datf_insertr(inpt_datf, ids_vec, val_l)
```

Arguments

`inpt_datf` is the input dataframe
`ids_vec` is the ids where the rows has to be inserted after
`val_l` is a list containing all the rows (vector) to be inserted, linked to every index within `ids_vec`

Examples

```
datf <- data.frame(c(1:4), c(4:1))
print(datf)

  c.1.4. c.4.1.
1      1      4
2      2      3
3      3      2
4      4      1

print(datf_insertr(inpt_datf = datf, ids_vec = c(1, 3), val_l = list(c("non", "non"), c("non", "non"))))

  c.1.4. c.4.1.
1      1      4
2      2      3
3      3      2
4      4      1
5     non     non
6     non     non
```

```

1      1      4
2      non    non
21     2      3
3      3      2
5      oui    oui
4      4      1

```

```
print(datf_insertr(inpt_datf = datf, ids_vec = c(1, 3), val_l = list(c("non", "non"))))
```

```

c.1.4. c.4.1.
1      1      4
2      non    non
21     2      3
3      3      2
5      non    non
4      4      1

```

```
datf_row_appendr    datf_row_appendr
```

Description

Allow to append all rows of a dataframe in a vector.

Usage

```
datf_row_appendr(inpt_datf)
```

Arguments

`inpt_datf` is the input dataframe

Examples

```
datf_teste <- data.frame("col1" = c(1:5), "col2" = c(5:1))
```

```
print(datf_appendr(inpt_datf = datf_teste))
```

```

col1 col2 col1 col2 col1 col2 col1 col2 col1 col2
1     5     2     4     3     3     4     2     5     1

```

```
datf_row_appendr2    datf_row_appendr2
```

Description

Allow to append all rows of a dataframe in a vector, specifying the column types ("integer" or "character"), see examples

Usage

```
datf_row_appendr2(inpt_datf, chs_type = "integer")
```

Arguments

inpt_datf is the inout dataframe

Examples

```
datf_teste <- data.frame("col1" = c(1:5), "col2" = c(5:1),
  "col3" = c("oui", "oui", "oui", "non", "non"))

print(datf_row_appendr2(inpt_datf = datf_teste, chs_type = "integer"))

NULL

print(datf_row_appendr2(inpt_datf = datf_teste, chs_type = "character"))

col1 col2 col3 col1 col2 col3 col1 col2 col3 col1 col2 col3 col1
"1"   "5" "oui"  "2"   "4" "oui"  "3"   "3" "oui"  "4"   "2" "non"  "5"
col2 col3
"1"  "non"
```

dcr_untl	<i>dcr_untl</i>
----------	-----------------

Description

Allow to get the final value of a incremental or decremental loop.

Usage

```
dcr_untl(strt_val, cr_val, stop_val = 0)
```

Arguments

strt_val is the start value
cr_val is the incremental (or decremental value)
stop_val is the value where the loop has to stop

Examples

```
print(dcr_untl(strt_val=50, cr_val=-5, stop_val=5))

#[1] 9

print(dcr_untl(strt_val=50, cr_val=5, stop_val=450))

#[1] 80
```

dcr_val	<i>dcr_val</i>
---------	----------------

Description

Allow to get the end value after an incremental (or decremental loop)

Usage

```
dcr_val(strt_val, cr_val, stop_val = 0)
```

Arguments

strt_val	is the start value
cr_val	is the incremental or decremental value
stop_val	is the value the loop has to stop

Examples

```
print(dcr_val(strt_val=50, cr_val=-5, stop_val=5))

#[1] 5

print(dcr_val(strt_val=47, cr_val=-5, stop_val=5))

#[1] 7

print(dcr_val(strt_val=50, cr_val=5, stop_val=450))

#[1] 450

print(dcr_val(strt_val=53, cr_val=5, stop_val=450))

#[1] 448
```

depth_pairs_findr	<i>depth_pairs_findr</i>
-------------------	--------------------------

Description

Takes the pair vector as an input and associate to each pair a level of depth, see examples

Usage

```
depth_pairs_findr(inpt)
```

Arguments

inpt	is the pair vector
------	--------------------

Examples

```
print(depth_pairs_findr(c(1, 1, 2, 3, 3, 4, 4, 2, 5, 6, 7, 7, 6, 5)))

[1] 1 1 1 2 2 2 2 1 1 2 3 3 2 1
```

diff_datf	<i>diff_datf</i>
-----------	------------------

Description

Returns a vector with the coordinates of the cell that are not equal between 2 dataframes (row, column).

Usage

```
diff_datf(datf1, datf2)
```

Arguments

datf1	is an an input dataframe
datf2	is an an input dataframe

Examples

```
datf1 <- data.frame(c(1:6), c("oui", "oui", "oui", "oui", "oui", "oui"), c(6:1))

datf2 <- data.frame(c(1:7), c("oui", "oui", "oui", "oui", "non", "oui", "zz"))

print(diff_datf(datf1=datf1, datf2=datf2))

#[1] 5 1 5 2
```

dynamic_idx_converttr	<i>dynamic_idx_converttr</i>
-----------------------	------------------------------

Description

Allow to convert the indices of vector ('from_v_ids') which are related to the each characters of a vector (from_v_val), to fit the newly established characters of the vector from_v_val, see examples.

Usage

```
dynamic_idx_converttr(from_v_ids, from_v_val)
```


Arguments

`from_v_ids` is the input vector of indices

`from_v_val` is the input vector of elements, or just the total number of characters of the elementsq in the vector

Examples

```
print(dynamic_idx_converttr(from_v_ids = c(1, 5), from_v_val = c("oui", "no", "ouI")))

[1] 1 2

print(dynamic_idx_converttr(from_v_ids = c(1, 6), from_v_val = c("oui", "no", "ouI")))

[1] 1 3
```

edm_arrangr	<i>edm_arranger</i>
-------------	---------------------

Description

Arranges data according to the values of a variable, see examples

Usage

```
edm_arrangr(inpt_datf, col_order, top_n = 10, decreasing = TRUE)
```

Arguments

`inpt_datf` is the input dataframe

`col_order` is the column names or the column number of the variable that will be used to arrange data

`top_n` is the top values

Examples

```
print(edm_arrangr(inpt_datf = mtcars, col_order = "wt", top_n = 15, decreasing = FALSE))
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Lotus Europa	30.4	4	95.1	113	3.77	1.513	16.90	1	1	5	2
Honda Civic	30.4	4	75.7	52	4.93	1.615	18.52	1	1	4	2
Toyota Corolla	33.9	4	71.1	65	4.22	1.835	19.90	1	1	4	1
Fiat X1-9	27.3	4	79.0	66	4.08	1.935	18.90	1	1	4	1
Porsche 914-2	26.0	4	120.3	91	4.43	2.140	16.70	0	1	5	2
Fiat 128	32.4	4	78.7	66	4.08	2.200	19.47	1	1	4	1
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
Toyota Corona	21.5	4	120.1	97	3.70	2.465	20.01	1	0	3	1
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
Ferrari Dino	19.7	6	145.0	175	3.62	2.770	15.50	0	1	5	6
Volvo 142E	21.4	4	121.0	109	4.11	2.780	18.60	1	1	4	2
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2

```
Ford Pantera L 15.8    8 351.0 264 4.22 3.170 14.50  0  1    5    4
Merc 240D          24.4   4 146.7  62 3.69 3.190 20.00  1  0    4    2
```

```
print(edm_arrangr(inpt_datf = mtcars, col_order = "wt", top_n = 10, decreasing = TRUE))
      mpg cyl  disp  hp drat   wt  qsec vs am gear carb
Lincoln Continental 10.4   8 460.0 215 3.00 5.424 17.82  0  0    3    4
Chrysler Imperial   14.7   8 440.0 230 3.23 5.345 17.42  0  0    3    4
Cadillac Fleetwood  10.4   8 472.0 205 2.93 5.250 17.98  0  0    3    4
Merc 450SE           16.4   8 275.8 180 3.07 4.070 17.40  0  0    3    3
Pontiac Firebird     19.2   8 400.0 175 3.08 3.845 17.05  0  0    3    2
Camaro Z28           13.3   8 350.0 245 3.73 3.840 15.41  0  0    3    4
Merc 450SLC          15.2   8 275.8 180 3.07 3.780 18.00  0  0    3    3
Merc 450SL           17.3   8 275.8 180 3.07 3.730 17.60  0  0    3    3
Duster 360           14.3   8 360.0 245 3.21 3.570 15.84  0  0    3    4
Maserati Bora        15.0   8 301.0 335 3.54 3.570 14.60  0  1    5    8
Dodge Challenger     15.5   8 318.0 150 2.76 3.520 16.87  0  0    3    2
```

edm_arrangr2

edm_arranger2

Description

Same as `edm_arrangr` but takes in count power like numbers for the values of the variable used to arrange the data.

Usage

```
edm_arrangr2(inpt_datf, col_order, top_n = 10, decreasing = TRUE)
```

Arguments

`inpt_datf` is the input dataframe

`col_order` is the column names or the column number of the variable that will be used to arrange data

`top_n` is the top values

Examples

```
print(edm_arrangr2(inpt_datf = mtcars, col_order = "wt", top_n = 15, decreasing = FALSE))
      mpg cyl  disp  hp drat   wt  qsec vs am gear carb
Lotus Europa        30.4   4  95.1 113 3.77 1.513 16.90  1  1    5    2
Honda Civic          30.4   4  75.7  52 4.93 1.615 18.52  1  1    4    2
Toyota Corolla       33.9   4  71.1  65 4.22 1.835 19.90  1  1    4    1
Fiat X1-9            27.3   4  79.0  66 4.08 1.935 18.90  1  1    4    1
Porsche 914-2        26.0   4 120.3  91 4.43 2.140 16.70  0  1    5    2
Fiat 128             32.4   4  78.7  66 4.08 2.200 19.47  1  1    4    1
Datsun 710           22.8   4 108.0  93 3.85 2.320 18.61  1  1    4    1
Toyota Corona        21.5   4 120.1  97 3.70 2.465 20.01  1  0    3    1
Mazda RX4            21.0   6 160.0 110 3.90 2.620 16.46  0  1    4    4
Ferrari Dino         19.7   6 145.0 175 3.62 2.770 15.50  0  1    5    6
```

```
Volvo 142E      21.4   4 121.0 109 4.11 2.780 18.60  1  1   4   2
Mazda RX4 Wag  21.0   6 160.0 110 3.90 2.875 17.02  0  1   4   4
Merc 230        22.8   4 140.8  95 3.92 3.150 22.90  1  0   4   2
Ford Pantera L 15.8   8 351.0 264 4.22 3.170 14.50  0  1   5   4
Merc 240D       24.4   4 146.7  62 3.69 3.190 20.00  1  0   4   2
```

```
print(edm_arrangr2(inpt_datf = mtcars, col_order = "wt", top_n = 10, decreasing = TRUE))
      mpg cyl  disp  hp drat   wt  qsec vs am gear carb
Lincoln Continental 10.4   8 460.0 215 3.00 5.424 17.82  0  0   3   4
Chrysler Imperial  14.7   8 440.0 230 3.23 5.345 17.42  0  0   3   4
Cadillac Fleetwood  10.4   8 472.0 205 2.93 5.250 17.98  0  0   3   4
Merc 450SE          16.4   8 275.8 180 3.07 4.070 17.40  0  0   3   3
Pontiac Firebird    19.2   8 400.0 175 3.08 3.845 17.05  0  0   3   2
Camaro Z28          13.3   8 350.0 245 3.73 3.840 15.41  0  0   3   4
Merc 450SLC         15.2   8 275.8 180 3.07 3.780 18.00  0  0   3   3
Merc 450SL          17.3   8 275.8 180 3.07 3.730 17.60  0  0   3   3
Duster 360          14.3   8 360.0 245 3.21 3.570 15.84  0  0   3   4
Maserati Bora       15.0   8 301.0 335 3.54 3.570 14.60  0  1   5   8
Dodge Challenger    15.5   8 318.0 150 2.76 3.520 16.87  0  0   3   2
```

edm_group_by1

edm_group_by1

Description

Performs a group by (different algorithm than `edm_group_by2`), see examples

Usage

```
edm_group_by1(inpt_datf, grp_v = c())
```

Arguments

`inpt_datf` is the input dataframe

`grp_v` is the vector containiong the column names or the column numbers to perform the group by, see examples

Examples

```
datf <- data.frame("col1" = c("A", "B", "B", "A", "C", "B"),
                  "col2" = c("E", "R", "E", "E", "R", "R"),
                  "col3" = c("P", "P", "O", "O", "P", "O"))
```

```
print(datf)
```

```
   col1 col2 col3
1     A     E     P
2     B     R     P
3     B     E     O
4     A     E     O
5     C     R     P
6     B     R     O
```

```
print(edm_group_by1(inpt_datf = datf, grp_v = c("col1")))
```

```
  col1 col2 col3
1     A     E   P
4     A     E   O
2     B     R   P
3     B     E   O
6     B     R   O
5     C     R   P
```

```
print(edm_group_by1(inpt_datf = datf, grp_v = c("col1", "col2")))
```

```
  col1 col2 col3
1     A     E   P
4     A     E   O
2     B     R   P
6     B     R   O
3     B     E   O
5     C     R   P
```

```
print(edm_group_by1(inpt_datf = datf, grp_v = c("col2", "col1", "col3")))
```

```
  col2 col1 col3
1     E     A   P
4     E     A   O
3     E     B   O
2     R     B   P
6     R     B   O
5     R     C   P
```

```
print(edm_group_by1(inpt_datf = datf, grp_v = c("col2", "col1", "col3")))
```

```
  col2 col1 col3
1     E     A   P
4     E     A   O
3     E     B   O
2     R     B   P
6     R     B   O
5     R     C   P
```

edm_group_by2

edm_group_by2

Description

Performs a group by (different algorithm that `edm_group_by1`), see examples

Usage

```
edm_group_by2(inpt_datf, grp_v)
```

Arguments

`inpt_datf` is the input dataframe

`grp_v` is the vector containiong the column names or the column numbers to perform the group by, see examples

Examples

```
datf <- data.frame("col1" = c("A", "B", "B", "A", "C", "B"),
                  "col2" = c("E", "R", "E", "E", "R", "R"),
                  "col3" = c("P", "P", "O", "O", "P", "O"))

print(datf)
```

	col1	col2	col3
1	A	E	P
2	B	R	P
3	B	E	O
4	A	E	O
5	C	R	P
6	B	R	O

```
print(edm_group_by2(inpt_datf = datf, grp_v = c("col1")))
```

	col1	col2	col3
1	A	E	P
4	A	E	O
2	B	R	P
3	B	E	O
6	B	R	O
5	C	R	P

```
print(edm_group_by2(inpt_datf = datf, grp_v = c("col1", "col2")))
```

	col1	col2	col3
1	A	E	P
4	A	E	O
3	B	E	O
2	B	R	P
6	B	R	O
5	C	R	P

```
print(edm_group_by2(inpt_datf = datf, grp_v = c("col2", "col1")))
```

	col2	col1	col3
1	E	A	P
4	E	A	O
3	E	B	O
2	R	B	P
6	R	B	O
5	R	C	P

Description

Performs a pivot longer on dataframe, see examples. The synthax for variables must be value_id-modalitie_var1.modalitie_var2...

Usage

```
edm_pivot_longer1(
  inpt_datf,
  col_vars = c(),
  col_vars_to = c(),
  individual_col,
  null_value = c(0),
  nvr_here = "?"
)
```

Arguments

`inpt_datf` is the input dataframe
`col_vars` is a vector containing the column names or column numbers of the variables
`col_vars_to` is a vector containing the varaibles to which will be assign the modalities, see examples
`individual_col` is the column name or the column number of the individuals

Examples

```
datf <- data.frame("individuals" = c(1, 2, 3),
                  c(1, 2, 3),
                  c(6, 0, 2),
                  c(7, 0, 0),
                  c(0, 0, 0),
                  c(1, 0, 4),
                  c(3, 0, 8),
                  c(9, 0, 0),
                  c(11, 0, 5))

colnames(datf)[2:ncol(datf)] <- c("val1-A.R",
                                "val1-A.T",
                                "val1-B.R",
                                "val1-B.T",
                                "val2-A.R",
                                "val2-A.T",
                                "val2-B.R",
                                "val2-B.T")

datf2 <- data.frame("individuals" = c(1, 2, 3),
                  c(7, 0, 2),
                  c(1, 0, 4),
                  c(9, 0, 8),
                  c(11, 22, 5))
colnames(datf2)[2:ncol(datf2)] <- c(
  "val1-A",
  "val1-B",
```

```

        "val2-A",
        "val2-B"
    )

print(datf)

  individuals vall-A.R vall-A.T vall-B.R vall-B.T val2-A.R val2-A.T val2-B.R
1           1         1         6         7         0         1         3         9
2           2         2         0         0         0         0         0         0
3           3         3         2         0         0         4         8         0
  val2-B.T
1         11
2          0
3          5

print(edm_pivot_longer1(inpt_datf = datf,
                        col_vars = c(2:9),
                        individual_col = 1,
                        col_vars_to = c("Shape", "Way"),
                        null_value = c(0)))

  individuals Shape Way vall val2
1           1     A   R    1    1
2           1     A   T    6    3
3           1     B   R    7    9
4           1     B   T    0   11
5           2     A   R    2    0
6           3     A   R    3    4
7           3     A   T    2    8
8           3     B   T    0    5

print(datf2)

  individuals vall-A vall-B val2-A val2-B
1           1         7         1         9         11
2           2         0         0         0         22
3           3         2         4         8         5

print(edm_pivot_longer1(inpt_datf = datf2,
                        col_vars = c(2:5),
                        individual_col = 1,
                        col_vars_to = c("Shape"),
                        null_value = c(0)))

  individuals Shape vall val2
1           1     A    7    9
2           1     B    1   11
3           2     B    0   22
4           3     A    2    8
5           3     B    4    5

```

Description

Performs a pivot longer on dataframe keeping the null values, see examples. The syntax for variables must be value_id-modalitie_var1.modalitie_var2...

Usage

```
edm_pivot_longer2(inpt_datf, col_vars = c(), col_vars_to = c(), individual_col)
```

Arguments

`inpt_datf` is the input dataframe
`col_vars` is a vector containing the column names or column numbers of the variables
`col_vars_to` is a vector containing the variables to which will be assign the modalities, see examples
`individual_col` is the column name or the column number of the individuals

Examples

```
datf <- data.frame("individuals" = c(1, 2, 3),
                  c(1, 2, 3),
                  c(6, 0, 2),
                  c(7, 0, 0),
                  c(0, 0, 0),
                  c(1, 0, 4),
                  c(3, 0, 8),
                  c(9, 0, 0),
                  c(11, 0, 5))

colnames(datf)[2:ncol(datf)] <- c("val1-A.R",
                                "val1-A.T",
                                "val1-B.R",
                                "val1-B.T",
                                "val2-A.R",
                                "val2-A.T",
                                "val2-B.R",
                                "val2-B.T")

datf2 <- data.frame("individuals" = c(1, 2, 3),
                  c(7, 0, 2),
                  c(1, 0, 4),
                  c(9, 0, 8),
                  c(11, 22, 5))
colnames(datf2)[2:ncol(datf2)] <- c(
  "val1-A",
  "val1-B",
  "val2-A",
  "val2-B"
)

print(datf)

  individuals val1-A.R val1-A.T val1-B.R val1-B.T val2-A.R val2-A.T val2-B.R
1           1         1         6         7         0         1         3         9
```



```

2          2          2          0          0          0          0          0          0
3          3          3          2          0          0          4          8          0

```

```

  val2-B.T

```

```

1          11
2           0
3           5

```

```

print(edm_pivot_longer2(inpt_datf = datf,
                        col_vars = c(2:9),
                        individual_col = 1,
                        col_vars_to = c("Shape", "Way")))

```

```

  individuals Shape Way val1 val2
1            1    A   R     1     1
2            1    A   T     6     3
3            1    B   R     7     9
4            1    B   T     0    11
5            2    A   R     2     0
6            2    A   T     0     0
7            2    B   R     0     0
8            2    B   T     0     0
9            3    A   R     3     4
10           3    A   T     2     8
11           3    B   R     0     0
12           3    B   T     0     5

```

```

print(datf2)

```

```

  individuals val1-A val1-B val2-A val2-B
1            1       7       1       9    11
2            2       0       0       0    22
3            3       2       4       8     5

```

```

print(edm_pivot_longer2(inpt_datf = datf2,
                        col_vars = c(2:5),
                        individual_col = 1,
                        col_vars_to = c("Shape")))

```

```

  individuals Shape val1 val2
1            1    A     7     9
2            1    B     1    11
3            2    A     0     0
4            2    B     0    22
5            3    A     2     8
6            3    B     4     5

```

```

edm_pivot_wider1  edm_pivot_wider1

```

Description

Performs a pivot wider to a dataframe, see examples.

Usage

```
edm_pivot_wider1(inpt_datf, col_vars = c(), col_vals = c(), individual_col)
```

Arguments

`inpt_datf` is the input dataframe

`col_vars` is a vector containig the column names or column numbers of the variables to pivot

`col_vals` is a vector containing the column numbers or column names of the values to pivot

`individual_col` is the column name or column number of the individuals

Examples

```
datf2 <- data.frame("individual" = c(1, 1, 1, 2, 3, 3),
                    "var1" = c("A", "A", "B", "B", "B", "A"),
                    "val1" = c(6, 7, 1, 0, 4, 2),
                    "val2" = c(3, 9, 11, 22, 5, 8))
datf <- data.frame("individual" = c(1, 1, 1, 2, 3, 3),
                  "var1" = c("A", "A", "B", "B", "B", "A"),
                  "var2" = c("R", "T", "T", "R", "T", "R"),
                  "val1" = c(6, 7, 1, 0, 4, 2),
                  "val2" = c(3, 9, 11, 22, 5, 8))
```

```
print(datf)
```

	individual	var1	var2	val1	val2
1	1	A	R	6	3
2	1	A	T	7	9
3	1	B	T	1	11
4	2	B	R	0	22
5	3	B	T	4	5
6	3	A	R	2	8

```
print(datf2)
```

	individual	var1	val1	val2
1	1	A	6	3
2	1	A	7	9
3	1	B	1	11
4	2	B	0	22
5	3	B	4	5
6	3	A	2	8

```
print(edm_pivot_wider1(
  inpt_datf = datf,
  col_vars = c(2, 3),
  col_vals = c(4, 5),
  individual_col = 1)
)
```

	individuals	val1-A.R	val1-A.T	val1-B.R	val1-B.T	val2-A.R	val2-A.T	val2-B.R
1	1	6	7	0	1	3	9	0
2	2	0	0	0	0	0	0	22
3	3	2	0	0	4	8	0	0

```

      val2-B.T
1          11
2           0
3           5

print(edm_pivot_wider1(
      inpt_datf = datf2,
      col_vars = c(2),
      col_vals = c(3, 4),
      individual_col = 1)
)

      individuals val1-A val1-B val2-A val2-B
1              1      7      1      9      11
2              2      0      0      0      22
3              3      2      4      8      5

```

```
edm_pivot_wider2      edm_pivot_wider2
```

Description

Performs a pivot wider to a dataframe with a different algorithm than `edm_pivot_wider`, see examples.

Usage

```
edm_pivot_wider2(inpt_datf, col_vars = c(), col_vals = c(), individual_col)
```

Arguments

`inpt_datf` is the input dataframe

`col_vars` is a vector containig the column names or column numbers of the variables to pivot

`col_vals` is a vector containing the column numbers or column names of the values to pivot

`individual_col` is the column name or column number of the individuals

Examples

```

datf2 <- data.frame("individual" = c(1, 1, 1, 2, 3, 3),
                    "var1" = c("A", "A", "B", "B", "B", "A"),
                    "val1" = c(6, 7, 1, 0, 4, 2),
                    "val2" = c(3, 9, 11, 22, 5, 8))
datf <- data.frame("individual" = c(1, 1, 1, 2, 3, 3),
                    "var1" = c("A", "A", "B", "B", "B", "A"),
                    "var2" = c("R", "T", "T", "R", "T", "R"),
                    "val1" = c(6, 7, 1, 0, 4, 2),
                    "val2" = c(3, 9, 11, 22, 5, 8))

print(datf)

```

```

individual var1 var2 val1 val2
1          1    A    R     6     3
2          1    A    T     7     9
3          1    B    T     1    11
4          2    B    R     0    22
5          3    B    T     4     5
6          3    A    R     2     8

print(datf2)

individual var1 val1 val2
1          1    A     6     3
2          1    A     7     9
3          1    B     1    11
4          2    B     0    22
5          3    B     4     5
6          3    A     2     8

print(edm_pivot_wider2(
  inpt_datf = datf,
  col_vars = c(2, 3),
  col_vals = c(4, 5),
  individual_col = 1)
)

individuals val1-A.R val1-A.T val1-B.R val1-B.T val2-A.R val2-A.T val2-B.R
1          1         6         7         0         1         3         9         0
2          2         0         0         0         0         0         0        22
3          3         2         0         0         4         8         0         0
val2-B.T
1          11
2           0
3           5

print(edm_pivot_wider2(
  inpt_datf = datf2,
  col_vars = c(2),
  col_vals = c(3, 4),
  individual_col = 1)
)

individuals val1-A val1-B val2-A val2-B
1          1         7         1         9        11
2          2         0         0         0        22
3          3         2         4         8         5

```

```
elements_equalifier
```

```
elements_equalifier
```

Description

Takes an input vector with elements that have different occurrence, and output a vector with all these elements with the same number of occurrence, see examples

Usage

```
elements_equalifier(inpt_v, until = 3)
```

Arguments

`inpt_v` is the input vector
`until` is how many times each elements will be in the output vector

Examples

```
print(elements_equalifier(letters, until = 2))

[1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s"
[20] "t" "u" "v" "w" "x" "y" "z" "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l"
[39] "m" "n" "o" "p" "q" "r" "s" "t" "u" "v" "w" "x" "y" "z"

print(elements_equalifier(c(letters, letters[-1]), until = 2))

[1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s"
[20] "t" "u" "v" "w" "x" "y" "z" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m"
[39] "n" "o" "p" "q" "r" "s" "t" "u" "v" "w" "x" "y" "z" "a"
```

equalizer_v

equalizer_v

Description

Takes a vector of character as an input and returns a vector with the elements at the same size. The size can be chosen via depth parameter.

Usage

```
equalizer_v(inpt_v, depth = "max", default_val = "?")
```

Arguments

`inpt_v` is the input vector containing all the characters
`depth` is the depth parameter, defaults to "max" which means that it is equal to the character number of the element(s) in `inpt_v` that has the most
`default_val` is the default value that will be added to the output characters if those has an inferior length (characters) than the value of depth

Examples

```
print(equalizer_v(inpt_v=c("aa", "zzz", "q"), depth=2))

#[1] "aa" "zz" "q?"

print(equalizer_v(inpt_v=c("aa", "zzz", "q"), depth=12))

#[1] "aa???????????" "zzz???????????" "q?????????????"
```

extract_normal	<i>extract_normal</i>
----------------	-----------------------

Description

Allow to extract values that fits a normal distribution from any kind of dataset, see examples and parameters

Usage

```
extract_normal(
  inpt_datf,
  mean,
  sd,
  accuracy,
  round_value = 1,
  normalised = FALSE,
  n = NA,
  tries = 3
)
```

Arguments

inpt_datf	is the input dataset as a dataframe, values/modalities are in the first column and frequency (not normalised) is in the second column
mean	is the mean of the target normal distribution
sd	is the standard deviation of the target normal distribution
accuracy	is how much of a difference between the points of the targeted normal distribution and the actual points is tolerated
round_value	is the round value for the normal distribution used under the hood to compare the dataset and extract the best points, defaults to 1
normalised	is if the input frequency is divided by n, if TRUE the parameter n must be filled
n	is the number of points
tries	is how many normal distributions are used under the hood to compare their points to the those in the input dataset, defaults to 3. The higher it is, the higher the number of different points from the input dataset will be in accordance for the normal distribution the function tries to build from the dataset. It does not increase by a lot but can be non-negligible and note that the higher the number of tries is, the higher the execution time of the function will be.

Examples

```
sample_val <- round(rnorm(n = 72000, mean = 12, sd = 2), 1)
sample_freq <- unique_total(sample_val)
sample_qual <- infinite_char_seq(n = length(sample_freq))
datf_test <- data.frame(sample_qual, sample_freq)
n <- nrow(datf_test)
print(datf_test)

sample_qual sample_freq
```

1	a	72
2	b	1155
3	c	1255
4	d	743
5	e	696
6	f	1028
7	g	1160
8	h	1219
9	i	1353
10	j	1336
11	k	1308
12	l	485
13	m	1306
14	n	1429
15	o	623
16	p	1172
17	q	1054
18	r	999
19	s	125
20	t	1461
21	u	1430
22	v	341
23	w	1453
24	x	427
25	y	869
26	z	1395
27	aa	841
28	ab	952
29	ac	246
30	ad	468
31	ae	237
32	af	555
33	ag	1297
34	ah	571
35	ai	349
36	aj	773
37	ak	1086
38	al	1281
39	am	1471
40	an	1236
41	ao	394
42	ap	1433
43	aq	1328
44	ar	976
45	as	640
46	at	308
47	au	698
48	av	864
49	aw	1346
50	ax	1349
51	ay	6
52	az	1071
53	ba	248
54	bb	929
55	bc	925
56	bd	452
57	be	207

58	bf	546
59	bg	62
60	bh	107
61	bi	1184
62	bj	739
63	bk	624
64	bl	850
65	bm	1408
66	bn	620
67	bo	202
68	bp	10
69	bq	700
70	br	397
71	bs	1291
72	bt	178
73	bu	397
74	bv	1089
75	bw	1301
76	bx	328
77	by	1348
78	bz	97
79	ca	1452
80	cb	4
81	cc	100
82	cd	593
83	ce	503
84	cf	164
85	cg	32
86	ch	259
87	ci	1089
88	cj	249
89	ck	165
90	cl	42
91	cm	143
92	cn	467
93	co	347
94	cp	143
95	cq	69
96	cr	18
97	cs	290
98	ct	55
99	cu	141
100	cv	86
101	cw	303
102	cx	88
103	cy	16
104	cz	213
105	da	3
106	db	75
107	dc	32
108	dd	66
109	de	105
110	df	34
111	dg	56
112	dh	17
113	di	22
114	dj	120

115	dk	54
116	dl	9
117	dm	8
118	dn	36
119	do	20
120	dp	26
121	dq	54
122	dr	8
123	ds	10
124	dt	4
125	du	53
126	dv	29
127	dw	1
128	dx	8
129	dy	10
130	dz	4
131	ea	22
132	eb	9
133	ec	17
134	ed	55
135	ee	21
136	ef	6
137	eg	4
138	eh	3
139	ei	7
140	ej	1
141	ek	4
142	el	2
143	em	5
144	en	4
145	eo	1
146	ep	2
147	eq	3
148	er	8
149	es	4
150	et	3
151	eu	3
152	ev	2
153	ew	2
154	ex	2
155	ey	1
156	ez	2
157	fa	2
158	fb	1

```

teste <- extract_normal(inpt_datf = datf_test,
                        mean = 10,
                        sd = 2,
                        accuracy = .1,
                        round_value = 1,
                        normalised = FALSE,
                        tries = 5)

```

```
print(length(unique(teste[, 1])) / n)
```

```

[1] 0.2848101 # so nearly 28.5 % of the different points were in
#accordance with the construction of the target normal distribution

```

```
print(teste)
```

	values	frequency
1	dw	0.0001406866
2	dw	0.0001406866
3	dw	0.0001406866
4	el	0.0002813731
5	el	0.0002813731
6	el	0.0002813731
7	el	0.0002813731
8	da	0.0004220597
9	da	0.0004220597
10	cb	0.0005627462
11	cb	0.0005627462
12	em	0.0007034328
13	ay	0.0008441193
14	ay	0.0008441193
15	ei	0.0009848059
16	ei	0.0009848059
17	ei	0.0009848059
18	dm	0.0011254924
19	bp	0.0014068655
20	cy	0.0022509848
21	cy	0.0022509848
22	cy	0.0022509848
23	dh	0.0023916714
24	dh	0.0023916714
25	cr	0.0025323579
26	ee	0.0029544176
27	di	0.0030951041
28	dp	0.0036578503
29	dp	0.0036578503
30	cg	0.0045019696
31	cg	0.0045019696
32	df	0.0047833427
33	dn	0.0050647158
34	cl	0.0059088351
35	cl	0.0059088351
36	du	0.0074563872
37	du	0.0074563872
38	dg	0.0078784468
39	dg	0.0078784468
40	bg	0.0087225661
41	bg	0.0087225661
42	dd	0.0092853123
43	cq	0.0097073720
44	cq	0.0097073720
45	a	0.0101294316
46	cv	0.0120990433
47	cx	0.0123804164
48	cx	0.0123804164
49	bz	0.0136465954
50	cc	0.0140686550
51	bh	0.0150534609
52	bh	0.0150534609
53	dj	0.0168823860

54	s	0.0175858188
55	s	0.0175858188
56	cm	0.0201181767
57	cf	0.0230725943
58	ck	0.0232132808
59	bt	0.0250422060
60	bt	0.0250422060
61	be	0.0291221159
62	be	0.0291221159
63	cz	0.0299662352
64	cz	0.0299662352
65	be	0.0291221159
66	bo	0.0284186832
67	bt	0.0250422060
68	ck	0.0232132808
69	ck	0.0232132808
70	cm	0.0201181767
71	cu	0.0198368036
72	s	0.0175858188
73	dj	0.0168823860
74	bh	0.0150534609
75	bh	0.0150534609
76	de	0.0147720878
77	bz	0.0136465954
78	bz	0.0136465954
79	cx	0.0123804164
80	cv	0.0120990433
81	db	0.0105514913
82	a	0.0101294316
83	cq	0.0097073720
84	dd	0.0092853123
85	dd	0.0092853123
86	bg	0.0087225661
87	bg	0.0087225661
88	dg	0.0078784468
89	dk	0.0075970737
90	du	0.0074563872
91	cl	0.0059088351
92	cl	0.0059088351
93	dn	0.0050647158
94	df	0.0047833427
95	df	0.0047833427
96	cg	0.0045019696
97	dv	0.0040799100
98	dp	0.0036578503
99	di	0.0030951041
100	di	0.0030951041
101	ee	0.0029544176
102	cr	0.0025323579
103	dh	0.0023916714
104	cy	0.0022509848
105	cy	0.0022509848
106	cy	0.0022509848
107	cy	0.0022509848
108	dl	0.0012661790
109	dm	0.0011254924
110	ei	0.0009848059

```

111      ei 0.0009848059
112      ay 0.0008441193
113      ay 0.0008441193
114      em 0.0007034328
115      em 0.0007034328
116      cb 0.0005627462
117      cb 0.0005627462
118      da 0.0004220597
119      da 0.0004220597
120      el 0.0002813731
121      el 0.0002813731
122      el 0.0002813731
123      el 0.0002813731
124      dw 0.0001406866
125      dw 0.0001406866
126      dw 0.0001406866

```

extrt_only_v	<i>extrt_only_v</i>
--------------	---------------------

Description

Returns the elements from a vector "inpt_v" that are in another vector "pttrn_v"

Usage

```
extrt_only_v(inpt_v, pttrn_v)
```

Arguments

inpt_v	is the input vector
pttrn_v	is the vector contining all the elements that can be in inpt_v

Examples

```

print(extrt_only_v(inpt_v=c("oui", "non", "peut", "oo", "ll", "oui", "non", "oui", "oui"),
  pttrn_v=c("oui")))

#[1] "oui" "oui" "oui" "oui"

```

fillr	<i>fillr</i>
-------	--------------

Description

Allow to fill a vector by the last element n times

Usage

```
fillr(inpt_v, ptrn_fill = "\\.\.\.\.\d")
```

Arguments

`inpt_v` is the input vector

`ptrn_fill` is the pattern used to detect where the function has to fill the vector by the last element n times. It defaults to "...\\d" where "\\d" is the regex for an int value. So this parameter has to have "\\d" which designates n.

Examples

```
print(fillr(c("a", "b", "...3", "c")))

#[1] "a" "b" "b" "b" "b" "c"
```

<code>fixer_nest_v</code>	<i><code>fixer_nest_v</code></i>
---------------------------	----------------------------------

Description

Return the elements of a vector "wrk_v" (1) that corresponds to the pattern of elements in another vector "cur_v" (2) according to another vector "ptrn_v" (3) that contains the pattern of elements.

Usage

```
fixer_nest_v(cur_v, ptrn_v, wrk_v)
```

Arguments

`cur_v` is the input vector

`ptrn_v` is the vector containing all the patterns that may be contained in `cur_v`

`wrk_v` is a vector containing all the indexes of `cur_v` taken in count in the function

Examples

```
print(fixer_nest_v(cur_v=c("oui", "non", "peut-etre", "oui", "non", "peut-etre"),
  ptrn_v=c("oui", "non", "peut-etre"),
  wrk_v=c(1, 2, 3, 4, 5, 6)))

#[1] 1 2 3 4 5 6

print(fixer_nest_v(cur_v=c("oui", "non", "peut-etre", "oui", "non", "peut-etre"),
  ptrn_v=c("oui", "non"),
  wrk_v=c(1, 2, 3, 4, 5, 6)))

#[1] 1 2 NA 4 5 NA
```

`fold_rec`*fold_rec*

Description

Allow to get all the files recursively from a path according to an end and start depth value. If you want to have an other version of this function that uses a more sophisticated algorithm (which can be faster), check `file_rec2`. Depth example: if i have `dir/dir2/dir3`, `dir/dir2b/dir3b`, i have a depth equal to 3

Usage

```
fold_rec(xmax, xmin = 1, pathc = ".")
```

Arguments

<code>xmax</code>	is the end depth value
<code>xmin</code>	is the start depth value
<code>pathc</code>	is the reference path

`fold_rec2`*fold_rec2*

Description

Allow to find the directories and the subdirectories with a specified end and start depth value from a path. This function might be more powerfull than `file_rec` because it uses a custom algorithm that does not need to perform a full recursive search before tuning it to only find the directories with a good value of depth. Depth example: if i have `dir/dir2/dir3`, `dir/dir2b/dir3b`, i have a depth equal to 3

Usage

```
fold_rec2(xmax, xmin = 1, pathc = ".")
```

Arguments

<code>xmax</code>	is the depth value
<code>xmin</code>	is the minimum value of depth
<code>pathc</code>	is the reference path, from which depth value is equal to 1

format_date	<i>format_date</i>
-------------	--------------------

Description

Allow to convert xx-month-xxxx date type to xx-xx-xxxx

Usage

```
format_date(f_dialect, sentc, sep_in = "-", sep_out = "-")
```

Arguments

f_dialect	are the months from the language of which the month come
sentc	is the date to convert
sep_in	is the separator of the dat input (default is "-")
sep_out	is the separator of the converted date (default is "-")

Examples

```
print(format_date(f_dialect=c("janvier", "février", "mars", "avril", "mai", "juin",
"juillet", "aout", "septembre", "octobre", "novembre", "décembre"), sentc="11-septembre-2
#[1] "11-09-2023"
```

geo_min	<i>geo_min</i>
---------	----------------

Description

Return a dataframe containing the nearest geographical points (row) according to established geographical points (column).

Usage

```
geo_min(inpt_datf, established_datf)
```

Arguments

inpt_datf	is the input dataframe of the set of geographical points to be classified, its firts column is for latitude, the second for the longitude and the third, if exists, is for the altitude. Each point is one row.
established_datf	is the dataframe containing the coordiantes of the established geographical points

Examples

```
in_ <- data.frame(c(11, 33, 55), c(113, -143, 167))

in2_ <- data.frame(c(12, 55), c(115, 165))

print(geo_min(inpt_datf=in_, established_datf=in2_))

#           X1           X2
#1    245.266         NA
#2 24200.143         NA
#3           NA 127.7004

in_ <- data.frame(c(51, 23, 55), c(113, -143, 167), c(6, 5, 1))

in2_ <- data.frame(c(12, 55), c(115, 165), c(2, 5))

print(geo_min(inpt_datf=in_, established_datf=in2_))

#           X1           X2
#1           NA 4343.720
#2 26465.63         NA
#3           NA 5825.517
```

get_rec	<i>get_rec</i>
---------	----------------

Description

Allow to get the value of directorie depth from a path.

Usage

```
get_rec(pathc = ".")
```

Arguments

pathc	is the reference path example: if i have dir/dir2/dir3, dir/dir2b/dir3b, i have a depth equal to 3
-------	--

<i>globe</i>	<i>globe</i>
--------------	--------------

Description

Allow to calculate the distances between a set of geographical points and another established geographical point. If the altitude is not filled, so the result returned won't take in count the altitude.

Usage

```
globe(lat_f, long_f, alt_f = NA, lat_n, long_n, alt_n = NA)
```

```
grep_all
```

```
grep_all
```

Description

Allow to perform a grep function on multiple input elements

Usage

```
grep_all(inpt_v, pattern_v)
```

Arguments

`inpt_v` is the input vectors to grep elements from
`pattern_v` is a vector containing the patterns to grep

Examples

```
print(grep_all(inpt_v = c(1:14, "z", 1:7, "z", "a", "z"),
               pattern_v = c("z", "4")))

[1] 15 23 25 4 14 19

print(grep_all(inpt_v = c(1:14, "z", 1:7, "z", "a", "z"),
               pattern_v = c("z", "^4$")))

[1] 15 23 25 4 19

print(grep_all(inpt_v = c(1:14, "z", 1:7, "z", "a", "z"),
               pattern_v = c("z")))

[1] 15 23 25
```

```
grep_all2
```

```
grep_all2
```

Description

Performs the `grep_all` function with another algorithm, potentially faster

Usage

```
grep_all2(inpt_v, pattern_v)
```

Arguments

`inpt_v` is the input vectors to grep elements from
`pattern_v` is a vector containing the patterns to grep

Examples

```
print(grep_all2(inpt_v = c(1:14, "z", 1:7, "z", "a", "z"),
               pattern_v = c("z", "4")))

[1] 15 23 25  4 14 19

print(grep_all2(inpt_v = c(1:14, "z", 1:7, "z", "a", "z"),
               pattern_v = c("z", "^4$")))

[1] 15 23 25  4 19

print(grep_all2(inpt_v = c(1:14, "z", 1:7, "z", "a", "z"),
               pattern_v = c("z")))

[1] 15 23 25
```

groupr_datf	<i>groupr_datf</i>
-------------	--------------------

Description

Allow to create groups from a dataframe. Indeed, you can create conditions that lead to a flag value for each cell of the input dataframe according to the cell value. This function is based on `see_datf` and `nestr_datf2` functions.

Usage

```
groupr_datf(
  inpt_datf,
  condition_lst,
  val_lst,
  conjunction_lst,
  rtn_val_pos = c()
)
```

Arguments

<code>inpt_datf</code>	is the input dataframe
<code>condition_lst</code>	is a list containing all the condition as a vector for each group
<code>val_lst</code>	is a list containing all the values associated with <code>condition_lst</code> as a vector for each group
<code>conjunction_lst</code>	is a list containing all the conjunctions associated with <code>condition_lst</code> and <code>val_lst</code> as a vector for each group
<code>rtn_val_pos</code>	is a vector containing all the group flag value like this ex: <code>c("flag1", "flag2", "flag3")</code>

Examples

```

interactive()

datf1 <- data.frame(c(1, 2, 1), c(45, 22, 88), c(44, 88, 33))

val_lst <- list(list(c(1), c(1)), list(c(2)), list(c(44, 88)))

condition_lst <- list(c(">", "<"), c("%%", c("==", "=="))

conjunction_lst <- list(c("|"), c(), c("|"))

rtn_val_pos <- c("+", "++", "+++")

print(groupr_datf(inpt_datf=datf1, val_lst=val_lst, condition_lst=condition_lst,
conjunction_lst=conjunction_lst, rtn_val_pos=rtn_val_pos))

#      X1  X2  X3
#1 <NA>   +  +++
#2   ++  ++  +++
#3 <NA> +++   +

```

gsub_mult

gsub_mult

Description

Performs a gsub operation with n patterns and replacements.

Usage

```
gsub_mult(inpt_v, pattern_v = c(), replacement_v = c())
```

Arguments

`inpt_v` is a vector containing all the elements that contains expressions to be substituted

`pattern_v` is a vector containing all the patterns to be substituted in any elements of `inpt_v`

`replacement_v` is a vector containing the expression that are going to substitute those provided by `pattern_v`

Examples

```

print(gsub_mult(inpt_v = c("X and Y programming languages are great", "More X, more X!"),
  pattern_v = c("X", "Y", "Z"),
  replacement_v = c("C", "R", "GO")))
[1] "C and R programming languages are great"
[2] "More C, more C!"

```

historic_sequence1 *historic_sequence1*

Description

Allow to perform a pivot wider on a sequential dataset (here the type is dataframe), each variable will be duplicated in a column to show the value to this variable at $n - 1$ for each individual, see examples.

Usage

```
historic_sequence1(inpt_datf, bf_ = 1)
```

Arguments

`inpt_datf` is the input dataframe
`bf_` is the number of previous value of the individual it will search for, see examples

Examples

```
set.seed(123)
var1 <- round(runif(n = 14, min = 100, max = 122))
set.seed(123)
var2 <- round(runif(n = 14, min = 14, max = 20))

datf <- data.frame("ids" = c(20, 20, 20, 20, 19, 19, 19, 18, 18, 18, 18,
                             17, 17, 17),
                  "individual" = c("oui", "non", "peut1", "peut2",
                                   "oui", "peut1", "peut2"),
                  "var1" = var1,
                  "var2" = var2)

print(datf)
```

	ids	individual	var1	var2
1	20	oui	106	16
2	20	non	117	19
3	20	peut1	109	16
4	20	peut2	119	19
5	19	oui	121	20
6	19	peut1	101	14
7	19	peut2	112	17
8	18	oui	120	19
9	18	non	112	17
10	18	peut1	110	17
11	18	peut2	121	20
12	17	oui	110	17
13	17	peut1	115	18
14	17	peut2	113	17

```
historic_sequence1(inpt_datf = datf, bf_ = 2)
```

	id_seq	individual	var1-1	var1-2	var2-1	var2-2
1	20	oui	121	120	20	19
2	20	non	NA	112	NA	17

```

3      20      peut1      101      110      14      17
4      20      peut2      112      121      17      20
5      19        oui      120      110      19      17
6      19      peut1      110      115      17      18
7      19      peut2      121      113      20      17

```

```
historic_sequence1(inpt_datf = datf, bf_ = 3)
```

```

  id_seq individual var1-1 var1-2 var1-3 var2-1 var2-2 var2-3
1      20        oui     121     120     110      20      19      17
2      20        non      NA     112      NA      NA      17      NA
3      20      peut1     101     110     115      14      17      18
4      20      peut2     112     121     113      17      20      17

```

```
historic_sequence2 historic_sequence2
```

Description

Allow to perform a pivot wider on a sequential dataset (here the type is dataframe), each variable will be duplicated in a column to show the value to this variable at $n - 1$ for each individual, see examples.

Usage

```
historic_sequence2(inpt_datf, bf_ = 1)
```

Arguments

`inpt_datf` is the input dataframe
`bf_` is the number of previous value of the individual it will search for, see examples

Examples

```

set.seed(123)
var1 <- round(runif(n = 14, min = 100, max = 122))
set.seed(123)
var2 <- round(runif(n = 14, min = 14, max = 20))

datf <- data.frame("ids" = c(20, 20, 20, 20, 19, 19, 19, 18, 18, 18, 18,
                             17, 17, 17),
                  "individual" = c("oui", "non", "peut1", "peut2",
                                   "oui", "peut1", "peut2"),
                  "var1" = var1,
                  "var2" = var2)

print(datf)

```

```

  ids individual var1 var2
1  20        oui  106   16
2  20        non  117   19
3  20      peut1  109   16
4  20      peut2  119   19
5  19        oui  121   20

```

```

6  19      peut1  101  14
7  19      peut2  112  17
8  18        oui  120  19
9  18        non  112  17
10 18      peut1  110  17
11 18      peut2  121  20
12 17        oui  110  17
13 17      peut1  115  18
14 17      peut2  113  17

```

```
print(historic_sequence2(inpt_datf = datf, bf_ = 2))
```

```

   id_seq individual var1-0 var1-1 var1-2 var2-0 var2-1 var2-2
1      20        oui   106   121   120    16    20    19
2      20        non   117    NA   112    19    NA    17
3      20      peut1   109   101   110    16    14    17
4      20      peut2   119   112   121    19    17    20
5      19        oui   121   120   110    20    19    17
6      19      peut1   101   110   115    14    17    18
7      19      peut2   112   121   113    17    20    17

```

```
print(historic_sequence2(inpt_datf = datf, bf_ = 3))
```

```

   id_seq individual var1-0 var1-1 var1-2 var1-3 var2-0 var2-1 var2-2 var2-3
1      20        oui   106   121   120   110    16    20    19    17
2      20        non   117    NA   112    NA    19    NA    17    NA
3      20      peut1   109   101   110   115    16    14    17    18
4      20      peut2   119   112   121   113    19    17    20    17

```

how_normal

how_normal

Description

Allow to get how much a sequence of numbers fit a normal distribution with chosen parameters, see examples

Usage

```
how_normal(inpt_datf, normalised = TRUE, mean = 0, sd = 1)
```

Arguments

inpt_datf	is the input dataframe containing all the values in the first column and their frequency (normalised or no), in the second column
normalised	is a boolean, takes TRUE if the frequency for each value is divided by n, FALSE if not
mean	is the mean of the normal distribution that the dataset tries to fit
sd	is the standard deviation of the normal distribution the dataset tries to fit

Examples

```
sample_val <- round(rnorm(n = 12000, mean = 6, sd = 1.25), 1)
sample_freq <- unique_total(sample_val)
datf_test <- data.frame(unique(sample_val), sample_freq)
print(datf_test)
```

	unique.sample_val.	sample_freq
1	6.9	306
2	8.3	63
3	7.7	148
4	5.6	363
5	6.5	349
6	4.6	202
7	6.6	324
8	6.7	335
9	6.0	406
10	5.7	365
11	7.9	109
12	6.2	420
13	5.9	386
14	4.5	185
15	5.1	326
16	6.1	360
17	5.5	346
18	6.3	375
19	7.4	207
20	7.6	162
21	4.2	129
22	3.9	102
23	5.2	325
24	2.3	7
25	5.8	387
26	6.4	319
27	9.1	21
28	7.0	280
29	8.8	27
30	4.9	218
31	8.1	98
32	3.0	25
33	8.4	66
34	4.3	160
35	7.2	267
36	8.7	40
37	5.3	313
38	4.1	127
39	5.0	275
40	4.0	119
41	9.3	13
42	4.4	196
43	6.8	313
44	7.1	247
45	3.5	57
46	7.8	139
47	3.6	57
48	7.5	189
49	7.3	215

50	4.7	230
51	3.2	36
52	9.5	8
53	3.8	79
54	8.2	62
55	5.4	343
56	8.5	55
57	4.8	207
58	3.7	79
59	8.6	33
60	3.3	38
61	3.4	43
62	8.9	21
63	8.0	105
64	3.1	23
65	9.0	27
66	10.0	5
67	2.5	10
68	2.9	16
69	9.7	7
70	2.7	11
71	10.5	1
72	9.4	13
73	9.2	16
74	2.6	16
75	9.9	3
76	2.8	10
77	2.4	10
78	1.9	2
79	2.0	6
80	10.2	2
81	9.6	3
82	11.3	1
83	1.8	1
84	2.2	3
85	2.1	2
86	1.6	1
87	10.6	1
88	9.8	1
89	10.4	1
90	1.7	1

```
print(how_normal(inpt_datf = datf_test,
                  normalised = FALSE,
                  mean = 6,
                  sd = 1))
```

```
[1] 9.003683
```

```
print(how_normal(inpt_datf = datf_test,
                  normalised = FALSE,
                  mean = 5,
                  sd = 1))
```

```
[1] 9.098484
```

how_unif

how_unif

Description

Allow to see how much a sequence of numbers fit a uniform distribution, see examples

Usage

```
how_unif(inpt_v, normalised = TRUE)
```

Arguments

normalised is a boolean, takes TRUE if the frequency for each value is divided by n, FALSE if not

inpt_datf is the input dataframe containing all the values in the first column and their frequencyu at the second column

Examples

```
sample_val <- round(runif(n = 12000, min = 24, max = 27), 1)
sample_freq <- unique_total(sample_val)
datf_test <- data.frame(unique(sample_val), sample_freq)
```

```
print(datf_test)
```

```
  unique.sample_val. sample_freq
1             24.4           400
2             24.8           379
3             25.5           414
4             26.0           366
5             26.6           400
6             25.7           419
7             24.3           389
8             24.1           423
9             26.1           404
10            26.5           406
11            26.2           356
12            26.8           407
13            24.6           388
14            25.3           402
15            26.3           388
16            25.4           422
17            25.0           436
18            25.9           373
19            25.2           423
20            25.6           388
21            27.0           202
22            24.2           380
23            24.9           404
24            25.1           417
25            26.4           401
26            26.7           431
27            24.5           392
```

```

28          24.0          218
29          26.9          407
30          25.8          371
31          24.7          394

print(how_unif(inpt_datf = datf_test, normalised = FALSE))

[1] 0.0752957

sample_val <- round(rnorm(n = 12000, mean = 24, sd = 7), 1)
sample_freq <- unique_total(sample_val)
datf_test <- data.frame(unique(sample_val), sample_freq)

print(how_unif(inpt_datf = datf_test, normalised = FALSE))

[1] 0.7797352

```

id_keepr

id_keepr

Description

Allow to get the original indexes after multiple equality comparison according to the original number of row

Usage

```
id_keepr(inpt_datf, col_v = c(), el_v = c(), rstr_l = NA)
```

Arguments

inpt_datf	is the input dataframe
col_v	is the vector containing the column numbers or names to be compared to their respective elements in "el_v"
el_v	is a vector containing the elements that may be contained in their respective column described in "col_v"
rstr_l	is a list containing the vector composed of the indexes of the elements chosen for each comparison. If the length of the list is inferior to the lenght of comparisons, so the last vector of rstr_l will be the same as the last one to fill make rstr_l equal in term of length to col_v and el_v

Examples

```

datf1 <- data.frame(c("oui", "oui", "oui", "non", "oui"),
  c("opui", "op", "op", "zez", "zez"), c(5:1), c(1:5))

print(id_keepr(inpt_datf=datf1, col_v=c(1, 2), el_v=c("oui", "op")))

#[1] 2 3

print(id_keepr(inpt_datf=datf1, col_v=c(1, 2), el_v=c("oui", "op"),

```

```

      rstr_l=list(c(1:5), c(3, 2, 2, 2, 3)))

#[1] 2 3

print(id_keepr(inpt_datf=datf1, col_v=c(1, 2), el_v=c("oui", "op"),
      rstr_l=list(c(1:5), c(3))))

#[1] 3

print(id_keepr(inpt_datf=datf1, col_v=c(1, 2), el_v=c("oui", "op"), rstr_l=list(c(1:5))))

#[1] 2 3

```

incr_fillr

incr_fillr

Description

Take a vector uniquely composed by double and sorted ascendingly, a step, another vector of elements whose length is equal to the length of the first vector, and a default value. If an element of the vector is not equal to its predecessor minus a user defined step, so these can be the output according to the parameters (see example):

Usage

```
incr_fillr(inpt_v, wrk_v = NA, default_val = NA, step = 1)
```

Arguments

inpt_v	is the asending double only composed vector
wrk_v	is the other vector (size equal to inpt_v), defaults to NA
default_val	is the default value put when the difference between two following elements of inpt_v is greater than step, defaults to NA
step	is the allowed difference between two elements of inpt_v

Examples

```

print(incr_fillr(inpt_v=c(1, 2, 4, 5, 9, 10),
      wrk_v=NA,
      default_val="increasing"))

#[1] 1 2 3 4 5 6 7 8 9 10

print(incr_fillr(inpt_v=c(1, 1, 2, 4, 5, 9),
      wrk_v=c("ok", "ok", "ok", "ok", "ok"),
      default_val=NA))

#[1] "ok" "ok" "ok" NA "ok" "ok" NA NA NA

print(incr_fillr(inpt_v=c(1, 2, 4, 5, 9, 10),
      wrk_v=NA,
      default_val="NAN"))

```

```
#[1] "1" "2" "NAN" "4" "5" "NAN" "NAN" "NAN" "9" "10"
```

```
infinite_char_seq infinite_char_seq
```

Description

Allow to generate an infinite sequence of unique letters

Usage

```
infinite_char_seq(n, base_char = letters)
```

Arguments

`n` is how many sequence of numbers will be generated
`base_char` is the vector containing the elements from which the sequence is generated

Examples

```
print(infinite_char_seq(28))

[1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o"
[16] "p" "q" "r" "s" "t" "u" "v" "w" "x" "y" "a" "aa" "ab"
```

```
inner_all inner_all
```

Description

Allow to apply inner join on n dataframes, datatables, tibble

Usage

```
inner_all(..., keep_val = FALSE, id_v)
```

Arguments

`...` are all the dataframes etc
`keep_val` is if you want to keep the id column
`id_v` is the common id of all the dataframes etc

Examples

```

datf1 <- data.frame(
  "id1"=c(1:5),
  "var1"=c("oui", "oui", "oui", "non", "non")
)

datf2 <- data.frame(
  "id1"=c(1, 2, 3, 7, 9),
  "var1"=c("oui2", "oui2", "oui2", "non2", "non2")
)

print(inner_all(datf1, datf2, keep_val=FALSE, id_v="id1"))

id1 var1.x var1.y
1    1    oui   oui2
2    2    oui   oui2
3    3    oui   oui2

```

insert_datf	<i>insert_datf</i>
-------------	--------------------

Description

Allow to insert dataframe into another dataframe according to coordinates (row, column) from the dataframe that will be inserted

Usage

```
insert_datf(datf_in, datf_ins, ins_loc)
```

Arguments

datf_in	is the dataframe that will be inserted
datf_ins	is the dataset to be inserted
ins_loc	is a vector containg two parameters (row, column) of the beginning for the insertion

Examples

```

datf1 <- data.frame(c(1, 4), c(5, 3))

datf2 <- data.frame(c(1, 3, 5, 6), c(1:4), c(5, 4, 5, "ereer"))

print(insert_datf(datf_in=datf2, datf_ins=datf1, ins_loc=c(4, 2)))

#   c.1..3..5..6. c.1.4. c.5..4..5...ereer..
# 1              1      1                   5
# 2              3      2                   4
# 3              5      3                   5
# 4              6      1                   5

print(insert_datf(datf_in=datf2, datf_ins=datf1, ins_loc=c(3, 2)))

```

```
#   c.1..3..5..6. c.1.4. c.5..4..5...ereer..
# 1             1      1                      5
# 2             3      2                      4
# 3             5      1                      5
# 4             6      4                      3

print(insert_datf(datf_in=datf2, datf_ins=datf1, ins_loc=c(2, 2)))

#   c.1..3..5..6. c.1.4. c.5..4..5...ereer..
# 1             1      1                      5
# 2             3      1                      5
# 3             5      4                      3
# 4             6      4                      ereer
```

intersect_all	<i>intersect_all</i>
---------------	----------------------

Description

Allows to calculate the intersection between n vectors

Usage

```
intersect_all(...)
```

Arguments

... is all the vector you want to calculate the intersection from

Examples

```
print(intersect_all(c(1:5), c(1, 2, 3, 6), c(1:4)))

[1] 1 2 3
```

intersect_mod	<i>intersect_mod</i>
---------------	----------------------

Description

Returns the mods that have elements in common

Usage

```
intersect_mod(datf, inter_col, mod_col, n_min, descndly_ordered = NA)
```

Arguments

`datf` is the input dataframe

`inter_col` is the column name or the column number of the values that may be commun between the different mods

`mod_col` is the column name or the column number of the mods in the dataframe

`n_min` is the minimum elements in common a mod should have to be taken in count

`ordered_descendly` in case that the elements in commun are numeric, this option can be enabled by giving a value of TRUE or FALSE see examples

Examples

```
datf <- data.frame("col1"=c("oui", "oui", "oui", "oui", "oui", "oui",
                             "non", "non", "non", "non", "ee", "ee", "ee"), "col2"=c(1:6, 2:5, 1:6))

print(intersect_mod(datf=datf, inter_col=2, mod_col=1, n_min=2))

  col1 col2
2   oui   2
3   oui   3
7  non   2
8  non   3
12  ee   2
13  ee   3

print(intersect_mod(datf=datf, inter_col=2, mod_col=1, n_min=3))

  col1 col2
2   oui   2
3   oui   3
4   oui   4
5   oui   5
7  non   2
8  non   3
9  non   4
10 non   5

print(intersect_mod(datf=datf, inter_col=2, mod_col=1, n_min=5))

  col1 col2
1   oui   1
2   oui   2
3   oui   3
4   oui   4
5   oui   5
6   oui   6

datf <- data.frame("col1"=c("non", "non", "oui", "oui", "oui", "oui",
                             "non", "non", "non", "non", "ee", "ee", "ee"), "col2"=c(1:6, 2:5, 1:6))

print(intersect_mod(datf=datf, inter_col=2, mod_col=1, n_min=3))

  col1 col2
8  non   3
9  non   4
```



```

10 non 5
3 oui 3
4 oui 4
5 oui 5

```

inter_max

inter_max

Description

Takes as input a list of vectors composed of ints or floats ascendly ordered (intervals) that can have a different step to one of another element ex: list(c(0, 2, 4), c(0, 4), c(1, 2, 2.3)). The function will return the list of lists altered according to the maximum step found in the input list.

Usage

```
inter_max(inpt_l, max_ = -1000, get_lst = TRUE)
```

Arguments

inpt_l	is the input list
max_	is a value you are sure is the minimum step value of all the sub-lists
get_lst	is the parameter that, if set to True, will keep the last values of vectors in the return value if the last step exceeds the end value of the vector.

Examples

```

print(inter_max(inpt_l=list(c(0, 2, 4), c(0, 4), c(1, 2, 2.3)), get_lst=TRUE))

#[[1]]
#[1] 0 4
#
#[[2]]
#[1] 0 4
#
#[[3]]
#[1] 1.0 2.3

print(inter_max(inpt_l=list(c(0, 2, 4), c(0, 4), c(1, 2, 2.3)), get_lst=FALSE))

# [[1]]
#[1] 0 4
#
#[[2]]
#[1] 0 4
#
#[[3]]
#[1] 1

```

inter_min

*inter_min***Description**

Takes as input a list of vectors composed of ints or floats ascendly ordered (intervals) that can have a different step to one of another element ex: list(c(0, 2, 4), c(0, 4), c(1, 2, 2.3)). This function will return the list of vectors with the same steps preserving the begin and end value of each interval. The way the algorithm searches the common step of all the sub-lists is also given by the user as a parameter, see `how_to` paramaters.

Usage

```
inter_min(
  inpt_l,
  min_ = 1000,
  sensi = 3,
  sensi2 = 3,
  how_to_op = c("divide"),
  how_to_val = c(3)
)
```

Arguments

<code>inpt_l</code>	is the input list containing all the intervals
<code>min_</code>	is a value you are sure is superior to the maximum step value in all the intervals
<code>sensi</code>	is the decimal accuracy of how the difference between each value n to $n+1$ in an interval is calculated
<code>sensi2</code>	is the decimal accuracy of how the value with the common step is calculated in all the intervals
<code>how_to_op</code>	is a vector containing the operations to perform to the pre-common step value, defaults to only "divide". The operations can be "divide", "substract", "multiply" or "add". All type of operations can be in this parameter.
<code>how_to_val</code>	is a vector containing the value relatives to the operations in <code>hot_to_op</code> , defaults to 3 output from ex:

Examples

```
print(inter_min(inpt_l=list(c(0, 2, 4), c(0, 4), c(1, 2, 2.3))))

# [[1]]
# [1] 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8
# [20] 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7
# [39] 3.8 3.9 4.0
#
# [[2]]
# [1] 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8
# [20] 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7
# [39] 3.8 3.9 4.0
#
# [[3]]
```

```
# [1] 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
```

isnt_divisible	<i>isnt_divisible</i>
----------------	-----------------------

Description

Takes a vector as an input and returns all the elements that are not divisible by all choosen numbers from another vector.

Usage

```
isnt_divisible(inpt_v = c(), divisible_v = c())
```

Arguments

inpt_v	is the input vector
divisible_v	is the vector containing all the numbers that will try to divide those contained in inpt_v

Examples

```
print(isnt_divisible(inpt_v=c(1:111), divisible_v=c(2, 4, 5)))

# [1] 1 3 7 9 11 13 17 19 21 23 27 29 31 33 37 39 41 43 47
# [20] 49 51 53 57 59 61 63 67 69 71 73 77 79 81 83 87 89 91 93
# [39] 97 99 101 103 107 109 111
```

is_divisible	<i>is_divisible</i>
--------------	---------------------

Description

Takes a vector as an input and returns all the elements that are divisible by all choosen numbers from another vector.

Usage

```
is_divisible(inpt_v = c(), divisible_v = c())
```

Arguments

inpt_v	is the input vector
divisible_v	is the vector containing all the numbers that will try to divide those contained in inpt_v

Examples

```
print(is_divisible(inpt_v=c(1:111), divisible_v=c(2, 4, 5)))

#[1] 20 40 60 80 100
```

join_n_lvl	<i>join_n_lvl</i>
------------	-------------------

Description

Allow to see the progress of the multi-level joins of the different variables modalities. Here, multi-level joins is a type of join that usually needs a concatenation of two or more variables to make a key. But here, there is no need to proceed to a concatenation. See examples.

Usage

```
join_n_lvl(frst_datf, scd_datf, join_type = c(), lst_pair = list())
```

Arguments

- frst_datf is the first data.frame (table)
- scd_datf is the second data.frame (table)
- join_type is a vector containing all the join type ("left", "inner", "right") for each variable
- lst_pair is a lis of vectors. The vectors refers to a multi-level join. Each vector should have a length of 1. Each vector should have a name. Its name refers to the column name of multi-level variable and its value refers to the column name of the join variable.

Examples

```
datf3 <- data.frame("vil"=c("one", "one", "one", "two", "two", "two"),
                    "charac"=c(1, 2, 2, 1, 2, 2),
                    "rev"=c(1250, 1430, 970, 1630, 2231, 1875),
                    "vil2" = c("one", "one", "one", "two", "two", "two"),
                    "idl2" = c(1:6))
datf4 <- data.frame("vil"=c("one", "one", "one", "two", "two", "three"),
                    "charac"=c(1, 2, 2, 1, 1, 2),
                    "rev"=c(1.250, 1430, 970, 1630, 593, 456),
                    "vil2" = c("one", "one", "one", "two", "two", "two"),
                    "idl2" = c(2, 3, 1, 5, 5, 5))

print(join_n_lvl(frst_datf=datf3, scd_datf=datf4, lst_pair=list(c("charac" = "vil"), c("vil2" = "idl2")),
                join_type=c("inner", "left")))

[1] "pair: charac vil"
| | 0%
1
|= | 50%
2
|==| 100%
[1] "pair: vil2 idl2"
```

```
| | 0%
one
|= | 50%
two
|==| 100%

main_id.x vil.x charac.x rev.x vil2.x idl2.x main_id.y vil.y charac.y rev.y
1 1oneone1 one 1 1250 one 1 <NA> <NA> NA NA
2 2oneone2 one 2 1430 one 2 <NA> <NA> NA NA
3 2oneone3 one 2 970 one 3 2oneone3 one 2 1430
4 1twotwo4 two 1 1630 two 4 <NA> <NA> NA NA
vil2.y idl2.y
1 <NA> NA
2 <NA> NA
3 one 3
4 <NA> NA
```

just_anything	<i>just_anything</i>
---------------	----------------------

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_anything(inpt_v, symbol_ = "-", anything_v = c())
```

Arguments

- inpt_v is the input vector
- symbol_ is the chosen symbol to replace numbers

Examples

```
print(just_anything(inpt_v = c("oui222jj644", "oui122jj"),
symbol_ = "-", anything_v = letters))

[1] "oui-jj-" "oui-jj"
```

just_anything2	<i>just_anything2</i>
----------------	-----------------------

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_anything2(inpt_v, symbol_ = "-", anything_v = c())
```

Arguments

inpt_v is the input vector
 symbol_ is the chosen symbol to replace numbers

Examples

```
print(just_anything2(inpt_v = c("oui222jj44", "oui122jj"),
  symbol_ = "-", anything_v = letters))

[1] "oui---jj--" "oui---jj"
```

just_anything3	<i>just_anything3</i>
----------------	-----------------------

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_anything3(inpt_v, anything_v = c())
```

Arguments

inpt_v is the input vector

Examples

```
print(just_anything3(inpt_v = c("oui222jj644", "oui122jj"),
  anything_v = letters))

[1] "oui jj" "oui jj"
```

just_chr	<i>just_chr</i>
----------	-----------------

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_chr(inpt_v, symbol_ = "-")
```

Arguments

inpt_v is the input vector
 symbol_ is the chosen symbol to replace numbers

Examples

```
print(just_chr(inpt_v = c("oui222jj644", "oui122jj"),
  symbol_ = "-"))

[1] "oui-jj-" "oui-jj"
```

just_chr2

just_chr2

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_chr2(inpt_v, symbol_ = "-")
```

Arguments

inpt_v is the input vector
symbol_ is the chosen symbol to replace numbers

Examples

```
print(just_chr2(inpt_v = c("oui222jj44", "oui122jj"),
  symbol_ = "-"))

[1] "oui---jj--" "oui---jj"
```

just_chr3

just_chr3

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_chr3(inpt_v)
```

Arguments

inpt_v is the input vector

Examples

```
print(just_chr3(inpt_v = c("oui222jj644", "oui122jj")))

[1] "oui jj" "oui jj"
```

just_nb

just_nb

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_nb(inpt_v, symbol_ = "-")
```

Arguments

inpt_v is the input vector
symbol_ is the chosen symbol to replace numbers

Examples

```
print(just_nb(inpt_v = c("oui222jj644", "oui122jj"),
  symbol_ = "-"))

[1] "-222-44" "-122-"
```

just_nb2

just_nb2

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_nb2(inpt_v, symbol_ = "-")
```

Arguments

inpt_v is the input vector
symbol_ is the chosen symbol to replace numbers

Examples

```
print(just_nb2(inpt_v = c("oui222jj44", "oui122jj"),
  symbol_ = "-"))

[1] "---222--44" "---122--"
```

just_nb3	<i>just_nb3</i>
----------	-----------------

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_nb3(inpt_v)
```

Arguments

`inpt_v` is the input vector

Examples

```
print(just_nb3(inpt_v = c("oui222jj644", "oui122jj")))
[1] 222644 122
```

just_not_anything	<i>just_not_anything</i>
-------------------	--------------------------

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_not_anything(inpt_v, symbol_ = "-", anything_v = c())
```

Arguments

`inpt_v` is the input vector
`symbol_` is the chosen symbol to replace numbers

Examples

```
print(just_not_anything(inpt_v = c("oui222jj644", "oui122jj"),
  symbol_ = "-", anything_v = letters))
[1] "-222-644" "-122-"
```

```
just_not_anything2 just_not_anything2
```

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_not_anything2(inpt_v, symbol_ = "-", anything_v = c())
```

Arguments

`inpt_v` is the input vector
`symbol_` is the chosen symbol to replace numbers

Examples

```
print(just_not_anything2(inpt_v = c("oui222jj44", "oui122jj"),
  symbol_ = "-", anything_v = letters))
```

```
[1] "---222-44" "---122--"
```

```
just_not_anything3 just_not_anything3
```

Description

Extract only the letters from all elements of a vector, see examples

Usage

```
just_not_anything3(inpt_v, anything_v = c())
```

Arguments

`inpt_v` is the input vector

Examples

```
print(just_not_anything3(inpt_v = c("oui222jj644", "oui122jj"),
  anything_v = letters))
```

```
[1] "222644" "122"
```

leap_yr	<i>leap_year</i>
---------	------------------

Description

Get if the year is leap

Usage

```
leap_yr(year)
```

Arguments

year is the input year

Examples

```
print(leap_yr(year=2024))

#[1] TRUE
```

left_all	<i>left_all</i>
----------	-----------------

Description

Allow to apply left join on n dataframes, datatables, tibble

Usage

```
left_all(..., keep_val = FALSE, id_v)
```

Arguments

... are all the dataframes etc
 keep_val is if you want to keep the id column
 id_v is the common id of all the dataframes etc

Examples

```
datf1 <- data.frame(
  "id1"=c(1:5),
  "var1"=c("oui", "oui", "oui", "non", "non")
)

datf2 <- data.frame(
  "id1"=c(1, 2, 3, 7, 9),
  "var1"=c("oui2", "oui2", "oui2", "non2", "non2")
)
```

```
print(left_all(datf1, datf2, datf2, datf2, keep_val=FALSE, id_v="idl"))

  idl var1.x var1.y var1.x.x var1.y.y
1   1   oui  oui2   oui2   oui2
2   2   oui  oui2   oui2   oui2
3   3   oui  oui2   oui2   oui2
4   4  non  <NA>   <NA>   <NA>
5   5  non  <NA>   <NA>   <NA>#'
print(left_all(datf1, datf2, datf2, keep_val=FALSE, id_v="idl"))

  idl var1.x var1.y var1
1   1   oui  oui2 oui2
2   2   oui  oui2 oui2
3   3   oui  oui2 oui2
4   4  non  <NA> <NA>
5   5  non  <NA> <NA>
```

letter_to_nb	<i>letter_to_nb</i>
--------------	---------------------

Description

Allow to get the number of a spreadsheet based column by the letter ex: AAA = 703

Usage

```
letter_to_nb(letter)
```

Arguments

letter is the letter (name of the column)

Examples

```
print(letter_to_nb("rty"))

#[1] 12713
```

list_files	<i>list_files</i>
------------	-------------------

Description

A list.files() based function addressing the need of listing the files with extension a or or extension b ...

Usage

```
list_files(patternc, pathc = ".")
```

Arguments

patternc is a vector containing all the extensions you want
 pathc is the path, can be a vector of multiple path because list.files() supports it.

lst_flatnr	<i>lst_flatnr</i>
------------	-------------------

Description

Flatten a list to a vector

Usage

```
lst_flatnr(inpt_l)
```

Arguments

inpt_l is the input list

Examples

```
print(lst_flatnr(inpt_l=list(c(1, 2), c(5, 3), c(7, 2, 7))))
#[1] 1 2 5 3 7 2 7
```

match_by	<i>match_by</i>
----------	-----------------

Description

Allow to match elements by ids, see examples.

Usage

```
match_by(to_match_v = c(), inpt_v = c(), inpt_ids = c())
```

Arguments

to_match_v is the vector containing all the elements to match
 inpt_v is the input vector containong all the elements that could contains the elements to match. Each elements is linked to an element from inpt_ids at any given index, see examples. So inpt_v and inpt_ids must be the same size
 inpt_ids is the vector containing all the ids for the elements in inpt_v. An element is linked to the id x is both are at the same index. So inpt_v and inpt_ids must be the same size

Examples

```
print(match_by(to_match_v = c("a"), inpt_v = c("a", "z", "a", "p", "p", "e", "e", "a"),
             inpt_ids = c(1, 1, 1, 2, 2, 3, 3, 3)))

[1] 1 8

print(match_by(to_match_v = c("a"), inpt_v = c("a", "z", "a", "a", "p", "e", "e", "a"),
             inpt_ids = c(1, 1, 1, 2, 2, 3, 3, 3)))

[1] 1 4 8

print(match_by(to_match_v = c("a", "e"), inpt_v = c("a", "z", "a", "a", "p", "e", "e", "a"),
             inpt_ids = c(1, 1, 1, 2, 2, 3, 3, 3)))

[1] 1 4 8 6
```

match_na_omit	<i>match_na_omit</i>
---------------	----------------------

Description

Performs a match, but remove the NA values in the output if there is one or many, see examples.

Usage

```
match_na_omit(x, table)
```

Arguments

- x is the vector of the patterns to be matched
- table is the vector that may contain the patterns to be matched

Examples

```
match_na_omit(x = c("oui", "non", "2"), table = c("1", "oui", "oui", "ee", "non"))

[1] 2 5
```

multitud	<i>multitud</i>
----------	-----------------

Description

From a list containing vectors allow to generate a vector following this rule: list(c("a", "b"), c("1", "2"), c("A", "Z", "E")) -> c("a1A", "b1A", "a2A", "b2A", "a1Z, ...)

Usage

```
multitud(l, sep_ = "")
```

Arguments

`l` is the list
`sep_` is the separator between elements (default is set to "" as you see in the example)

Examples

```
print(multitud(l=list(c("a", "b"), c("1", "2"), c("A", "Z", "E"), c("Q", "F")), sep="/")

#[1] "a/1/A/Q" "b/1/A/Q" "a/2/A/Q" "b/2/A/Q" "a/1/Z/Q" "b/1/Z/Q" "a/2/Z/Q"
#[8] "b/2/Z/Q" "a/1/E/Q" "b/1/E/Q" "a/2/E/Q" "b/2/E/Q" "a/1/A/F" "b/1/A/F"
#[15] "a/2/A/F" "b/2/A/F" "a/1/Z/F" "b/1/Z/F" "a/2/Z/F" "b/2/Z/F" "a/1/E/F"
#[22] "b/1/E/F" "a/2/E/F" "b/2/E/F"
```

nb2_follow

nb2_follow

Description

Allows to get the number and pattern of potential continuous pattern after an index of a vector, see examples

Usage

```
nb2_follow(inpt_v, inpt_idx, inpt_follow_v = c())
```

Arguments

`inpt_v` is the input vector
`inpt_idx` is the index
`inpt_follow_v` is a vector containing the patterns that are potentially just after `inpt_nb`

Examples

```
print(nb2_follow(inpt_v = c(1:12), inpt_idx = 4, inpt_follow_v = c(5)))

[1] 1 5
# we have 1 times the pattern 5 just after the 4nth index of inpt_v

print(nb2_follow(inpt_v = c(1, "non", "oui", "oui", "oui", "nop", 5), inpt_idx = 2, inpt_follow_v = c(3, "oui"))

[1] "3" "oui"

# we have 3 times continuously the pattern 'oui' and 0 times the pattern 5 just after the 2nd index of inpt_v

print(nb2_follow(inpt_v = c(1, "non", "5", "5", "5", "nop", 5), inpt_idx = 2, inpt_follow_v = c(3, "5"))

[1] "3" "5"
```

nb_follow

nb_follow

Description

Allow to get the number of certains patterns that may be after an index of a vector continuously, see examples

Usage

```
nb_follow(inpt_v, inpt_idx, inpt_follow_v = c())
```

Arguments

inpt_v is the input vector

inpt_idx is the index

inpt_follow_v is a vector containing all the potential patterns that may follow the element in the vector at the index inpt_idx

Examples

```
print(nb_follow(inpt_v = c(1:13), inpt_idx = 6, inpt_follow_v = c(5:9)))
```

```
[1] 3
```

```
print(nb_follow(inpt_v = c("ou", "nn", "pp", "zz", "zz", "ee", "pp"), inpt_idx = 2,
  inpt_follow_v = c("pp", "zz")))
```

```
[1] 3
```

nb_to_letter

nb_to_letter

Description

Allow to get the letter of a spreadsheet based column by the number ex: 703 = AAA

Usage

```
nb_to_letter(x)
```

Arguments

x is the number of the column

Examples

```
print(nb_to_letter(5))  
[1] "e"  
print(nb_to_letter(27))  
[1] "aa"  
print(nb_to_letter(51))  
[1] "ay"  
print(nb_to_letter(52))  
[1] "az"  
print(nb_to_letter(53))  
[1] "ba"  
print(nb_to_letter(675))  
[1] "yy"  
print(nb_to_letter(676))  
[1] "yz"  
print(nb_to_letter(677))  
[1] "za"  
print(nb_to_letter(702))  
[1] "zz"  
print(nb_to_letter(703))  
[1] "aaa"  
print(nb_to_letter(18211))  
[1] "zxx"  
print(nb_to_letter(18277))  
[1] "zzy"  
print(nb_to_letter(18278))  
[1] "zzz"  
print(nb_to_letter(18279))  
[1] "aaaa"
```

nestr_datf1	<i>nestr_datf1</i>
-------------	--------------------

Description

Allow to write a value (1a) to a dataframe (1b) to its cells that have the same coordinates (row and column) than the cells whose value is equal to a another special value (2a), from another another dataframe (2b). The value (1a) depends of the cell value coordinates of the third dataframe (3b). If a cell coordinates (1c) of the first dataframe (1b) does not correspond to the coordinates of a good returning cell value (2a) from the dataframe (2b), so this cell (1c) can have its value changed to the same cell coordinates value (3a) of a third dataframe (4b), if (4b) is not set to NA.

Usage

```
nestr_datf1(
  inptf_datf,
  inptt_pos_datf,
  nestr_datf,
  yes_val = TRUE,
  inptt_neg_datf = NA
)
```

Arguments

```
inptf_datf    is the input dataframe (1b)
inptt_pos_datf
               is the dataframe (2b) that corresponds to the (1a) values
nestr_datf    is the dataframe (2b) that has the special value (2a)
yes_val       is the special value (2a)
inptt_neg_datf
               is the dataframe (4b) that has the (3a) values, defaults to NA
```

Examples

```
print(nestr_datf1(inptf_datf=data.frame(c(1, 2, 1), c(1, 5, 7)),
  inptt_pos_datf=data.frame(c(4, 4, 3), c(2, 1, 2)),
  inptt_neg_datf=data.frame(c(44, 44, 33), c(12, 12, 12)),
  nestr_datf=data.frame(c(TRUE, FALSE, TRUE), c(FALSE, FALSE, TRUE)), yes_val=TRUE))

#  c.1..2..1. c.1..5..7.
#1         4         12
#2        44         12
#3         3          2

print(nestr_datf1(inptf_datf=data.frame(c(1, 2, 1), c(1, 5, 7)),
  inptt_pos_datf=data.frame(c(4, 4, 3), c(2, 1, 2)),
  inptt_neg_datf=NA,
  nestr_datf=data.frame(c(TRUE, FALSE, TRUE), c(FALSE, FALSE, TRUE)), yes_val=TRUE))

#  c.1..2..1. c.1..5..7.
```

#1	4	1
#2	2	5
#3	3	2

nestr_datf2	<i>nestr_datf2</i>
-------------	--------------------

Description

Allow to write a special value (1a) in the cells of a dataframe (1b) that correspond (row and column) to those of another dataframe (2b) that return another special value (2a). The cells whose coordinates do not match the coordinates of the dataframe (2b), another special value can be written (3a) if not set to NA.

Usage

```
nestr_datf2(inptf_datf, rtn_pos, rtn_neg = NA, nestr_datf, yes_val = T)
```

Arguments

inptf_datf	is the input dataframe (1b)
rtn_pos	is the special value (1a)
rtn_neg	is the special value (3a)
nestr_datf	is the dataframe (2b)
yes_val	is the special value (2a)

Examples

```
print(nestr_datf2(inptf_datf=data.frame(c(1, 2, 1), c(1, 5, 7)), rtn_pos="yes",
  rtn_neg="no", nestr_datf=data.frame(c(TRUE, FALSE, TRUE), c(FALSE, FALSE, TRUE)), yes_val=
  # c.1..2..1. c.1..5..7.
  #1      yes      no
  #2      no       no
  #3      yes      yes
```

nest_v	<i>nest_v</i>
--------	---------------

Description

Nest two vectors according to the following parameters.

Usage

```
nest_v(f_v, t_v, step = 1, after = 1)
```

Arguments

<code>f_v</code>	is the vector that will welcome the nested vector <code>t_v</code>
<code>t_v</code>	is the imbriuator vector
<code>step</code>	defines after how many elements of <code>f_v</code> the next element of <code>t_v</code> can be put in the output
<code>after</code>	defines after how many elements of <code>f_v</code> , the beginning of <code>t_v</code> can be put

Examples

```
print(nest_v(f_v=c(1, 2, 3, 4, 5, 6), t_v=c("oui", "oui2", "oui3", "oui4", "oui5", "oui6"),
          step=2, after=2))

#[1] "1"    "2"    "oui"  "3"    "4"    "oui2" "5"    "6"    "oui3" "oui4"
```

<code>new_ordered</code>	<i>new_ordered</i>
--------------------------	--------------------

Description

Returns the indexes of elements contained in "`w_v`" according to "`f_v`"

Usage

```
new_ordered(f_v, w_v, nvr_here = NA)
```

Arguments

<code>f_v</code>	is the input vector
<code>w_v</code>	is the vector containing the elements that can be in <code>f_v</code>
<code>nvr_here</code>	is a value you are sure is not present in <code>f_v</code>

Examples

```
print(new_ordered(f_v=c("non", "non", "non", "oui"), w_v=c("oui", "non", "non")))

#[1] 4 1 2
```

normal_dens	<i>normal_dens</i>
-------------	--------------------

Description

Calculates the normal distribution probability, see examples

Usage

```
normal_dens(target_v = c(), mean, sd)
```

Arguments

target_v	is the target value(s) (one or bounded), see examples
mean	is the mean of the normal distribution
sd	is the standard deviation of the normal distribution

Examples

```
print(normal_dens(target_v = 13, mean = 12, sd = 2))

[1] 0.1760327

print(normal_dens(target_v = c(9, 11), mean = 12, sd = 1.5, step = 0.01))

[1] 0.2288579

print(normal_dens(target_v = c(1, 18), mean = 12, sd = 1.5, step = 0.01))

[1] 0.9999688
```

occu	<i>occu</i>
------	-------------

Description

Allow to see the occurrence of each variable in a vector. Returns a dataframe with, as the first column, the all the unique variable of the vector and , in he second column, their occurrence respectively.

Usage

```
occu(inpt_v)
```

Arguments

inpt_v	the input dataframe
--------	---------------------

Examples

```
print(occu(inpt_v=c("oui", "peut", "peut", "non", "oui")))

#   var occurrence
#1  oui           2
#2  peut          2
#3  non           1
```

old_to_new_idx	<i>old_to_new_idx</i>
----------------	-----------------------

Description

Allow to convert index of elements in a vector `inpt_v` to index of an vector type `1:sum(nchar(inpt_v))`, see examples

Usage

```
old_to_new_idx(inpt_v = c())
```

Arguments

`inpt_v` is the input vector

Examples

```
print(old_to_new_idx(inpt_v = c("oui", "no", "eeee")))

[1] 1 1 1 2 2 3 3 3 3
```

pairs_findr	<i>pairs_findr</i>
-------------	--------------------

Description

Takes a character as input and detect the pairs of pattern, like the parenthesis pairs if the pattern is "(" and then ")"

Usage

```
pairs_findr(inpt, ptrn1 = "(", ptrn2 = ")")
```

Arguments

`inpt` is the input character
`ptrn1` is the first pattern encountered in the pair
`ptrn2` is the second pattern in the pair

Examples

```
print(pairs_findr(inpt="ze+(yu*45/(jk+zz)*(o()p))-(re*(rt+qs)-fg)"))

[[1]]
[1] 4 1 1 3 2 2 3 4 6 5 5 6

[[2]]
[1] 4 11 17 19 21 22 24 25 27 31 37 41
```

`pairs_findr_merger` *pairs_findr_merger*

Description

Takes two different outputs from `pairs_findr` and merge them. Can be usefull when the pairs consists in different patterns, for example one output from the `pairs_findr` function with `ptrn1 = "("` and `ptrn2 = ")"`, and a second output from the `pairs_findr` function with `ptrn1 = ""` and `ptrn2 = ""`.

Usage

```
pairs_findr_merger(lst1 = list(), lst2 = list())
```

Arguments

<code>lst1</code>	is the first ouput from <code>pairs findr</code> function
<code>lst2</code>	is the second ouput from <code>pairs findr</code> function

Examples

```
print(pairs_findr_merger(lst1=list(c(1, 2, 3, 3, 2, 1), c(3, 4, 5, 7, 8, 9)),
                        lst2=list(c(1, 1), c(1, 2))))

[[1]]
[1] 1 1 2 3 4 4 3 2

[[2]]
[1] 1 2 3 4 5 7 8 9

print(pairs_findr_merger(lst1=list(c(1, 2, 3, 3, 2, 1), c(3, 4, 5, 7, 8, 9)),
                        lst2=list(c(1, 1), c(1, 11))))

[[1]]
[1] 1 2 3 4 4 3 2 1

[[2]]
[1] 1 3 4 5 7 8 9 11

print(pairs_findr_merger(lst1=list(c(1, 2, 3, 3, 2, 1), c(3, 4, 5, 8, 10, 11)),
                        lst2=list(c(4, 4), c(6, 7))))

[[1]]
[1] 1 2 3 4 4 3 2 1
```


Description

Takes a character representing an arbitrary condition (like ReGeX for example) or an information (to a parser for example), vectors containing all the pair of pattern that potentially surrounds condition (flagged_pair_v and corr_v), and a vector containing all the conjunction character, as input and returns the character with all or some of the condition surrounded by the pair characters. See examples. All the pair characters are inserted according to the closest pair they found prioritizing those found next to the condition and on the same depth-level and , if not found, the pair found at the n+1 depth-level.

Usage

```
pairs_insertr(
  inpt,
  algo_used = c(1:3),
  flagged_pair_v = c(")", "["),
  corr_v = c("(", "["),
  flagged_conj_v = c("&", "|")
)
```

Arguments

inpt	is the input character representing an arbitrary condition, like ReGeX for example, or information to a parser for example
algo_used	is a vector containing one or more of the 3 algorithms used. The first algorithm will simply put the pair of parenthesis at the condition surrounded and/or after a character flagged (in flagged_conj_v) as a conjunction. The second algorithm will put parenthesis at the condition that are located after other conditions that are surrounded by a pair. The third algorithm will put a pair at all the condition, it is very powerful but takes a longer time. See examples and make experience to see which combination of algorithm(s) is the most efficient for your use case.
flagged_pair_v	is a vector containing all the first character of the pairs
corr_v	is a vector containing all the last character of the pairs
flagged_conj_v	is a vector containing all the conjunction character

Examples

```
print(pairs_insertr(inpt = "([one]|two|twob)three(four)", algo_used = c(1)))
[1] "([one]| [two]| [twob])three(four) "

print(pairs_insertr(inpt = "(one|[two]|twob)three(four)", algo_used = c(2)))
[1] "(one|[two]| [twob]) (three) (four) "

print(pairs_insertr(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(1, 2)))
[1] "(oneA|[one]| [two]| [twob]) (three) (four) "

print(pairs_insertr(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(1, 2, 3)))
[1] "([oneA]| [one]| [two]| [twob]) (three) (four) "
```

```
print(pairs_insertr(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(3)))

[1] "([oneA]|[one]|(two)|(twob))(three)(four)"

print(pairs_insertr(inpt = "(oneA|[one]|two|twob)three((four))", algo_used = c(3)))

[1] "([oneA]|[(one)]|(two)|(twob))(three)((four))"
```

pairs_insertr2

pairs_insertr2

Description

Takes a character representing an arbitrary condition (like ReGeX for example) or an information (to a parser for example), vectors containing all the pair of pattern that potentially surrounds condition (flagged_pair_v and corr_v), and a vector containing all the conjunction character, as input and returns the character with all or some of the condition surrounded by the pair characters. See examples. All the pair characters are inserted according to the closest pair they found prioritizing those found next to the condition and on the same depth-level and, if not found, the pair found at the n+1 depth-level.

Usage

```
pairs_insertr2(
  inpt,
  algo_used = c(1:3),
  flagged_pair_v = c(")", "["),
  corr_v = c("(", "["),
  flagged_conj_v = c("&", "|"),
  method = c("(", ")")
)
```

Arguments

inpt	is the input character representing an arbitrary condition, like ReGex for example, or information to a parser for example
algo_used	is a vector containing one or more of the 3 algorithms used. The first algorithm will simply put the pair of parenthesis at the condition surrounded and/or after a character flagged (in flagged_conj_v) as a conjunction. The second algorithm will put parenthesis at the condition that are located after other conditions that are surrounded by a pair. The third algorithm will put a pair at all the condition, it is very powerful but takes a longer time. See examples and make experience to see which combination of algorithm(s) is the most efficient for your use case.
flagged_pair_v	is a vector containing all the first character of the pairs
corr_v	is a vector containing all the last character of the pairs
flagged_conj_v	is a vector containing all the conjunction character
method	is length 2 vector containing as a first index, the first character of the pair inserted, and at the last index, the second and last character of the pair

Examples

```

print(pairs_insertr2(inpt = "([one]|two|twob)three(four)", algo_used = c(1), method = c("["))

[1] "([one]|(two)|(twob))three(four)"

print(pairs_insertr2(inpt = "([one]|two|twob)three(four)", algo_used = c(1), method = c("["))

[1] "([one]|[two]|[twob])three(four)"

print(pairs_insertr2(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(1, 2)))

[1] "(oneA|[one]|(two)|(twob))(three)(four)"

print(pairs_insertr2(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(1, 2), method = c("["),
  flagged_pair_v = c(")", "[", "#"), corr_v = c("(", "[", "-"))

[1] "(oneA|[one]|-two#|-twob#)-three#(four)"

print(pairs_insertr2(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(1, 2, 3)))

[1] "((oneA|[one]|(two)|(twob))(three)(four))"

print(pairs_insertr2(inpt = "(oneA|[one]|two|twob)three(four)", algo_used = c(3), method = c("["))

[1] "([oneA|[one]|two|twob])[three](four)"

print(pairs_insertr2(inpt = "(oneA|[one]|two|twob)three((four))", algo_used = c(3)))

[1] "((oneA|[one]|(two)|(twob))(three)((four)))"

```

paste_datf

*paste_datf***Description**

Return a vector composed of pasted elements from the input dataframe at the same index.

Usage

```
paste_datf(inpt_datf, sep = "")
```

Arguments

`inpt_datf` is the input dataframe
`sep` is the separator between pasted elements, defaults to ""

Examples

```

print(paste_datf(inpt_datf=data.frame(c(1, 2, 1), c(33, 22, 55))))

[1] "133" "222" "155"

```

paste_datf2	<i>paste_datf2</i>
-------------	--------------------

Description

Return a vector composed of pasted elements from the input dataframe at the same column.

Usage

```
paste_datf2(inpt_datf, sep = "")
```

Arguments

inpt_datf	is the input dataframe
sep	is the separator between pasted elements, defaults to ""

Examples

```
print(paste_datf2(inpt_datf=data.frame(c(1, 2, 1), c(33, 22, 55))))
#[1] "121" "332255"
```

pattern_generator	<i>pattern_generator</i>
-------------------	--------------------------

Description

Allow to create patterns which have a part that is varying randomly each time.

Usage

```
pattern_generator(base_, from_, nb, hmn = 1, after = 1, sep = "")
```

Arguments

base_	is the pattern that will be kept
from_	is the vector from which the elements of the random part will be generated
nb	is the number of random pattern chosen for the varying part
hmn	is how many of varying pattern from the same base will be created
after	is set to 1 by default, it means that the varying part will be after the fixed part, set to 0 if you want the varying part to be before
sep	is the separator between all patterns in the returned value

Examples

```
print(pattern_generator(base_="oui", from_=c("er", "re", "ere"), nb=1, hmn=3))

# [1] "ouier" "ouire" "ouier"

print(pattern_generator(base_="oui", from_=c("er", "re", "ere"), nb=2, hmn=3, after=0, se

# [1] "er-re-o-u-i" "ere-re-o-u-i" "ere-er-o-u-i"
```

pattern_gettr

pattern_gettr

Description

Search for pattern(s) contained in a vector in another vector and return a list containing matched one (first index) and their position (second index) according to these rules: First case: Search for patterns strictly, it means that the searched pattern(s) will be matched only if the patterns contained in the vector that is being explored by the function are present like this c("pattern_searched", "other", ..., "pattern_searched") and not as c("other_thing pattern_searched other_thing", "other", ..., "pattern_searched other_thing") Second case: It is the opposite to the first case, it means that if the pattern is partially present like in the first position and the last, it will be considered like a matched pattern. REGEX can also be used as pattern

Usage

```
pattern_gettr(
  word_,
  vct,
  occ = c(1),
  strict,
  btwn,
  all_in_word = "yes",
  notatall = "###"
)
```

Arguments

word_	is the vector containing the patterns
vct	is the vector being searched for patterns
occ	a vector containing the occurrence of the pattern in word_ to be matched in the vector being searched, if the occurrence is 2 for the nth pattern in word_ and only one occurrence is found in vct so no pattern will be matched, put "forever" to no longer depend on the occurrence for the associated pattern
strict	a vector containing the "strict" condition for each nth vector in word_ ("strict" is the string to activate this option)
btwn	is a vector containing the condition ("yes" to activate this option) meaning that if "yes", all elements between two matched pattern in vct will be returned, so the patterns you enter in word_ have to be in the order you think it will appear in vct

`all_in_word` is a value (default set to "yes", "no" to activate this option) that, if activated, won't authorized a previous matched pattern to be matched again

`notatall` is a string that you are sure is not present in `vct`

Examples

```
print(pattern_gettr(word=c("oui", "non", "erer"), vct=c("oui", "oui", "non", "oui",
  "non", "opp", "opp", "erer", "non", "ok"), occ=c(1, 2, 1),
  btwn=c("no", "yes", "no"), strict=c("no", "no", "ee")))

#[[1]]
#[1] 1 5 8
#
#[[2]]
#[1] "oui" "non" "opp" "opp" "erer"
```

pattern_tuning *pattern_tuning*

Description

Allow to tune a pattern very precisely and output a vector containing its variations `n` times.

Usage

```
pattern_tuning(
  pattn,
  spe_nb,
  spe_l,
  exclude_type,
  hmn = 1,
  rg = c(1, nchar(pattn))
)
```

Arguments

`pattn` is the character that will be tuned

`spe_nb` is the number of new character that will be replaced

`spe_l` is the source vector from which the new characters will replace old ones

`exclude_type` is character that won't be replaced

`hmh` is how many output the function will return

`rg` is a vector with two parameters (index of the first letter that will be replaced, index of the last letter that will be replaced) default is set to all the letters from the source pattern

Examples

```
print(pattern_tuning(pattn="oui", spe_nb=2, spe_l=c("e", "r", "T", "O"), exclude_type="o")

#[1] "orT" "oTr" "oOi"
```

power_to_char	<i>power_to_char</i>
---------------	----------------------

Description

Convert a scientific number to a string representing normally the number.

Usage

```
power_to_char(inpt_v = c())
```

Arguments

`inpt_v` is the input vector containing scientific number, but also other elements that won't be taken in count

Examples

```
print(power_to_char(inpt_v = c(22 * 10000000, 12, 9 * 0.0000002)))
[1] "22000000000" "12" "0.00000018"
```

pre_to_post_idx	<i>pre_to_post_idx</i>
-----------------	------------------------

Description

Allow to convert indexes from a pre-vector to post-indexes based on a current vector, see examples

Usage

```
pre_to_post_idx(inpt_v = c(), inpt_idx = c(1:length(inppt_v)))
```

Arguments

`inpt_v` is the new vector
`inpt_idx` is the vector containing the pre-indexes

Examples

```
print(pre_to_post_idx(inpt_v = c("oui", "no", "eee"), inpt_idx = c(1:8)))
[1] 1 1 1 2 2 3 3 3
As if the first vector was c("o", "u", "i", "n", "o", "e", "e", "e")
```

<code>ptrn_switchr</code>	<i><code>ptrn_switchr</code></i>
---------------------------	----------------------------------

Description

Allow to switch, copy pattern for each element in a vector. Here a pattern is the values that are separated by a same separator. Example: "xx-xxx-xx" or "xx/xx/xxxx". The xx like values can be swiched or copied from whatever index to whatever index. Here, the index is like this 1-2-3 etcetera, it is relative of the separator.

Usage

```
ptrn_switchr(inpt_l, f_idx_l = c(), t_idx_l = c(), sep = "-", default_val = NA)
```

Arguments

- `inpt_l` is the input vector
- `f_idx_l` is a vector containing the indexes of the pattern you want to be altered.
- `t_idx_l` is a vector containing the indexes to which the indexes in `f_idx_l` are related.
- `sep` is the separator, defaults to "-"
- `default_val` is the default value , if not set to NA, of the pattern at the indexes in `f_idx_l`. If it is not set to NA, you do not need to fill `t_idx_l` because this is the vector containing the indexes of the patterns that will be set as new values relatively to the indexes in `f_idx_l`. Defaults to NA.

Examples

```
print(ptrn_switchr(inpt_l=c("2022-01-11", "2022-01-14", "2022-01-21",
"2022-01-01"), f_idx_l=c(1, 2, 3), t_idx_l=c(3, 2, 1)))

#[1] "11-01-2022" "14-01-2022" "21-01-2022" "01-01-2022"

print(ptrn_switchr(inpt_l=c("2022-01-11", "2022-01-14", "2022-01-21",
"2022-01-01"), f_idx_l=c(1), default_val="ee"))

#[1] "ee-01-11" "ee-01-14" "ee-01-21" "ee-01-01"
```

<code>ptrn_twkr</code>	<i><code>ptrn_twkr</code></i>
------------------------	-------------------------------

Description

Allow to modify the pattern length of element in a vector according to arguments. What is here defined as a pattern is something like this xx-xx-xx or xx/xx/xxx... So it is defined by the separator

Usage

```
ptrn_twkr(
  inpt_l,
  depth = "max",
  sep = "-",
  default_val = "0",
  add_sep = TRUE,
  end_ = TRUE
)
```

Arguments

<code>inpt_l</code>	is the input vector
<code>depth</code>	is the number (numeric) of separator it will keep as a result. To keep the number of separator of the element that has the minimum amount of separator do <code>depth="min"</code> and <code>depth="max"</code> (character) for the opposite. This value defaults to "max".
<code>sep</code>	is the separator of the pattern, defaults to "-"
<code>default_val</code>	is the default val that will be placed between the separator, defaults to "00"
<code>add_sep</code>	defaults to TRUE. If set to FALSE, it will remove the separator for the patterns that are included in the interval between the depth amount of separator and the actual number of separator of the element.
<code>end_</code>	is if the default_val will be added at the end or at the beginning of each element that lacks length compared to depth

Examples

```
v <- c("2012-06-22", "2012-06-23", "2022-09-12", "2022")

ptrn_twkr(inpt_l=v, depth="max", sep="-", default_val="00", add_sep=TRUE)

#[1] "2012-06-22" "2012-06-23" "2022-09-12" "2022-00-00"

ptrn_twkr(inpt_l=v, depth=1, sep="-", default_val="00", add_sep=TRUE)

#[1] "2012-06" "2012-06" "2022-09" "2022-00"

ptrn_twkr(inpt_l=v, depth="max", sep="-", default_val="00", add_sep=TRUE, end_=FALSE)

#[1] "2012-06-22" "2012-06-23" "2022-09-12" "00-00-2022"
```

<code>read_edm_parser</code>	<i>read_edm_parser</i>
------------------------------	------------------------

Description

Allow to read data from edm parsed dataset, see examples

Usage

```
read_edm_parser(inpt, to_find_v = c())
```

Arguments

`inpt` is the input dataset
`to_find_v` is the vector containing the path to find the data, see examples

Examples

```
print(read_edm_parser("(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))",
  to_find_v = c("ok", "oui", "rr", "rr2")))

[1] "6"

print(read_edm_parser("(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))", t
  to_find_v = c("ok", "oui", "rr", "rr2")))

[1] "56"

print(read_edm_parser("(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))", t
  to_find_v = c("ok", "oui", "rr", "rr2")))

[1] "56"
```

```
rearangr_v
```

```
rearangr_v
```

Description

Rearranges a vector "w_v" according to another vector "inpt_v". `inpt_v` contains a sequence of number. `inpt_v` and `w_v` have the same size and their indexes are related. The output will be a vector containing all the elements of `w_v` rearranges in descending or ascending order according to `inpt_v`

Usage

```
rearangr_v(inpt_v, w_v, how = "increasing")
```

Arguments

`inpt_v` is the vector that contains the sequence of number
`w_v` is the vector containing the elements related to `inpt_v`
`how` is the way the elements of `w_v` will be outputed according to if `inpt_v` will be sorted ascendigly or descendigly

Examples

```
print(rearangr_v(inpt_v=c(23, 21, 56), w_v=c("oui", "peut", "non"), how="decreasing"))

#[1] "non" "oui" "peut"
```

```
regex_spe_detect      regex_spe_detect
```

Description

Takes a character as input and returns its regex-friendly character for R.

Usage

```
regex_spe_detect (inpt)
```

Arguments

`inpt` the input character

Examples

```
print(regex_spe_detect("o"))

[1] "o"

print(regex_spe_detect("("))

[1] "\\("

print(regex_spe_detect("tr(o)m"))

[1] "tr\\(o\\)m"

print(regex_spe_detect(inpt="fggfg[fggf]fgfg(vg?fgfgf.gf)"))

[1] "fggfg\\[fggf\\]fgfg\\(vg\\?fgfgf\\.gf\\)"

print(regex_spe_detect(inpt = "---"))

[1] "\\-\\-\\-"
```

```
regroupr      regroupr
```

Description

Allow to sort data like "c(X1/Y1/Z1, X2/Y1/Z2, ...)" to what you want. For example it can be to "c(X1/Y1/21, X1/Y1/Z2, ...)"

Usage

```
regroupr (
  inpt_v,
  sep_ = "-",
  order = c(1:length(unlist(strsplit(x = inpt_v[1], split = sep_)))),
  l_order = NA
)
```

Arguments

<code>inpt_v</code>	is the input vector containing all the data you want to sort in a specific way. All the sub-elements should be separated by a unique separator such as "-" or "/"
<code>sep_</code>	is the unique separator separating the sub-elements in each elements of <code>inpt_v</code>
<code>order</code>	is a vector describing the way the elements should be sorted. For example if you want this dataset "c(X1/Y1/Z1, X2/Y1/Z2, ...)" to be sorted by the last element you should have <code>order=c(3:1)</code> , for example, and it should returns something like this <code>c(X1/Y1/Z1, X2/Y1/Z1, X1/Y2/Z1, ...)</code> assuming you have only two values for X.
<code>l_order</code>	is a list containing the vectors of values you want to order first for each sub-elements

Examples

```
vec <- multitud(l=list(c("a", "b"), c("1", "2"), c("A", "Z", "E"), c("Q", "F")), sep_="/")

print(vec)

# [1] "a/1/A/Q" "b/1/A/Q" "a/2/A/Q" "b/2/A/Q" "a/1/Z/Q" "b/1/Z/Q" "a/2/Z/Q"
# [8] "b/2/Z/Q" "a/1/E/Q" "b/1/E/Q" "a/2/E/Q" "b/2/E/Q" "a/1/A/F" "b/1/A/F"
#[15] "a/2/A/F" "b/2/A/F" "a/1/Z/F" "b/1/Z/F" "a/2/Z/F" "b/2/Z/F" "a/1/E/F"
#[22] "b/1/E/F" "a/2/E/F" "b/2/E/F"

print(regroupr(inpt_v=vec, sep_="/"))

# [1] "a/1/1/1" "a/1/2/2" "a/1/3/3" "a/1/4/4" "a/1/5/5" "a/1/6/6"
# [7] "a/2/7/7" "a/2/8/8" "a/2/9/9" "a/2/10/10" "a/2/11/11" "a/2/12/12"
#[13] "b/1/13/13" "b/1/14/14" "b/1/15/15" "b/1/16/16" "b/1/17/17" "b/1/18/18"
#[19] "b/2/19/19" "b/2/20/20" "b/2/21/21" "b/2/22/22" "b/2/23/23" "b/2/24/24"

vec <- vec[-2]

print(regroupr(inpt_v=vec, sep_="/"))

# [1] "a/1/1/1" "a/1/2/2" "a/1/3/3" "a/1/4/4" "a/1/5/5" "a/1/6/6"
# [7] "a/2/7/7" "a/2/8/8" "a/2/9/9" "a/2/10/10" "a/2/11/11" "a/2/12/12"
#[13] "b/1/13/13" "b/1/14/14" "b/1/15/15" "b/1/16/16" "b/1/17/17" "b/2/18/18"
#[19] "b/2/19/19" "b/2/20/20" "b/2/21/21" "b/2/22/22" "b/2/23/23"

print(regroupr(inpt_v=vec, sep_="/", order=c(4:1)))

#[1] "1/1/A/Q" "2/2/A/Q" "3/3/A/Q" "4/4/A/Q" "5/5/Z/Q" "6/6/Z/Q"
# [7] "7/7/Z/Q" "8/8/Z/Q" "9/9/E/Q" "10/10/E/Q" "11/11/E/Q" "12/12/E/Q"
#[13] "13/13/A/F" "14/14/A/F" "15/15/A/F" "16/16/A/F" "17/17/Z/F" "18/18/Z/F"
#[19] "19/19/Z/F" "20/20/Z/F" "21/21/E/F" "22/22/E/F" "23/23/E/F" "24/24/E/F"
```

rm_na_rows

rm_na_rows

Description

Allow to remove certain rows that contains NA, see examples.

Usage

```
rm_na_rows(inpt_datf, flagged_vals = c())
```

Arguments

`inpt_datf` is the input dataframe

`flagged_vals` is a vector containing the characters that will drop any rows that contains it

Examples

```
datf <- data.frame(c(1, 2, NA, 4), c(1:4))
print(datf)
```

```
  c.1..2..NA..4. c.1.4.
1             1      1
2             2      2
3            NA      3
4             4      4
```

```
print(rm_na_rows(inpt_datf = datf))
```

```
  c.1..2..NA..4. c.1.4.
1             1      1
2             2      2
4             4      4
```

rm_rows

rm_rows

Description

Allow to remove certain rows that contains certains characters, see examples.

Usage

```
rm_rows(inpt_datf, flagged_vals = c())
```

Arguments

`inpt_datf` is the input dataframe

`flagged_vals` is a vector containing the characters that will drop any rows that contains it

Examples

```
datf <- data.frame(c(1, 2, NA, 4), c(1:4))
print(datf)
```

```
  c.1..2..NA..4. c.1.4.
1             1      1
2             2      2
3            NA      3
4             4      4
```

```
print(rm_rows(inpt_datf = datf, flagged_vals = c(1, 4)))  
  
  c.1..2..NA..4. c.1.4.  
2           2      2  
3           NA      3
```

row_to_col	<i>row_to_col</i>
------------	-------------------

Description

Allow to reverse a dataframe (rows become cols and cols become rows)

Usage

```
row_to_col(inpt_datf)
```

Arguments

inpt_datf is the inout dataframe

Examples

```
datf_test <- data.frame(c(1, 11), c(2, 10), c(3, 9), c(4, 8))  
  
print(datf_test)  
  
  c.1..11. c.2..10. c.3..9. c.4..8.  
1           1           2           3           4  
2          11          10          9           8  
  
print(row_to_col(inpt_datf = datf_test))  
  
  1  2  
1 1 11  
2 2 10  
3 3  9  
4 4  8
```

r_print	<i>r_print</i>
---------	----------------

Description

Allow to print vector elements in one row.

Usage

```
r_print(inpt_v, sep_ = "and", begn = "This is", end = ", voila!")
```

Arguments

inpt_v	is the input vector
sep_	is the separator between each elements
begn	is the character put at the beginning of the print
end	is the character put at the end of the print

Examples

```
print(r_print(inpt_v=c(1:33)))
```

```
#[1] "This is  1 and 2 and 3 and 4 and 5 and 6 and 7 and 8 and 9 and 10 and 11 and 12 and
#and 14 and 15 and 16 and 17 and 18 and 19 and 20 and 21 and 22 and 23 and 24 and 25 and
#and 27 and 28 and 29 and 30 and 31 and 32 and 33 and , voila!"
```

save_untl

save_untl

Description

Get the elements in each vector from a list that are located before certain values

Usage

```
save_untl(inpt_l = list(), val_to_stop_v = c())
```

Arguments

inpt_l	is the input list containing all the vectors
val_to_stop_v	is a vector containing the values that marks the end of the vectors returned in the returned list, see the examples

Examples

```
print(save_untl(inpt_l=list(c(1:4), c(1, 1, 3, 4), c(1, 2, 4, 3)), val_to_stop_v=c(3, 4)))
```

```
#[[1]]
#[1] 1 2
#
#[[2]]
#[1] 1 1
#
#[[3]]
#[1] 1 2
```

```
print(save_untl(inpt_l=list(c(1:4), c(1, 1, 3, 4), c(1, 2, 4, 3)), val_to_stop_v=c(3)))
```

```
#[[1]]
#[1] 1 2
#
#[[2]]
```

```
#[1] 1 1
#
#[[3]]
#[1] 1 2 4
```

see_datf

see_datf

Description

Allow to return a dataframe with special value cells (ex: TRUE) where the condition entered are respected and another special value cell (ex: FALSE) where these are not

Usage

```
see_datf(
  datf,
  condition_l,
  val_l,
  conjunction_l = c(),
  rt_val = TRUE,
  f_val = FALSE
)
```

Arguments

<code>datf</code>	is the input dataframe
<code>condition_l</code>	is the vector of the possible conditions ("==", ">", "<", "!=", "%%", "reg", "not_reg", "sup_nchar", "inf_nchar", "nchar") (equal to some elements in a vector, greater than, lower than, not equal to, is divisible by, the regex condition returns TRUE, the regex condition returns FALSE, the length of the elements is strictly superior to X, the length of the element is strictly inferior to X, the length of the element is equal to one element in a vector), you can put the same condition n times.
<code>val_l</code>	is the list of vectors containing the values or vector of values related to <code>condition_l</code> (so the vector of values has to be placed in the same order)
<code>conjunction_l</code>	contains the and or conjunctions, so if the length of <code>condition_l</code> is equal to 3, there will be 2 conjunctions. If the length of <code>conjunction_l</code> is inferior to the length of <code>condition_l</code> minus 1, <code>conjunction_l</code> will match its goal length value with its last argument as the last arguments. For example, <code>c("&", "l", "&")</code> with a goal length value of 5 -> <code>c("&", "l", "&", "&", "&")</code>
<code>rt_val</code>	is a special value cell returned when the conditions are respected
<code>f_val</code>	is a special value cell returned when the conditions are not respected

Details

This function will return an error if number only comparative conditions are given in addition to having character values in the input dataframe.

Examples

```

datf1 <- data.frame(c(1, 2, 4), c("a", "a", "zu"))

print(see_datf(datf=datf1, condition_l=c("nchar"), val_l=list(c(1))))

#      X1      X2
#1 TRUE   TRUE
#2 TRUE   TRUE
#3 TRUE FALSE

print(see_datf(datf=datf1, condition_l=c("=="), val_l=list(c("a", 1))))

#      X1      X2
#1 TRUE   TRUE
#2 FALSE  TRUE
#3 FALSE FALSE

print(see_datf(datf=datf1, condition_l=c("nchar"), val_l=list(c(1, 2))))

#      X1      X2
#1 TRUE TRUE
#2 TRUE TRUE
#3 TRUE TRUE

print(see_datf(datf=datf1, condition_l=c("not_reg"), val_l=list("[a-z]")))

#      X1      X2
#1 TRUE FALSE
#2 TRUE FALSE
#3 TRUE FALSE

```

see_diff

see_diff

Description

Output the opposite of intersect(a, b). Already seen at: <https://stackoverflow.com/questions/19797954/function-to-find-symmetric-difference-opposite-of-intersection-in-r>

Usage

```
see_diff(vec1 = c(), vec2 = c())
```

Arguments

vec1	is the first vector
vec2	is the second vector

Examples

```
print(see_diff(c(1:7), c(4:12)))

[1] 1 2 3 8 9 10 11 12
```

see_diff_all	<i>see_diff_all</i>
--------------	---------------------

Description

Allow to perform the opposite of intersect function to n vectors.

Usage

```
see_diff_all(...)
```

Arguments

... are all the input vectors

Examples

```
vec1 <- c(3:6)
vec2 <- c(1:8)
vec3 <- c(12:16)

print(see_diff_all(vec1, vec2))

[1] 1 2 7 8

print(see_diff_all(vec1, vec2, vec3))

[1] 3 4 5 6 1 2 7 8 12 13 14 15 16
```

see_file	<i>see_file</i>
----------	-----------------

Description

Allow to get the filename or its extension

Usage

```
see_file(string_, index_ext = 1, ext = TRUE)
```

Arguments

string_	is the input string
index_ext	is the occurrence of the dot that separates the filename and its extension
ext	is a boolean that if set to TRUE, will return the file extension and if set to FALSE, will return filename

Examples

```
print(see_file(string_="file.abc.xyz"))  
#[1] ".abc.xyz"  
  
print(see_file(string_="file.abc.xyz", ext=FALSE))  
#[1] "file"  
  
print(see_file(string_="file.abc.xyz", index_ext=2))  
#[1] ".xyz"
```

*see_idx**see_idx*

Description

Returns a boolean vector to see if a set of elements contained in v1 is also contained in another vector (v2)

Usage

```
see_idx(v1, v2)
```

Arguments

v1	is the first vector
v2	is the second vector

Examples

```
print(see_idx(v1=c("oui", "non", "peut", "oo"), v2=c("oui", "peut", "oui")))  
#[1] TRUE FALSE TRUE FALSE
```

see_inside

see_inside

Description

Return a list containing all the column of the files in the current directory with a chosen file extension and its associated file and sheet if xlsx. For example if i have 2 files "out.csv" with 2 columns and "out.xlsx" with 1 column for its first sheet and 2 for its second one, the return will look like this: c(column_1, column_2, column_3, column_4, column_5, unique_separator, "1-2-out.csv", "3-3-sheet_1-out.xlsx", 4-5-sheet_2-out.xlsx)

Usage

```
see_inside(
  pattern_,
  path_ = ".",
  sep_ = c(",", ""),
  unique_sep = "#####",
  rec = FALSE
)
```

Arguments

pattern_	is a vector containin the file extension of the spreadsheets ("xlsx", "csv"...)
path_	is the path where are located the files
sep_	is a vector containing the separator for each csv type file in order following the operating system file order, if the vector does not match the number of the csv files found, it will assume the separator for the rest of the files is the same as the last csv file found. It means that if you know the separator is the same for all the csv type files, you just have to put the separator once in the vector.
unique_sep	is a pattern that you know will never be in your input files
rec	is a boolean allows to get files recursively if set to TRUE, defaults to TRUE If x is the return value, to see all the files name, position of the columns and possible sheet name associanted with, do the following:

see_in_grep

see_in_grep

Description

Allow to get the indices of the elements of a vector that contains certyain patterns. The type of the output may change in function of the input vectors, see examples

Usage

```
see_in_grep(from_v = c(), in_v = c())
```

Arguments

`from_v` is the vector that may contains elements that contains the same patterns that those in `in_v`, see examples

`in_v` is a vector that contains the patterns to find

Examples

```
print(see_in_grep(from_v = c("oui", "non", "peut"),
                  in_v = c("ou", "eu", "plm")))

      ou      eu      plm
      1      3      -1

print(see_in_grep(from_v = c("oui", "non", "peut", "oui"),
                  in_v = c("ou", "eu", "plm")))

$ou
[1] 1 4

$eu
[1] 3

$plm
[1] -1
```

see_in_l

see_in_l

Description

Allow to get the patterns that are present in the elements of a vector, see examples

Usage

```
see_in_l(from_v = c(), in_v = c())
```

Arguments

`from_v` is the vector that may contains elements that contains the same patterns that those in `in_v`, see examples

`in_v` is a vector that contains the patterns to find

Examples

```
print(see_in_l(from_v = c("oui", "non", "peut"),
               in_v = c("ou", "pe", "plm")))

      ou      pe      plm
      TRUE  TRUE FALSE
```

see_mode

see_mode

Description

Allow to get the mode of a vector, see examples.

Usage

```
see_mode(inpt_v = c())
```

Arguments

inpt_v is the input vector

Examples

```
print(see_mode(inpt_v = c(1, 1, 2, 2, 2, 3, 1, 2)))
```

```
[1] 2
```

```
print(see_mode(inpt_v = c(1, 1, 2, 2, 2, 3, 1)))
```

```
[1] 1
```

selected_char

selected_char

Description

Allow to generate a char based on a combinaison on characters from a vector and a number

Usage

```
selected_char(n, base_char = letters)
```

Arguments

n is how many sequence of numbers will be generated

base_char is the vector containing the elements from which the character is generated

Examples

```
print(selected_char(1222))
```

```
[1] "zta"
```

sequence_na_mean1 *sequence_na_mean1*

Description

In a dataframe generated by the function `historic_sequence1`, convert all NA to the mean of the values at the same variable for the individual at the id where the NA occurs, see examples (only accepts numeric variables)

Usage

```
sequence_na_mean1(inpt_datf, bf_)
```

Arguments

`inpt_datf` is the input dataframe

Examples

```
set.seed(123)
var1 <- round(runif(n = 14, min = 100, max = 122))
set.seed(123)
var2 <- round(runif(n = 14, min = 14, max = 20))

datf <- data.frame("ids" = c(20, 20, 20, 20, 19, 19, 19, 18, 18, 18, 18,
17, 17, 17),
"individual" = c("oui", "non", "peut1", "peut2",
"oui", "peut1", "peut2"),
"var1" = var1,
"var2" = var2)
datf <- historic_sequence1(inpt_datf = datf, bf_ = 2)
datf[3, 4] <- NA
datf[6, 4] <- NA
datf[1, 3] <- NA
print(datf)
```

	id_seq	individual	var1-1	var1-2	var2-1	var2-2
1	20	oui	NA	120	20	19
2	20	non	NA	112	NA	17
3	20	peut1	101	NA	14	17
4	20	peut2	112	121	17	20
5	19	oui	120	110	19	17
6	19	peut1	110	NA	17	18
7	19	peut2	121	113	20	17

```
print(sequence_na_mean1(inpt_datf = datf, bf_ = 2))
```

	id_seq	individual	var1-1	var1-2	var2-1	var2-2
1	20	oui	115	120.0	20	19
2	20	non	112	112.0	17	17
3	20	peut1	101	105.5	14	17
4	20	peut2	112	121.0	17	20
5	19	oui	120	110.0	19	17
6	19	peut1	110	105.5	17	18

```
7      19      peut2      121  113.0      20      17
```

```
sequence_na_mean2  sequence_na_mean2
```

Description

In a dataframe generated by the function `historic_sequence1`, convert all NA to the mean of the values at the same variable for the individual at the id where the NA occurs, see examples (only accepts numeric variables)

Usage

```
sequence_na_mean2(inpt_datf, bf_)
```

Arguments

`inpt_datf` is the input dataframe
`bf_` is how at how many n-1 we look for the value of the variables for the individual at time index n

Examples

```
set.seed(123)
var1 <- round(runif(n = 14, min = 100, max = 122))
set.seed(123)
var2 <- round(runif(n = 14, min = 14, max = 20))

datf <- data.frame("ids" = c(20, 20, 20, 20, 19, 19, 19, 18, 18, 18, 18,
17, 17, 17),
"individual" = c("oui", "non", "peut1", "peut2",
"oui", "peut1", "peut2"),
"var1" = var1,
"var2" = var2)
datf <- historic_sequence2(inpt_datf = datf, bf_ = 2)
datf[3, 4] <- NA
datf[6, 4] <- NA
datf[1, 3] <- NA
print(datf)
```

	id_seq	individual	var1-0	var1-1	var1-2	var2-0	var2-1	var2-2
1	20	oui	NA	121	120	16	NA	19
2	20	non	117	NA	112	19	NA	17
3	20	peut1	109	NA	110	16	14	17
4	20	peut2	119	112	121	19	17	20
5	19	oui	121	120	110	20	19	17
6	19	peut1	101	NA	115	14	17	18
7	19	peut2	112	121	113	17	20	17

```
print(sequence_na_mean2(inpt_datf = datf, bf_ = 2))
```

	id_seq	individual	var1-0	var1-1	var1-2	var2-0	var2-1	var2-2
1	20	oui	117	121.0000	120	16	18	19

2	20	non	117	114.5000	112	19	18	17
3	20	peut1	109	108.3333	110	16	14	17
4	20	peut2	119	112.0000	121	19	17	20
5	19	oui	121	120.0000	110	20	19	17
6	19	peut1	101	108.3333	115	14	17	18
7	19	peut2	112	121.0000	113	17	20	17

sequence_na_med1	sequence_na_med1
------------------	------------------

Description

In a dataframe generated by the function `historic_sequence1`, convert all NA to the median of the values at the same variable for the individual at the id where the NA occurs, see examples (only accepts numeric variables)

Usage

```
sequence_na_med1(inpt_datf, bf_)
```

Arguments

`inpt_datf` is the input dataframe

`bf_` is how at how many n - 1 we look for the value of the variables for the individual at time index n

Examples

```
set.seed(123)
var1 <- round(runif(n = 14, min = 100, max = 122))
set.seed(123)
var2 <- round(runif(n = 14, min = 14, max = 20))

datf <- data.frame("ids" = c(20, 20, 20, 20, 19, 19, 19, 18, 18, 18, 18,
17, 17, 17),
"individual" = c("oui", "non", "peut1", "peut2",
"oui", "peut1", "peut2"),
"var1" = var1,
"var2" = var2)
datf <- historic_sequence1(inpt_datf = datf, bf_ = 2)
datf[3, 4] <- NA
datf[6, 4] <- NA
datf[1, 3] <- NA
print(datf)
```

	id_seq	individual	var1-1	var1-2	var2-1	var2-2
1	20	oui	NA	120	20	19
2	20	non	NA	112	NA	17
3	20	peut1	101	NA	14	17
4	20	peut2	112	121	17	20
5	19	oui	120	110	19	17
6	19	peut1	110	NA	17	18
7	19	peut2	121	113	20	17

```
print(sequence_na_med1(inpt_datf = datf, bf_ = 2))
```

	id_seq	individual	var1-1	var1-2	var2-1	var2-2
1	20	oui	115	120.0	20	19
2	20	non	112	112.0	17	17
3	20	peut1	101	105.5	14	17
4	20	peut2	112	121.0	17	20
5	19	oui	120	110.0	19	17
6	19	peut1	110	105.5	17	18
7	19	peut2	121	113.0	20	17

sequence_na_med2	<i>sequence_na_med2</i>
------------------	-------------------------

Description

In a dataframe generated by the function `historic_sequence2`, convert all NA to the median of the values at the same variable for the individual at the id where the NA occurs, see examples (only accepts numeric variables)

Usage

```
sequence_na_med2(inpt_datf, bf_)
```

Arguments

<code>inpt_datf</code>	is the input dataframe
<code>bf_</code>	is how at how many n -1 we look for the value of the variables for the individual at time index n

Examples

```
set.seed(123)
var1 <- round(runif(n = 14, min = 100, max = 122))
set.seed(123)
var2 <- round(runif(n = 14, min = 14, max = 20))
datf <- data.frame("ids" = c(20, 20, 20, 20, 19, 19, 19, 18, 18, 18, 18,
17, 17, 17),
"individual" = c("oui", "non", "peut1", "peut2",
"oui", "peut1", "peut2"),
"var1" = var1,
"var2" = var2)
datf <- historic_sequence2(inpt_datf = datf, bf_ = 2)
datf[3, 4] <- NA
datf[6, 4] <- NA
datf[1, 3] <- NA
print(datf)
```

	id_seq	individual	var1-0	var1-1	var1-2	var2-0	var2-1	var2-2
1	20	oui	NA	121	120	16	20	19
2	20	non	117	NA	112	19	NA	17
3	20	peut1	109	NA	110	16	14	17

```

4      20      peut2      119      112      121      19      17      20
5      19        oui      121      120      110      20      19      17
6      19      peut1      101      NA      115      14      17      18
7      19      peut2      112      121      113      17      20      17

```

```
print(sequence_na_med2(inpt_datf = datf, bf_ = 2))
```

```

  id_seq individual var1-0 var1-1 var1-2 var2-0 var2-1 var2-2
1      20        oui     120  121.0     120     16     20     19
2      20        non     117  114.5     112     19     18     17
3      20      peut1     109  109.0     110     16     14     17
4      20      peut2     119  112.0     121     19     17     20
5      19        oui     121  120.0     110     20     19     17
6      19      peut1     101  109.0     115     14     17     18
7      19      peut2     112  121.0     113     17     20     17

```

sort_date

sort_date

Description

Allow to sort any vector containing a date, from any kind of format (my, hdmy, ymd ...), see examples.

Usage

```
sort_date(inpt_v, frmt, sep_ = "-", ascending = FALSE, give = "value")
```

Arguments

inpt_v	is the input vector containing all the dates
frmt	is the format of the dates, (any combinaison of letters "s" for second, "n", for minute, "h" for hour, "d" for day, "m" for month and "y" for year)
sep_	is the separator used for the dates
ascending	is the used to sort the dates
give	takes only two values "index" or "value", if give == "index", the function will output the index of sorted dates from inpt_v, if give == "value", the function will output the value, it means directly the sorted dates in inpt_v, see examples

Examples

```

print(sort_date(inpt_v = c("01-11-2025", "08-08-1922", "12-04-1966")
, frmt = "dmy", sep_ = "-", ascending = TRUE, give = "value"))

[1] "08-08-1922" "12-04-1966" "01-11-2025"

print(sort_date(inpt_v = c("01-11-2025", "08-08-1922", "12-04-1966")
, frmt = "dmy", sep_ = "-", ascending = FALSE, give = "value"))

[1] "01-11-2025" "12-04-1966" "08-08-1922"

```

```
print(sort_date(inpt_v = c("01-11-2025", "08-08-1922", "12-04-1966")
, frmt = "dmy", sep_ = "-", ascending = TRUE, give = "index"))

[1] 2 3 1

print(sort_date(inpt_v = c("22-01-11-2025", "11-12-04-1966", "12-12-04-1966")
, frmt = "hdmy", sep_ = "-", ascending = FALSE, give = "value"))

[1] "22-01-11-2025" "12-12-04-1966" "11-12-04-1966"

print(sort_date(inpt_v = c("03-22-01-11-2025", "56-11-12-04-1966", "23-12-12-04-1966")
, frmt = "nhdmy", sep_ = "-", ascending = FALSE, give = "value"))

[1] "03-22-01-11-2025" "23-12-12-04-1966" "56-11-12-04-1966"
```

sort_normal_qual	<i>sort_normal_qual</i>
------------------	-------------------------

Description

Sort qualitative modalities that have their frequency normally distributed from an unordered dataset, see examples. This function uses an another alorythm than choose_normal_qual2 which may be faster.

Usage

```
sort_normal_qual(inpt_datf)
```

Arguments

`inpt_datf` is the input dataframe, containing the values in the first column and their frequency in the second

Examples

```
sample_val <- round(rnorm(n = 2000, mean = 12, sd = 2), 1)
sample_freq <- unique_total(sample_val)
sample_qual <- infinite_char_seq(n = length(sample_freq))
datf_test <- data.frame(sample_qual, sample_freq)
datf_test[, 2] <- datf_test[, 2] / sum(datf_test[, 2]) # optional

print(datf_test)

  sample_qual sample_freq
1          a 0.208695652
2          b 0.234782609
3          c 0.321739130
4          d 0.339130435
5          e 0.330434783
6          f 0.069565217
7          g 0.234782609
8          h 0.400000000
9          i 0.347826087
```

10	j	0.043478261
11	k	0.278260870
12	l	0.286956522
13	m	0.243478261
14	n	0.147826087
15	o	0.234782609
16	p	0.252173913
17	q	0.417391304
18	r	0.095652174
19	s	0.313043478
20	t	0.008695652
21	u	0.130434783
22	v	0.391304348
23	w	0.113043478
24	x	0.295652174
25	y	0.243478261
26	z	0.382608696
27	aa	0.008695652
28	ab	0.347826087
29	ac	0.330434783
30	ad	0.321739130
31	ae	0.347826087
32	af	0.321739130
33	ag	0.173913043
34	ah	0.278260870
35	ai	0.278260870
36	aj	0.347826087
37	ak	0.026086957
38	al	0.295652174
39	am	0.226086957
40	an	0.295652174
41	ao	0.234782609
42	ap	0.113043478
43	aq	0.234782609
44	ar	0.173913043
45	as	0.017391304
46	at	0.252173913
47	au	0.078260870
48	av	0.086956522
49	aw	0.278260870
50	ax	0.086956522
51	ay	0.200000000
52	az	0.295652174
53	ba	0.052173913
54	bb	0.165217391
55	bc	0.408695652
56	bd	0.269565217
57	be	0.104347826
58	bf	0.391304348
59	bg	0.104347826
60	bh	0.043478261
61	bi	0.200000000
62	bj	0.095652174
63	bk	0.191304348
64	bl	0.008695652
65	bm	0.165217391
66	bn	0.226086957

```

67      bo 0.086956522
68      bp 0.017391304
69      bq 0.121739130
70      br 0.234782609
71      bs 0.121739130
72      bt 0.078260870
73      bu 0.173913043
74      bv 0.104347826
75      bw 0.208695652
76      bx 0.017391304
77      by 0.243478261
78      bz 0.034782609
79      ca 0.017391304
80      cb 0.008695652
81      cc 0.173913043
82      cd 0.147826087
83      ce 0.060869565
84      cf 0.017391304
85      cg 0.060869565
86      ch 0.008695652
87      ci 0.208695652
88      cj 0.043478261
89      ck 0.052173913
90      cl 0.017391304
91      cm 0.017391304
92      cn 0.095652174
93      co 0.113043478
94      cp 0.017391304
95      cq 0.017391304
96      cr 0.026086957
97      cs 0.034782609
98      ct 0.017391304
99      cu 0.026086957
100     cv 0.026086957
101     cw 0.026086957
102     cx 0.017391304
103     cy 0.043478261
104     cz 0.008695652
105     da 0.034782609
106     db 0.017391304
107     dc 0.060869565
108     dd 0.008695652
109     de 0.008695652
110     df 0.017391304
111     dg 0.008695652
112     dh 0.008695652
113     di 0.017391304
114     dj 0.008695652
115     dk 0.008695652

```

```
print(sort_normal_qual(inpt_datf = datf_test))
```

```

0.00869565217391304 0.00869565217391304 0.00869565217391304 0.00869565217391304
      "aa"              "cb"              "cz"              "de"
0.00869565217391304 0.00869565217391304 0.0173913043478261 0.0173913043478261
      "dh"              "dk"              "bp"              "ca"
0.0173913043478261 0.0173913043478261 0.0173913043478261 0.0173913043478261

```

"cl"	"cp"	"ct"	"db"
0.0173913043478261	0.0260869565217391	0.0260869565217391	0.0347826086956522
"di"	"cr"	"cv"	"bz"
0.0347826086956522	0.0434782608695652	0.0434782608695652	0.0521739130434783
"da"	"bh"	"cy"	"ck"
0.0608695652173913	0.0695652173913043	0.0782608695652174	0.0869565217391304
"cg"	"f"	"bt"	"ax"
0.0956521739130435	0.0956521739130435	0.104347826086957	0.11304347826087
"r"	"cn"	"bg"	"w"
0.11304347826087	0.121739130434783	0.147826086956522	0.165217391304348
"co"	"bs"	"n"	"bb"
0.173913043478261	0.173913043478261	0.191304347826087	0.2
"ag"	"bu"	"bk"	"bi"
0.208695652173913	0.226086956521739	0.234782608695652	0.234782608695652
"bw"	"am"	"b"	"o"
0.234782608695652	0.243478260869565	0.243478260869565	0.252173913043478
"aq"	"m"	"by"	"at"
0.278260869565217	0.278260869565217	0.28695652173913	0.295652173913043
"k"	"ai"	"l"	"al"
0.295652173913043	0.321739130434783	0.321739130434783	0.330434782608696
"az"	"c"	"af"	"ac"
0.347826086956522	0.347826086956522	0.382608695652174	0.391304347826087
"i"	"ae"	"z"	"bf"
0.408695652173913	0.417391304347826	0.4	0.391304347826087
"bc"	"q"	"h"	"v"
0.347826086956522	0.347826086956522	0.339130434782609	0.330434782608696
"aj"	"ab"	"d"	"e"
0.321739130434783	0.31304347826087	0.295652173913043	0.295652173913043
"ad"	"s"	"an"	"x"
0.278260869565217	0.278260869565217	0.269565217391304	0.252173913043478
"aw"	"ah"	"bd"	"p"
0.243478260869565	0.234782608695652	0.234782608695652	0.234782608695652
"y"	"br"	"ao"	"g"
0.226086956521739	0.208695652173913	0.208695652173913	0.2
"bn"	"ci"	"a"	"ay"
0.173913043478261	0.173913043478261	0.165217391304348	0.147826086956522
"cc"	"ar"	"bm"	"cd"
0.130434782608696	0.121739130434783	0.11304347826087	0.104347826086957
"u"	"bq"	"ap"	"bv"
0.104347826086957	0.0956521739130435	0.0869565217391304	0.0869565217391304
"be"	"bj"	"bo"	"av"
0.0782608695652174	0.0608695652173913	0.0608695652173913	0.0521739130434783
"au"	"dc"	"ce"	"ba"
0.0434782608695652	0.0434782608695652	0.0347826086956522	0.0260869565217391
"cj"	"j"	"cs"	"cw"
0.0260869565217391	0.0260869565217391	0.0173913043478261	0.0173913043478261
"cu"	"ak"	"df"	"cx"
0.0173913043478261	0.0173913043478261	0.0173913043478261	0.0173913043478261
"cq"	"cm"	"cf"	"bx"
0.0173913043478261	0.00869565217391304	0.00869565217391304	0.00869565217391304
"as"	"dj"	"dg"	"dd"
0.00869565217391304	0.00869565217391304	0.00869565217391304	
"ch"	"bl"	"t"	

```
sort_normal_qual2  sort_normal_qual2
```

Description

Sort qualitative modalities that have their frequency normally distributed from an unordered dataset, see examples. This function uses an another algorithm than `choose_normal_qual` which may be faster.

Usage

```
sort_normal_qual2(inpt_datf)
```

Arguments

`inpt_datf` is the input dataframe, containing the values in the first column and their frequency in the second

Examples

```
sample_val <- round(rnorm(n = 2000, mean = 12, sd = 2), 1)
sample_freq <- unique_total(sample_val)
sample_qual <- infinite_char_seq(n = length(sample_freq))
datf_test <- data.frame(sample_qual, sample_freq)
datf_test[, 2] <- datf_test[, 2] / sum(datf_test[, 2])

print(datf_test)
```

```
      sample_qual sample_freq
1             a 0.208695652
2             b 0.234782609
3             c 0.321739130
4             d 0.339130435
5             e 0.330434783
6             f 0.069565217
7             g 0.234782609
8             h 0.400000000
9             i 0.347826087
10            j 0.043478261
11            k 0.278260870
12            l 0.286956522
13            m 0.243478261
14            n 0.147826087
15            o 0.234782609
16            p 0.252173913
17            q 0.417391304
18            r 0.095652174
19            s 0.313043478
20            t 0.008695652
21            u 0.130434783
22            v 0.391304348
23            w 0.113043478
24            x 0.295652174
25            y 0.243478261
```


26	z	0.382608696
27	aa	0.008695652
28	ab	0.347826087
29	ac	0.330434783
30	ad	0.321739130
31	ae	0.347826087
32	af	0.321739130
33	ag	0.173913043
34	ah	0.278260870
35	ai	0.278260870
36	aj	0.347826087
37	ak	0.026086957
38	al	0.295652174
39	am	0.226086957
40	an	0.295652174
41	ao	0.234782609
42	ap	0.113043478
43	aq	0.234782609
44	ar	0.173913043
45	as	0.017391304
46	at	0.252173913
47	au	0.078260870
48	av	0.086956522
49	aw	0.278260870
50	ax	0.086956522
51	ay	0.200000000
52	az	0.295652174
53	ba	0.052173913
54	bb	0.165217391
55	bc	0.408695652
56	bd	0.269565217
57	be	0.104347826
58	bf	0.391304348
59	bg	0.104347826
60	bh	0.043478261
61	bi	0.200000000
62	bj	0.095652174
63	bk	0.191304348
64	bl	0.008695652
65	bm	0.165217391
66	bn	0.226086957
67	bo	0.086956522
68	bp	0.017391304
69	bq	0.121739130
70	br	0.234782609
71	bs	0.121739130
72	bt	0.078260870
73	bu	0.173913043
74	bv	0.104347826
75	bw	0.208695652
76	bx	0.017391304
77	by	0.243478261
78	bz	0.034782609
79	ca	0.017391304
80	cb	0.008695652
81	cc	0.173913043
82	cd	0.147826087

```

83      ce 0.060869565
84      cf 0.017391304
85      cg 0.060869565
86      ch 0.008695652
87      ci 0.208695652
88      cj 0.043478261
89      ck 0.052173913
90      cl 0.017391304
91      cm 0.017391304
92      cn 0.095652174
93      co 0.113043478
94      cp 0.017391304
95      cq 0.017391304
96      cr 0.026086957
97      cs 0.034782609
98      ct 0.017391304
99      cu 0.026086957
100     cv 0.026086957
101     cw 0.026086957
102     cx 0.017391304
103     cy 0.043478261
104     cz 0.008695652
105     da 0.034782609
106     db 0.017391304
107     dc 0.060869565
108     dd 0.008695652
109     de 0.008695652
110     df 0.017391304
111     dg 0.008695652
112     dh 0.008695652
113     di 0.017391304
114     dj 0.008695652
115     dk 0.008695652

```

```
print(sort_normal_qual2(inpt_datf = datf_test))
```

```

0.00869565217391304 0.00869565217391304 0.00869565217391304 0.00869565217391304
      "aa"          "cb"          "cz"          "de"
0.00869565217391304 0.00869565217391304 0.0173913043478261 0.0173913043478261
      "dh"          "dk"          "bp"          "ca"
0.0173913043478261 0.0173913043478261 0.0173913043478261 0.0173913043478261
      "cl"          "cp"          "ct"          "db"
0.0173913043478261 0.0260869565217391 0.0260869565217391 0.0347826086956522
      "di"          "cr"          "cv"          "bz"
0.0347826086956522 0.0434782608695652 0.0434782608695652 0.0521739130434783
      "da"          "bh"          "cy"          "ck"
0.0608695652173913 0.0695652173913043 0.0782608695652174 0.0869565217391304
      "cg"          "f"          "bt"          "ax"
0.0956521739130435 0.0956521739130435 0.104347826086957 0.11304347826087
      "r"          "cn"          "bg"          "w"
0.11304347826087 0.121739130434783 0.147826086956522 0.165217391304348
      "co"          "bs"          "n"          "bb"
0.173913043478261 0.173913043478261 0.191304347826087 0.2
      "ag"          "bu"          "bk"          "bi"
0.208695652173913 0.226086956521739 0.234782608695652 0.234782608695652
      "bw"          "am"          "b"          "o"
0.234782608695652 0.243478260869565 0.243478260869565 0.252173913043478

```

"aq"	"m"	"by"	"at"
0.278260869565217	0.278260869565217	0.28695652173913	0.295652173913043
"k"	"ai"	"l"	"al"
0.295652173913043	0.321739130434783	0.321739130434783	0.330434782608696
"az"	"c"	"af"	"ac"
0.347826086956522	0.347826086956522	0.382608695652174	0.391304347826087
"i"	"ae"	"z"	"bf"
0.408695652173913	0.417391304347826	0.4	0.391304347826087
"bc"	"q"	"h"	"v"
0.347826086956522	0.347826086956522	0.339130434782609	0.330434782608696
"aj"	"ab"	"d"	"e"
0.321739130434783	0.31304347826087	0.295652173913043	0.295652173913043
"ad"	"s"	"an"	"x"
0.278260869565217	0.278260869565217	0.269565217391304	0.252173913043478
"aw"	"ah"	"bd"	"p"
0.243478260869565	0.234782608695652	0.234782608695652	0.234782608695652
"y"	"br"	"ao"	"g"
0.226086956521739	0.208695652173913	0.208695652173913	0.2
"bn"	"ci"	"a"	"ay"
0.173913043478261	0.173913043478261	0.165217391304348	0.147826086956522
"cc"	"ar"	"bm"	"cd"
0.130434782608696	0.121739130434783	0.11304347826087	0.104347826086957
"u"	"bq"	"ap"	"bv"
0.104347826086957	0.0956521739130435	0.0869565217391304	0.0869565217391304
"be"	"bj"	"bo"	"av"
0.0782608695652174	0.0608695652173913	0.0608695652173913	0.0521739130434783
"au"	"dc"	"ce"	"ba"
0.0434782608695652	0.0434782608695652	0.0347826086956522	0.0260869565217391
"cj"	"j"	"cs"	"cw"
0.0260869565217391	0.0260869565217391	0.0173913043478261	0.0173913043478261
"cu"	"ak"	"df"	"cx"
0.0173913043478261	0.0173913043478261	0.0173913043478261	0.0173913043478261
"cq"	"cm"	"cf"	"bx"
0.0173913043478261	0.00869565217391304	0.00869565217391304	0.00869565217391304
"as"	"dj"	"dg"	"dd"
0.00869565217391304	0.00869565217391304	0.00869565217391304	
"ch"	"bl"	"t"	

split_by_step

*split_by_step***Description**

Allow to split a string or a vector of strings by a step, see examples.

Usage

```
split_by_step(inpt_v, by)
```

Arguments

inpt_v	is the input character or vector of characters
by	is the step

Examples

```
print(split_by_step(inpt_v = c("o", "u", "i", "n", "o", "o", "u", "i", "o", "Z"), by = 2)

[1] "ou" "in" "oo" "ui" "oZ"

print(split_by_step(inpt_v = c("o", "u", "i", "n", "o", "o", "u", "i", "o", "Z"), by = 3)

[1] "oui" "noo" "uio" "Z"

print(split_by_step(inpt_v = c("o", "u", "i", "n", "o", "o", "u", "i", "o", "Z"), by = 4)

[1] "ouin" "ooui" "oZ"

print(split_by_step(inpt_v = 'ouinoouioz', by = 4))

[1] "ouin" "ooui" "oZ"
```

str_remove_untl	<i>str_remove_untl</i>
-----------------	------------------------

Description

Allow to remove pattern within elements from a vector precisely according to their occurrence.

Usage

```
str_remove_untl(
  inpt_v,
  ptrn_rm_v = c(),
  untl = list(c(1)),
  nvr_following_ptrn = "NA"
)
```

Arguments

inpt_v	is the input vector
ptrn_rm_v	is a vector containing the patterns to remove
until	is a list containing the occurrence(s) of each pattern to remove in the elements.
nvr_following_ptrn	is a sequel of characters that you are sure is not present in any of the elements in inpt_v

Examples

```
vec <- c("45/56-/98mm", "45/56-/98mm", "45/56-/98-mm//")

print(str_remove_untl(inpt_v=vec, ptrn_rm_v=c("-", "/"), until=list(c("max"), c(1))))

#[1] "4556/98mm" "4556/98mm" "4556/98mm//"

print(str_remove_untl(inpt_v=vec, ptrn_rm_v=c("-", "/"), until=list(c("max"), c(1:2))))
```

```
#[1] "455698mm"      "455698mm"      "455698mm/"

print(str_remove_until(inpt_v=vec[1], ptrn_rm_v=c("-", "/"), until=c("max")))

#[1] "455698mm" "455698mm" "455698mm"
```

sub_mult

sub_mult

Description

Performs a sub operation with n patterns and replacements.

Usage

```
sub_mult(inpt_v, pattern_v = c(), replacement_v = c())
```

Arguments

`inpt_v` is a vector containing all the elements that contains expressions to be substituted

`pattern_v` is a vector containing all the patterns to be substituted in any elements of `inpt_v`

`replacement_v` is a vector containing the expression that are going to substitute those provided by `pattern_v`

Examples

```
print(sub_mult(inpt_v = c("X and Y programming languages are great", "More X, more X!"),
               pattern_v = c("X", "Y", "Z"),
               replacement_v = c("C", "R", "GO")))

[1] "C and R programming languages are great"
[2] "More C, more X!"
```

successive_diff

successive_diff

Description

Allow to see the difference between the successive elements of an numeric vector

Usage

```
successive_diff(inpt_v)
```

Arguments

`inpt_v` is the input numeric vector

Examples

```
print(successive_diff(c(1:10)))

[1] 1 1 1 1 1

print(successive_diff(c(1:11, 13, 19)))

[1] 1 1 1 1 1 2 6
```

sum_group1	<i>sum_group1</i>
------------	-------------------

Description

Allow to aggregate variables according to groups, do not visually group the individual unlike sum_group2, see examples

Usage

```
sum_group1(inpt_datf, col_grp = c(), col_to_add = c())
```

Arguments

- inpt_datf is the input dataframe
- col_grp is a vector containing the column names or the column numbers of the groups
- col_to_add is a vector containing the column names or the column numbers of the variables to aggregate

Examples

```
set.seed(123)
datf <- data.frame("country" = c("France", "Germany", "France", "Italy", "Italy", "France"),
  "year" = c(2012, 2012, 2013, 2011, 2012, 2011),
  "comp_arm" = c("higher", "lower", "higher", "higher", "lower", "lower"),
  "pop" = runif(n = 6, min = 65000000, max = 69000000),
  "random_var" = round(x = runif(n = 6, min = 16, max = 78), digits = 0))

datf

  country year comp_arm      pop random_var
1 France 2012   higher 66150310          49
2 Germany 2012    lower 68153221          71
3 France 2013   higher 66635908          50
4 Italy 2011   higher 68532070          44
5 Italy 2012    lower 68761869          75
6 France 2011    lower 65182226          44

print(sum_group1(inpt_datf = datf, col_grp = c("country", "year"), col_to_add = c("random_var"))

  country year comp_arm      pop random_var
1 France 2012   higher 66150310          49
2 Germany 2012    lower 68153221          71
3 France 2013   higher 66635908          50
```

```

4  Italy 2011 higher 68532070      44
5  Italy 2012 lower 68761869      75
6  France 2011 lower 65182226      44

```

```
print(sum_group1(inpt_datf = datf, col_grp = c("year"), col_to_add = c("random_var", "pop"))
```

```

country year comp_arm      pop random_var
1  France 2012 higher 203065400      195
2 Germany 2012 lower 203065400      195
3  France 2013 higher  66635908       50
4  Italy 2011 higher 133714296       88
5  Italy 2012 lower 203065400      195
6  France 2011 lower 133714296       88

```

```
print(sum_group1(inpt_datf = datf, col_grp = c("country"), col_to_add = c("random_var", "pop"))
```

```

country year comp_arm      pop random_var
1  France 2012 higher 197968444      143
2 Germany 2012 lower  68153221       71
3  France 2013 higher 197968444      143
4  Italy 2011 higher 137293939      119
5  Italy 2012 lower 137293939      119
6  France 2011 lower 197968444      143

```

```
set.seed(123)
```

```
pop_v <- runif(n = 6, min = 65000000, max = 69000000)
```

```
pop_v[c(1, 3)] <- NA
```

```
set.seed(123)
```

```

datf <- data.frame("country" = c("France", "Germany", "France", "Italy", "Italy", "France"),
                  "year" = c(2012, 2012, 2013, 2011, 2012, 2011),
                  "comp_arm" = c("higher", "lower", "higher", "higher", "lower", "lower"),
                  "pop" = pop_v,
                  "random_var" = round(x = runif(n = 6, min = 16, max = 78), digits = 0))

```

```
datf
```

```

country year comp_arm      pop random_var
1  France 2012 higher      NA       34
2 Germany 2012 lower 68153221       65
3  France 2013 higher      NA       41
4  Italy 2011 higher 68532070       71
5  Italy 2012 lower 68761869       74
6  France 2011 lower 65182226       19

```

```
print(sum_group1(inpt_datf = datf, col_grp = c("year"), col_to_add = c("random_var", "pop"))
```

```

country year comp_arm      pop random_var
1  France 2012 higher 136915090      173
2 Germany 2012 lower 136915090      173
3  France 2013 higher      NA       41
4  Italy 2011 higher 133714296       90
5  Italy 2012 lower 136915090      173
6  France 2011 lower 133714296       90

```

Description

Allow to aggregate variables according to groups, see examples

Usage

```
sum_group2(inpt_datf, col_grp = c(), col_to_add = c())
```

Arguments

`inpt_datf` is the input dataframe
`col_grp` is a vector containing the column names or the column numbers of the groups
`col_to_add` is a vector containing the column names or the column numbers of the variables to aggregate

Examples

```
set.seed(123)
datf <- data.frame("country" = c("France", "Germany", "France", "Italy", "Italy", "France"),
  "year" = c(2012, 2012, 2013, 2011, 2012, 2011),
  "comp_arm" = c("higher", "lower", "higher", "higher", "lower", "lower"),
  "pop" = runif(n = 6, min = 65000000, max = 69000000),
  "random_var" = round(x = runif(n = 6, min = 16, max = 78), digits = 0))
datf
```

	country	year	comp_arm	pop	random_var
1	France	2012	higher	66150310	49
2	Germany	2012	lower	68153221	71
3	France	2013	higher	66635908	50
4	Italy	2011	higher	68532070	44
5	Italy	2012	lower	68761869	75
6	France	2011	lower	65182226	44

```
print(sum_group2(inpt_datf = datf, col_grp = c("country"), col_to_add = c("random_var", "pop"))
```

	country	year	comp_arm	pop	random_var
1	France	2012	higher	197968444	143
3	France	2013	higher	197968444	143
6	France	2011	lower	197968444	143
2	Germany	2012	lower	68153221	71
4	Italy	2011	higher	137293939	119
5	Italy	2012	lower	137293939	119

```
print(sum_group2(inpt_datf = datf, col_grp = c("year"), col_to_add = c("random_var", "pop"))
```

	country	year	comp_arm	pop	random_var
1	France	2012	higher	203065400	195
2	Germany	2012	lower	203065400	195
5	Italy	2012	lower	203065400	195
3	France	2013	higher	66635908	50
4	Italy	2011	higher	133714296	88
6	France	2011	lower	133714296	88

```
print(sum_group2(inpt_datf = datf, col_grp = c("country", "year"), col_to_add = c("random_var", "pop"))
```

	country	year	comp_arm	pop	random_var
--	---------	------	----------	-----	------------


```

1 France 2012 higher 66150310 49
2 Germany 2012 lower 68153221 71
3 France 2013 higher 66635908 50
4 Italy 2011 higher 68532070 44
5 Italy 2012 lower 68761869 75
6 France 2011 lower 65182226 44

set.seed(123)
pop_v <- runif(n = 6, min = 65000000, max = 69000000)
pop_v[c(1, 3)] <- NA
set.seed(123)
datf <- data.frame("country" = c("France", "Germany", "France", "Italy", "Italy", "France"),
  "year" = c(2012, 2012, 2013, 2011, 2012, 2011),
  "comp_arm" = c("higher", "lower", "higher", "higher", "lower", "lower"),
  "pop" = pop_v,
  "random_var" = round(x = runif(n = 6, min = 16, max = 78), digits = 0))

datf
  country year comp_arm      pop random_var
1 France 2012 higher      NA          34
2 Germany 2012 lower 68153221          65
3 France 2013 higher      NA          41
4 Italy 2011 higher 68532070          71
5 Italy 2012 lower 68761869          74
6 France 2011 lower 65182226          19

print(sum_group2(inpt_datf = datf, col_grp = c("year"), col_to_add = c("random_var", "pop"))

  country year comp_arm      pop random_var
1 France 2012 higher 136915090        173
2 Germany 2012 lower 136915090        173
5 Italy 2012 lower 136915090        173
3 France 2013 higher      NA          41
4 Italy 2011 higher 133714296          90
6 France 2011 lower 133714296          90

```

swipr

*swipr***Description**

Returns an ordered dataframes according to the elements order given. The input dataframe has two columns, one with the ids which can be bonded to multiple elements in the other column.

Usage

```
swipr(inpt_datf, how_to = c(), id_w = 2, id_ids = 1)
```

Arguments

<code>inpt_datf</code>	is the input dataframe
<code>how_to</code>	is a vector containing the elements in the order wanted
<code>id_w</code>	is the column number or the column name of the elements
<code>id_ids</code>	is the column number or the column name of the ids

Examples

```
datf <- data.frame("col1"=c("Af", "Al", "Al", "Al", "Arg", "Arg", "Arg", "Arm", "Arm", "A  

                    "col2"=c("B", "B", "G", "S", "B", "S", "G", "B", "G", "B"))

print(swipr(inpt_datf=datf, how_to=c("G", "S", "B")))
```

	col1	col2
1	Af	B
2	Al	G
3	Al	S
4	Al	B
5	Arg	G
6	Arg	S
7	Arg	B
8	Arm	G
9	Arm	B
10	Al	B

test_order	<i>test_order</i>
------------	-------------------

Description

Allow to get if two vectors have their commun elements in the same order, see examples

Usage

```
test_order(inpt_v_from, inpt_v_test)
```

Arguments

`is` the vector we want to test if its commun element with `inpt_v_from` are in the same order

Examples

```
print(test_order(inpt_v_from = c(1:8), inpt_v_test = c(1, 4)))

[1] TRUE

print(test_order(inpt_v_from = c(1:8), inpt_v_test = c(1, 4, 2)))

[1] FALSE
```

to_unique

*to_unique***Description**

Allow to transform a vector containing elements that have more than 1 occurrence to a vector with only unique elements.

Usage

```
to_unique(inpt_v, distinct_type = "suffix", distinct_val = "number", sep = "-")
```

Arguments

`inpt_v` is the input vectors

`distinct_type` takes two values: suffix or prefix

`distinct_val` takes two values: number (unique sequence of number to differentiate each value) or letter (unique sequence of letters to differentiate each value)

Examples

```
print(to_unique(inpt_v = c("a", "a", "e", "a", "i", "i"),
  distinct_type = "suffix",
  distinct_val = "number",
  sep = "-"))
```

```
[1] "a-1" "a-2" "e"   "a-3" "i-1" "i-2"
```

```
print(to_unique(inpt_v = c("a", "a", "e", "a", "i", "i"),
  distinct_type = "suffix",
  distinct_val = "letter",
  sep = "-"))
```

```
[1] "a-a" "a-b" "e"   "a-c" "i-a" "i-b"
```

```
print(to_unique(inpt_v = c("a", "a", "e", "a", "i", "i"),
  distinct_type = "prefix",
  distinct_val = "number",
  sep = "/"))
```

```
[1] "1/a" "2/a" "e"   "3/a" "1/i" "2/i"
```

```
print(to_unique(inpt_v = c("a", "a", "e", "a", "i", "i"),
  distinct_type = "prefix",
  distinct_val = "letter",
  sep = "_"))
```

```
[1] "a_a" "b_a" "e"   "c_a" "a_i" "b_i"
```

union_all

union_all

Description

Allow to perform a union function to n vectors.

Usage

```
union_all(...)
```

Arguments

... are all the input vectors

Examples

```
print(union_all(c(1, 2), c(3, 4), c(1:8)))
[1] 1 2 3 4 5 6 7 8

print(union_all(c(1, 2), c(3, 4), c(7:8)))
[1] 1 2 3 4 7 8
```

union_keep

union_keep

Description

Performs a union operation keeping the number of elements of all input vectors, see examples

Usage

```
union_keep(...)
```

Arguments

... are all the input vectors

Examples

```
print(union_keep(c("a", "ee", "ee"), c("p", "p", "a", "i"), c("a", "a", "z")))
[1] "a" "ee" "ee" "p" "p" "i" "z"

print(union_keep(c("a", "ee", "ee"), c("p", "p", "a", "i")))
[1] "a" "ee" "ee" "p" "p" "i"
```

unique_datf	<i>unique_datf</i>
-------------	--------------------

Description

Returns the input dataframe with the unique columns or rows.

Usage

```
unique_datf(inpt_datf, col = FALSE)
```

Arguments

inpt_datf	is the input dataframe
col	is a parameter that specifies if the dataframe returned should have unique columns or rows, defaults to F, so the dataframe returned by default has unique rows

Examples

```
datf1 <- data.frame(c(1, 2, 1, 3), c("a", "z", "a", "p"))

print(datf1)

  c.1..2..1..3. c..a....z....a....p.. c.1..2..1..3..1
1             1             a             1
2             2             z             2
3             1             a             1
4             3             p             3

print(unique_datf(inpt_datf=datf1))

#   c.1..2..1..3. c..a....z....a....p..
#1             1             a
#2             2             z
#4             3             p

datf1 <- data.frame(c(1, 2, 1, 3), c("a", "z", "a", "p"), c(1, 2, 1, 3))

print(datf1)

  c.1..2..1..3. c..a....z....a....p..
1             1             a
2             2             z
3             1             a
4             3             p

print(unique_datf(inpt_datf=datf1, col=TRUE))

#   cur_v cur_v
#1      1     a
#2      2     z
#3      1     a
#4      3     p
```

<code>unique_ltr_from_v</code>	<code>unique_ltr_from_v</code>
--------------------------------	--------------------------------

Description

Returns the unique characters contained in all the elements from an input vector "inpt_v"

Usage

```
unique_ltr_from_v(inpt_v, keep_v = c("?", "!", ":", "&", ",", ".", letters))
```

Arguments

- `inpt_v` is the input vector containing all the elements
- `keep_v` is the vector containing all the characters that the elements in `inpt_v` may contain

Examples

```
print(unique_ltr_from_v(inpt_v=c("bonjour", "lpoerc", "nonnour", "bonnour", "nonjour", "a  
# [1] "b" "o" "n" "j" "u" "r" "l" "p" "e" "c" "a" "v" "i"
```

<code>unique_pos</code>	<code>unique_pos</code>
-------------------------	-------------------------

Description

Allow to find the first index of the unique values from a vector.

Usage

```
unique_pos(vec)
```

Arguments

- `vec` is the input vector

Examples

```
print(unique_pos(vec=c(3, 4, 3, 5, 6)))  
# [1] 1 2 4 5
```

unique_total	<i>unique_total</i>
--------------	---------------------

Description

Returns a vector with the total amount of occurrences for each element in the input vector. The occurrences of each element follow the same order as the unique function does, see examples

Usage

```
unique_total(inpt_v = c())
```

Arguments

`inpt_v` is the input vector containing all the elements

Examples

```
print(unique_total(inpt_v = c(1:12, 1)))

[1] 2 1 1 1 1 1 1 1 1 1 1 1

print(unique_total(inpt_v = c(1:12, 1, 11, 11)))

[1] 2 1 1 1 1 1 1 1 1 1 3 1

vec <- c(1:12, 1, 11, 11)
names(vec) <- c(1:15)
print(unique_total(inpt_v = vec))

 1  2  3  4  5  6  7  8  9 10 11 12
2  1  1  1  1  1  1  1  1  1  3  1
```

until_stnl	<i>until_stnl</i>
------------	-------------------

Description

Maxes a vector to a chosen length. ex: if i want my vector `c(1, 2)` to be 5 of length this function will return me: `c(1, 2, 1, 2, 1)`

Usage

```
until_stnl(vec1, goal)
```

Arguments

`vec1` is the input vector
`goal` is the length to reach

Examples

```
print(until_stnl(vec1=c(1, 3, 2), goal=56))

# [1] 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3
#[39] 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3
```

val_replacer	<i>val_replacer</i>
--------------	---------------------

Description

Allow to replace value from dataframe to another one.

Usage

```
val_replacer(datf, val_replaced, val_replacor = TRUE)
```

Arguments

- datf is the input dataframe
- val_replaced is a vector of the value(s) to be replaced
- val_replacor is the value that will replace val_replaced

Examples

```
print(val_replacer(datf=data.frame(c(1, "oo4", TRUE, FALSE), c(TRUE, FALSE, TRUE, TRUE)),
  val_replaced=c(TRUE), val_replacor="NA"))

# c.1...oo4...T..F. c.T..F..T..T.
#1 1 NA
#2 oo4 FALSE
#3 NA NA
#4 FALSE NA
```

vector_replacor	<i>vector_replacor</i>
-----------------	------------------------

Description

Allow to replace certain values in a vector.

Usage

```
vector_replacor(inpt_v = c(), sus_val = c(), rpl_val = c(), grep_ = FALSE)
```


Arguments

<code>inpt_v</code>	is the input vector
<code>sus_val</code>	is a vector containing all the values that will be replaced
<code>rpl_val</code>	is a vector containing the value of the elements to be replaced (<code>sus_val</code>), so <code>sus_val</code> and <code>rpl_val</code> should be the same size
<code>grep_</code>	is if the elements in <code>sus_val</code> should be equal to the elements to replace in <code>inpt_v</code> or if they just should found in the elements

Examples

```
print(vector_replacor(inpt_v=c(1:15), sus_val=c(3, 6, 8, 12),
  rpl_val=c("oui", "non", "e", "a")))

# [1] "1" "2" "oui" "4" "5" "non" "7" "e" "9" "10" "11" "a"
# [13] "13" "14" "15"

print(vector_replacor(inpt_v=c("non", "zez", "pp a ftf", "fdatfd", "assistance",
  "ert", "repas", "repos"),
  sus_val=c("pp", "as", "re"), rpl_val=c("oui", "non", "zz"), grep_=TRUE))

# [1] "non" "zez" "oui" "fdatfd" "non" "ert" "non" "zz"
```

<code>vec_in_datf</code>	<i><code>vec_in_datf</code></i>
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Description

Allow to get if a vector is in a dataframe. Returns the row and column of the vector in the dataframe if the vector is contained in the dataframe.

Usage

```
vec_in_datf(
  inpt_datf,
  inpt_vec = c(),
  coeff = 0,
  stop_untl = 1,
  conventional = FALSE
)
```

Arguments

<code>inpt_datf</code>	is the input dataframe
<code>inpt_vec</code>	is the vector that may be in the input dataframe
<code>coeff</code>	is the "slope coefficient" of <code>inpt_vec</code>
<code>stop_untl</code>	is the maximum number of the input vector the function returns, if in the dataframe
<code>conventional</code>	is if a positive slope coefficient means that the vector goes upward or downward

Examples

```
datf1 <- data.frame(c(1:5), c(5:1), c("a", "z", "z", "z", "a"))

print(datf1)

#  c.1.5. c.5.1. c..a....z....z....z....a..
#1      1      5                      a
#2      2      4                      z
#3      3      3                      z
#4      4      2                      z
#5      5      1                      a

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(5, 4, "z"), coeff=1))

#NULL

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(5, 2, "z"), coeff=1))

#[1] 5 1

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(3, "z"), coeff=1))

#[1] 3 2

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(4, "z"), coeff=-1))

#[1] 2 2

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(2, 3, "z"), coeff=-1))

#[1] 2 1

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(5, 2, "z"), coeff=-1, conventional=TRUE))

#[1] 5 1

datf1[4, 2] <- 1

print(vec_in_datf(inpt_datf=datf1, inpt_vec=c(1, "z"), coeff=-1, conventional=TRUE, stop_

#[1] 4 2 5 2
```

vlookup_datf	<i>vlookup_datf</i>
--------------	---------------------

Description

Allow to perform a vlookup on a dataframe

Usage

```
vlookup_datf(datf, v_id, col_id = 1, included_col_id = "yes")
```

Arguments

- datf is the input dataframe
- v_id is a vector containing the ids
- col_id is the column that contains the ids (default is equal to 1)
- included_col_id is if the result should return the col_id (default set to yes)

Examples

```
datf1 <- data.frame(c("az1", "az3", "az4", "az2"), c(1:4), c(4:1))

print(vlookup_datf(datf=datf1, v_id=c("az1", "az2", "az3", "az4")))
```

#	c..az1....az3....az4....az2..	c.1.4.	c.4.1.
#2	az1	1	4
#4	az2	4	1
#21	az3	2	3
#3	az4	3	2

wider_datf	<i>wider_datf</i>
------------	-------------------

Description

Takes a dataframe as an input and the column to split according to a separator.

Usage

```
wider_datf(inpt_datf, col_to_splt = c(), sep_ = "-")
```

Arguments

- inpt_datf is the input dataframe
- col_to_splt is a vector containing the number or the colnames of the columns to split according to a separator
- sep_ is the separator of the elements to split to new columns in the input dataframe

Examples

```
datf1 <- data.frame(c(1:5), c("o-y", "hj-yy", "er-y", "k-ll", "ooo-mm"), c(5:1))

datf2 <- data.frame("col1"=c(1:5), "col2"=c("o-y", "hj-yy", "er-y", "k-ll", "ooo-mm"))

print(wider_datf(inpt_datf=datf1, col_to_splt=c(2), sep_="-"))
```

#	pre_datf	X.o.	X.y.
#o-y	1	"o"	"y" 5
#hj-yy	2	"hj"	"yy" 4
#er-y	3	"er"	"y" 3
#k-ll	4	"k"	"ll" 2

```
#ooo-mm 5      "ooo" "mm" 1

print(wider_datf(inpt_datf=datf2, col_to_splt=c("col2"), sep="-"))

#      pre_datf X.o.  X.y.
#o-y   1      "o"   "y"
#hj-yy 2      "hj"  "yy"
#er-y   3      "er"  "y"
#k-ll   4      "k"   "ll"
#ooo-mm 5      "ooo" "mm"
```

```
wide_to_narrow_idx wide_to_narrow_idx
```

Description

Allow to convert the indices of vector ('from_v_ids') which are related to each characters of a vector, to fit the newly established maximum character of the vector, see examples.

Usage

```
wide_to_narrow_idx(from_v_val = c(), from_v_ids = c(), val = 1)
```

Arguments

from_v_val	is the input vector of elements, or just the total number of characters of the elementsq in the vector
from_v_ids	is the input vector of indices
val	is the value - 1 from which the number of character of an element is too high, so the indices in 'from_v_ids' will be modified

Examples

```
print(wide_to_narrow_idx(from_v_val = c("oui", "no", "oui"), from_v_ids = c(4, 6, 9), val = 5))
[1] 2 4 5

print(wide_to_narrow_idx(from_v_val = c("oui", "no", "oui"), from_v_ids = c(4, 6, 9), val = 3))
[1] 2 2 3

print(wide_to_narrow_idx(from_v_val = c("oui", "no", "oui"), from_v_ids = c(4, 6, 9), val = 9))
[1] 4 6 9
```

write_edm_parser	<i>write_edm_parser</i>
------------------	-------------------------

Description

Allow to write data to edm parsed dataset, see examples

Usage

```
write_edm_parser(inpt, to_write_v, write_data)
```

Arguments

`inpt` is the input dataset
`to_write_v` is the vector containing the path to write the data, see examples

Examples

```
print(write_edm_parser("(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))",
  to_write_v = c("ok", "ee"), write_data = c("ii", "olm")))

[1] "(ok(ee:56)(ii:olm))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))"

print(write_edm_parser("(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))",
  to_write_v = c("ok", "oui"), write_data = c("ii", "olm")))

[1] "(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(ii:olm)(oui(bb(rr2:1)))(ee1:4))"

print(write_edm_parser("(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ee1:4))",
  to_write_v = c("ok", "oui", "oui"), write_data = c("ii", "olm")))

[1] "(ok(ee:56))(ok(oui(rr((rr2:6)(rr:5))))(oui(bb(rr2:1)))(ii:olm)(ee1:4))"

print(write_edm_parser("",
  to_write_v = c(), write_data = c("ii", "olm")))

[1] "(ii:olm)"
```

Index

all_stat, 5
any_join_datf, 6
appndr, 8
arroundr_mean, 9
arroundr_min, 10

better_match, 10
better_split, 11
better_split_any, 12
better_sub, 12
better_sub_mult, 13
better_unique, 14
bind_cols, 15
bind_rows, 16

can_be_num, 17
closer_ptrn, 17
closer_ptrn_adv, 20
clusterizer_v, 21
col_to_row, 24
colins_datf, 23
converter_date, 25
converter_format, 26
cost_and_taxes, 26
cumulated_rows, 27
cumulated_rows_na, 28
cut_v, 29
cutr_v, 29

data_gen, 30
data_meshup, 32
date_addr, 33
date_converter_reverse, 34
datf_appendr, 35
datf_appendr2, 35
datf_insertr, 36
datf_row_appendr, 37
datf_row_appendr2, 37
dcr_untl, 38
dcr_val, 39
depth_pairs_findr, 39
diff_datf, 40
dynamic_idx_convertr, 40

edm_arrangr, 41
edm_arrangr2, 42
edm_group_by1, 43
edm_group_by2, 44
edm_pivot_longer1, 45
edm_pivot_longer2, 47
edm_pivot_wider1, 49
edm_pivot_wider2, 51
elements_equalifier, 52
equalizer_v, 53
extract_normal, 54
extrt_only_v, 60

fillr, 60
fixer_nest_v, 61
fold_rec, 62
fold_rec2, 62
format_date, 63

geo_min, 63
get_rec, 64
globe, 64
glue_groupv, 65
grep_all, 66
grep_all2, 66
group_datf, 67
gsub_mult, 68

historic_sequence1, 69
historic_sequence2, 70
how_normal, 71
how_unif, 74

id_keepr, 75
incr_fillr, 76
infinite_char_seq, 77
inner_all, 77
insert_datf, 78
inter_max, 81
inter_min, 82
intersect_all, 79
intersect_mod, 79
is_divisible, 83
isnt_divisible, 83

join_n_lvl, 84

just_anything, 85
just_anything2, 85
just_anything3, 86
just_chr, 86
just_chr2, 87
just_chr3, 87
just_nb, 88
just_nb2, 88
just_nb3, 89
just_not_anything, 89
just_not_anything2, 90
just_not_anything3, 90

leap_yr, 91
left_all, 91
letter_to_nb, 92
list_files, 92
lst_flatnr, 93

match_by, 93
match_na_omit, 94
multitud, 94

nb2_follow, 95
nb_follow, 96
nb_to_letter, 96
nest_v, 99
nestr_datf1, 98
nestr_datf2, 99
new_ordered, 100
normal_dens, 101

occu, 101
old_to_new_idx, 102

pairs_findr, 102
pairs_findr_merger, 103
pairs_insertr, 104
pairs_insertr2, 106
paste_datf, 107
paste_datf2, 108
pattern_generator, 108
pattern_gettr, 109
pattern_tuning, 110
power_to_char, 111
pre_to_post_idx, 111
ptrn_switchr, 112
ptrn_twkr, 112

r_print, 118
read_edm_parser, 113
rearangr_v, 114
regex_spe_detect, 115
regroupr, 115

rm_na_rows, 116
rm_rows, 117
row_to_col, 118

save_untl, 119
see_datf, 120
see_diff, 121
see_diff_all, 122
see_file, 122
see_idx, 123
see_in_grep, 124
see_in_l, 125
see_inside, 124
see_mode, 126
selected_char, 126
sequence_na_mean1, 127
sequence_na_mean2, 128
sequence_na_med1, 129
sequence_na_med2, 130
sort_date, 131
sort_normal_qual, 132
sort_normal_qual2, 136
split_by_step, 139
str_remove_untl, 140
sub_mult, 141
successive_diff, 141
sum_group1, 142
sum_group2, 143
swipr, 145

test_order, 146
to_unique, 147

union_all, 148
union_keep, 148
unique_datf, 149
unique_ltr_from_v, 150
unique_pos, 150
unique_total, 151
until_stnl, 151

val_replacer, 152
vec_in_datf, 153
vector_replacor, 152
vlookup_datf, 154

wide_to_narrow_idx, 156
wider_datf, 155
write_edm_parser, 157