

Package ‘wlsd’

May 8, 2026

Type Package

Title Wrangling Longitudinal Survival Data

Version 1.0.1

Description Streamlines the process of transitioning between data formats commonly used in survival analysis. Functions convert longitudinal data between formats used as input for survival models as well as support overall preparation. Users are able to focus on model building rather than data wrangling.

URL <https://github.com/ci2131a/wlsd>

BugReports <https://github.com/ci2131a/wlsd/issues>

License GPL-3

Encoding UTF-8

LazyData true

Depends R (>= 3.5.0)

Imports stats

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

RoxygenNote 7.3.3

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

Date/Publication 2026-02-04 19:50:02 UTC

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| | |
|----------|----------------------------|
| basedate | <i>Create Baseline Row</i> |
|----------|----------------------------|

Description

Creates a new row of values for subjects representing baseline observations in a data set of follow-up observations.

Usage

```
basedate(data, id)
```

Arguments

| | |
|------|---|
| data | Data frame with relevant columns. |
| id | Character string of the identification column name in data. |

Details

Adds a new row for each level of the `id` column. Internal functions will try to determine any constant columns by checking for consistency within `id` groups in order to fill in some of the blanks.

Value

A data frame with added row for each level of `id`.

Examples

```
basedate(long_data, "id")
```

| | |
|------------|----------------------------------|
| count_data | <i>Count Format Data Example</i> |
|------------|----------------------------------|

Description

A toy data set in count format.

Usage

```
count_data
```

Format

A data frame with 3 rows on the following 5 variables.

id An identification variable

time Aggregate time variable

event Aggregated status indicator variable

var1 First example explanatory variable

var2 Second example explanatory variable

Examples

```
count_data
```

| | |
|---------|---|
| cp2long | <i>Counting Process Format to Long format</i> |
|---------|---|

Description

Transforms data from counting process format to the long format.

Usage

```
cp2long(data, id, time1, time2, status = NULL, fill = FALSE)
```

Arguments

data A data frame with relevant columns.

id A character string of the identification variable name in data.

time1 A character string of the first time point variable in data. Represents the left endpoint of the time interval.

time2 A character string of the second time point variable in data. Represents the right endpoint of the time interval.

| | |
|--------|---|
| status | A character string of the status column name in data to be treated as either an event or state. |
| fill | An optional argument that attempts to fill any NA values in the output for columns that might be constant within id levels. |

Details

The data transition consolidates information from the `time1` and `time2` argument into a single time column. All other columns are assumed to correspond to the `time2` point. Thus, the first row generally consists of NA values. The `fill` argument will attempt to discern any constant columns within `id` groups in order to populate that first row.

Value

A data frame in long format.

Examples

```
cp2long(data = cp_data, id = "id", time1 = "time1", time2 = "time2")
```

cp_data

Counting Process Data Example

Description

A toy data set in counting process format.

Usage

```
cp_data
```

Format

A data frame with 6 rows on the following 6 variables.

`id` An identification variable
`time1` Starting time of observation interval
`time2` Ending time of observation interval
`event` Status indicator variable
`var1` First example explanatory variable
`var2` Second example explanatory variable

Examples

```
cp_data
```

events2state *Multiple Event Variables to One State Variable*

Description

Converts one or more event columns within a data frame to a single state vector whose values represent combinations of events.

Usage

```
events2state(data, events, number = TRUE, drop = TRUE, ...)
```

Arguments

| | |
|--------|--|
| data | A data frame with relevant columns. |
| events | The names of the event variables as character strings in a vector. |
| number | A logical argument to determine whether the new state variable should be converted to a number representing the combination of events or left as is. Defaults to TRUE which will convert combinations a numeric. If argument is set to FALSE, the combinations will be left unchanged. |
| drop | Passed to <code>interaction</code> in order to determine whether unused factors will be excluded from the defining levels. The default is TRUE. |
| ... | Further arguments to be passed to <code>interaction</code> . |

Details

For a data frame with the necessary inputs, the function will aggregate values across columns supplied to `events` through the `interaction` function. The key for the different combination levels is printed to the console.

Value

Returns the input data frame with an added column called `state`.

Examples

```
events2state(data = long_data, events = c("event", "var2"))
```

LBP

*Low Back Pain Data Set***Description**

A long format data set from a longitudinal study of low back pain (LBP) on midwestern manufacturing workers.

Usage

LBP

Format

A data frame on the following variables:

| Variable | Description |
|-----------------|---|
| sid: | The subject identification variable for individuals. |
| Baseline.date: | The date of baseline visit or enrollment of individuals into the study. |
| Date: | The calendar time of follow-up visit. |
| time_to_row: | The number of days between the current follow-up visit and the baseline date. |
| case.lbp: | A status indicator for individuals possessing any LBP (0 for no and 1 for yes). |
| case.med: | A status indicator determining whether individuals are taking medication for LBP (0 for no and 1 for yes). |
| case.sc: | A status indicator to determine whether individuals are seeking care for LBP (0 for no and 1 for yes). |
| case.ls: | A status indicator to determine whether individuals have lost time from work due to LBP (0 for no and 1 for yes). |
| gender: | The gender of the individual (either M for Male or F for Female). |
| age: | The age of the individual at baseline visit in years. |
| weight: | The weight of individuals in lbs. |
| height: | The height of individuals in inches. |
| raceth: | A categorical variable to determine the race/ethnicity of individuals (0 = White; 1 = Hispanic/Latino). |
| smoking: | A smoking indicator variable (0 = Smoked less than 100 cigarettes in life; 1 = smoked in the past, but not currently). |
| comptenure: | A categorical variable to determine length of time at the current company (0 = less than 3 months; 1 = 3 to 6 months; 2 = 7 to 12 months; 3 = 13 to 24 months; 4 = 25 to 36 months; 5 = 37 to 48 months; 6 = 49 to 60 months; 7 = 61 to 72 months; 8 = 73 to 84 months; 9 = 85 to 96 months; 10 = 97 to 108 months; 11 = 109 to 120 months; 12 = 121 to 132 months; 13 = 133 to 144 months; 14 = 145 to 156 months; 15 = 157 to 168 months; 16 = 169 to 180 months; 17 = 181 to 192 months; 18 = 193 to 204 months; 19 = 205 to 216 months; 20 = 217 to 228 months; 21 = 229 to 240 months; 22 = 241 to 252 months; 23 = 253 to 264 months; 24 = 265 to 276 months; 25 = 277 to 288 months; 26 = 289 to 300 months; 27 = 301 to 312 months; 28 = 313 to 324 months; 29 = 325 to 336 months; 30 = 337 to 348 months; 31 = 349 to 360 months; 32 = 361 to 372 months; 33 = 373 to 384 months; 34 = 385 to 396 months; 35 = 397 to 408 months; 36 = 409 to 420 months; 37 = 421 to 432 months; 38 = 433 to 444 months; 39 = 445 to 456 months; 40 = 457 to 468 months; 41 = 469 to 480 months; 42 = 481 to 492 months; 43 = 493 to 504 months; 44 = 505 to 516 months; 45 = 517 to 528 months; 46 = 529 to 540 months; 47 = 541 to 552 months; 48 = 553 to 564 months; 49 = 565 to 576 months; 50 = 577 to 588 months; 51 = 589 to 600 months; 52 = 601 to 612 months; 53 = 613 to 624 months; 54 = 625 to 636 months; 55 = 637 to 648 months; 56 = 649 to 660 months; 57 = 661 to 672 months; 58 = 673 to 684 months; 59 = 685 to 696 months; 60 = 697 to 708 months; 61 = 709 to 720 months; 62 = 721 to 732 months; 63 = 733 to 744 months; 64 = 745 to 756 months; 65 = 757 to 768 months; 66 = 769 to 780 months; 67 = 781 to 792 months; 68 = 793 to 804 months; 69 = 805 to 816 months; 70 = 817 to 828 months; 71 = 829 to 840 months; 72 = 841 to 852 months; 73 = 853 to 864 months; 74 = 865 to 876 months; 75 = 877 to 888 months; 76 = 889 to 900 months; 77 = 901 to 912 months; 78 = 913 to 924 months; 79 = 925 to 936 months; 80 = 937 to 948 months; 81 = 949 to 960 months; 82 = 961 to 972 months; 83 = 973 to 984 months; 84 = 985 to 996 months; 85 = 997 to 1008 months; 86 = 1009 to 1020 months; 87 = 1021 to 1032 months; 88 = 1033 to 1044 months; 89 = 1045 to 1056 months; 90 = 1057 to 1068 months; 91 = 1069 to 1080 months; 92 = 1081 to 1092 months; 93 = 1093 to 1104 months; 94 = 1105 to 1116 months; 95 = 1117 to 1128 months; 96 = 1129 to 1140 months; 97 = 1141 to 1152 months; 98 = 1153 to 1164 months; 99 = 1165 to 1176 months; 100 = 1177 to 1188 months; 101 = 1189 to 1200 months; 102 = 1201 to 1212 months; 103 = 1213 to 1224 months; 104 = 1225 to 1236 months; 105 = 1237 to 1248 months; 106 = 1249 to 1260 months; 107 = 1261 to 1272 months; 108 = 1273 to 1284 months; 109 = 1285 to 1296 months; 110 = 1297 to 1308 months; 111 = 1309 to 1320 months; 112 = 1321 to 1332 months; 113 = 1333 to 1344 months; 114 = 1345 to 1356 months; 115 = 1357 to 1368 months; 116 = 1369 to 1380 months; 117 = 1381 to 1392 months; 118 = 1393 to 1404 months; 119 = 1405 to 1416 months; 120 = 1417 to 1428 months; 121 = 1429 to 1440 months; 122 = 1441 to 1452 months; 123 = 1453 to 1464 months; 124 = 1465 to 1476 months; 125 = 1477 to 1488 months; 126 = 1489 to 1500 months; 127 = 1501 to 1512 months; 128 = 1513 to 1524 months; 129 = 1525 to 1536 months; 130 = 1537 to 1548 months; 131 = 1549 to 1560 months; 132 = 1561 to 1572 months; 133 = 1573 to 1584 months; 134 = 1585 to 1596 months; 135 = 1597 to 1608 months; 136 = 1609 to 1620 months; 137 = 1621 to 1632 months; 138 = 1633 to 1644 months; 139 = 1645 to 1656 months; 140 = 1657 to 1668 months; 141 = 1669 to 1680 months; 142 = 1681 to 1692 months; 143 = 1693 to 1704 months; 144 = 1705 to 1716 months; 145 = 1717 to 1728 months; 146 = 1729 to 1740 months; 147 = 1741 to 1752 months; 148 = 1753 to 1764 months; 149 = 1765 to 1776 months; 150 = 1777 to 1788 months; 151 = 1789 to 1800 months; 152 = 1801 to 1812 months; 153 = 1813 to 1824 months; 154 = 1825 to 1836 months; 155 = 1837 to 1848 months; 156 = 1849 to 1860 months; 157 = 1861 to 1872 months; 158 = 1873 to 1884 months; 159 = 1885 to 1896 months; 160 = 1897 to 1908 months; 161 = 1909 to 1920 months; 162 = 1921 to 1932 months; 163 = 1933 to 1944 months; 164 = 1945 to 1956 months; 165 = 1957 to 1968 months; 166 = 1969 to 1980 months; 167 = 1981 to 1992 months; 168 = 1993 to 2004 months; 169 = 2005 to 2016 months; 170 = 2017 to 2028 months; 171 = 2029 to 2040 months; 172 = 2041 to 2052 months; 173 = 2053 to 2064 months; 174 = 2065 to 2076 months; 175 = 2077 to 2088 months; 176 = 2089 to 2100 months; 177 = 2101 to 2112 months; 178 = 2113 to 2124 months; 179 = 2125 to 2136 months; 180 = 2137 to 2148 months; 181 = 2149 to 2160 months; 182 = 2161 to 2172 months; 183 = 2173 to 2184 months; 184 = 2185 to 2196 months; 185 = 2197 to 2208 months; 186 = 2209 to 2220 months; 187 = 2221 to 2232 months; 188 = 2233 to 2244 months; 189 = 2245 to 2256 months; 190 = 2257 to 2268 months; 191 = 2269 to 2280 months; 192 = 2281 to 2292 months; 193 = 2293 to 2304 months; 194 = 2305 to 2316 months; 195 = 2317 to 2328 months; 196 = 2329 to 2340 months; 197 = 2341 to 2352 months; 198 = 2353 to 2364 months; 199 = 2365 to 2376 months; 200 = 2377 to 2388 months; 201 = 2389 to 2400 months; 202 = 2401 to 2412 months; 203 = 2413 to 2424 months; 204 = 2425 to 2436 months; 205 = 2437 to 2448 months; 206 = 2449 to 2460 months; 207 = 2461 to 2472 months; 208 = 2473 to 2484 months; 209 = 2485 to 2496 months; 210 = 2497 to 2508 months; 211 = 2509 to 2520 months; 212 = 2521 to 2532 months; 213 = 2533 to 2544 months; 214 = 2545 to 2556 months; 215 = 2557 to 2568 months; 216 = 2569 to 2580 months; 217 = 2581 to 2592 months; 218 = 2593 to 2604 months; 219 = 2605 to 2616 months; 220 = 2617 to 2628 months; 221 = 2629 to 2640 months; 222 = 2641 to 2652 months; 223 = 2653 to 2664 months; 224 = 2665 to 2676 months; 225 = 2677 to 2688 months; 226 = 2689 to 2700 months; 227 = 2701 to 2712 months; 228 = 2713 to 2724 months; 229 = 2725 to 2736 months; 230 = 2737 to 2748 months; 231 = 2749 to 2760 months; 232 = 2761 to 2772 months; 233 = 2773 to 2784 months; 234 = 2785 to 2796 months; 235 = 2797 to 2808 months; 236 = 2809 to 2820 months; 237 = 2821 to 2832 months; 238 = 2833 to 2844 months; 239 = 2845 to 2856 months; 240 = 2857 to 2868 months; 241 = 2869 to 2880 months; 242 = 2881 to 2892 months; 243 = 2893 to 2904 months; 244 = 2905 to 2916 months; 245 = 2917 to 2928 months; 246 = 2929 to 2940 months; 247 = 2941 to 2952 months; 248 = 2953 to 2964 months; 249 = 2965 to 2976 months; 250 = 2977 to 2988 months; 251 = 2989 to 3000 months; 252 = 3001 to 3012 months; 253 = 3013 to 3024 months; 254 = 3025 to 3036 months; 255 = 3037 to 3048 months; 256 = 3049 to 3060 months; 257 = 3061 to 3072 months; 258 = 3073 to 3084 months; 259 = 3085 to 3096 months; 260 = 3097 to 3108 months; 261 = 3109 to 3120 months; 262 = 3121 to 3132 months; 263 = 3133 to 3144 months; 264 = 3145 to 3156 months; 265 = 3157 to 3168 months; 266 = 3169 to 3180 months; 267 = 3181 to 3192 months; 268 = 3193 to 3204 months; 269 = 3205 to 3216 months; 270 = 3217 to 3228 months; 271 = 3229 to 3240 months; 272 = 3241 to 3252 months; 273 = 3253 to 3264 months; 274 = 3265 to 3276 months; 275 = 3277 to 3288 months; 276 = 3289 to 3300 months; 277 = 3301 to 3312 months; 278 = 3313 to 3324 months; 279 = 3325 to 3336 months; 280 = 3337 to 3348 months; 281 = 3349 to 3360 months; 282 = 3361 to 3372 months; 283 = 3373 to 3384 months; 284 = 3385 to 3396 months; 285 = 3397 to 3408 months; 286 = 3409 to 3420 months; 287 = 3421 to 3432 months; 288 = 3433 to 3444 months; 289 = 3445 to 3456 months; 290 = 3457 to 3468 months; 291 = 3469 to 3480 months; 292 = 3481 to 3492 months; 293 = 3493 to 3504 months; 294 = 3505 to 3516 months; 295 = 3517 to 3528 months; 296 = 3529 to 3540 months; 297 = 3541 to 3552 months; 298 = 3553 to 3564 months; 299 = 3565 to 3576 months; 300 = 3577 to 3588 months; 301 = 3589 to 3600 months; 302 = 3601 to 3612 months; 303 = 3613 to 3624 months; 304 = 3625 to 3636 months; 305 = 3637 to 3648 months; 306 = 3649 to 3660 months; 307 = 3661 to 3672 months; 308 = 3673 to 3684 months; 309 = 3685 to 3696 months; 310 = 3697 to 3708 months; 311 = 3709 to 3720 months; 312 = 3721 to 3732 months; 313 = 3733 to 3744 months; 314 = 3745 to 3756 months; 315 = 3757 to 3768 months; 316 = 3769 to 3780 months; 317 = 3781 to 3792 months; 318 = 3793 to 3804 months; 319 = 3805 to 3816 months; 320 = 3817 to 3828 months; 321 = 3829 to 3840 months; 322 = 3841 to 3852 months; 323 = 3853 to 3864 months; 324 = 3865 to 3876 months; 325 = 3877 to 3888 months; 326 = 3889 to 3900 months; 327 = 3901 to 3912 months; 328 = 3913 to 3924 months; 329 = 3925 to 3936 months; 330 = 3937 to 3948 months; 331 = 3949 to 3960 months; 332 = 3961 to 3972 months; 333 = 3973 to 3984 months; 334 = 3985 to 3996 months; 335 = 3997 to 4008 months; 336 = 4009 to 4020 months; 337 = 4021 to 4032 months; 338 = 4033 to 4044 months; 339 = 4045 to 4056 months; 340 = 4057 to 4068 months; 341 = 4069 to 4080 months; 342 = 4081 to 4092 months; 343 = 4093 to 4104 months; 344 = 4105 to 4116 months; 345 = 4117 to 4128 months; 346 = 4129 to 4140 months; 347 = 4141 to 4152 months; 348 = 4153 to 4164 months; 349 = 4165 to 4176 months; 350 = 4177 to 4188 months; 351 = 4189 to 4200 months; 352 = 4201 to 4212 months; 353 = 4213 to 4224 months; 354 = 4225 to 4236 months; 355 = 4237 to 4248 months; 356 = 4249 to 4260 months; 357 = 4261 to 4272 months; 358 = 4273 to 4284 months; 359 = 4285 to 4296 months; 360 = 4297 to 4308 months; 361 = 4309 to 4320 months; 362 = 4321 to 4332 months; 363 = 4333 to 4344 months; 364 = 4345 to 4356 months; 365 = 4357 to 4368 months; 366 = 4369 to 4380 months; 367 = 4381 to 4392 months; 368 = 4393 to 4404 months; 369 = 4405 to 4416 months; 370 = 4417 to 4428 months; 371 = 4429 to 4440 months; 372 = 4441 to 4452 months; 373 = 4453 to 4464 months; 374 = 4465 to 4476 months; 375 = 4477 to 4488 months; 376 = 4489 to 4500 months; 377 = 4501 to 4512 months; 378 = 4513 to 4524 months; 379 = 4525 to 4536 months; 380 = 4537 to 4548 months; 381 = 4549 to 4560 months; 382 = 4561 to 4572 months; 383 = 4573 to 4584 months; 384 = 4585 to 4596 months; 385 = 4597 to 4608 months; 386 = 4609 to 4620 months; 387 = 4621 to 4632 months; 388 = 4633 to 4644 months; 389 = 4645 to 4656 months; 390 = 4657 to 4668 months; 391 = 4669 to 4680 months; 392 = 4681 to 4692 months; 393 = 4693 to 4704 months; 394 = 4705 to 4716 months; 395 = 4717 to 4728 months; 396 = 4729 to 4740 months; 397 = 4741 to 4752 months; 398 = 4753 to 4764 months; 399 = 4765 to 4776 months; 400 = 4777 to 4788 months; 401 = 4789 to 4800 months; 402 = 4801 to 4812 months; 403 = 4813 to 4824 months; 404 = 4825 to 4836 months; 405 = 4837 to 4848 months; 406 = 4849 to 4860 months; 407 = 4861 to 4872 months; 408 = 4873 to 4884 months; 409 = 4885 to 4896 months; 410 = 4897 to 4908 months; 411 = 4909 to 4920 months; 412 = 4921 to 4932 months; 413 = 4933 to 4944 months; 414 = 4945 to 4956 months; 415 = 4957 to 4968 months; 416 = 4969 to 4980 months; 417 = 4981 to 4992 months; 418 = 4993 to 5004 months; 419 = 5005 to 5016 months; 420 = 5017 to 5028 months; 421 = 5029 to 5040 months; 422 = 5041 to 5052 months; 423 = 5053 to 5064 months; 424 = 5065 to 5076 months; 425 = 5077 to 5088 months; 426 = 5089 to 5100 months; 427 = 5101 to 5112 months; 428 = 5113 to 5124 months; 429 = 5125 to 5136 months; 430 = 5137 to 5148 months; 431 = 5149 to 5160 months; 432 = 5161 to 5172 months; 433 = 5173 to 5184 months; 434 = 5185 to 5196 months; 435 = 5197 to 5208 months; 436 = 5209 to 5220 months; 437 = 5221 to 5232 months; 438 = 5233 to 5244 months; 439 = 5245 to 5256 months; 440 = 5257 to 5268 months; 441 = 5269 to 5280 months; 442 = 5281 to 5292 months; 443 = 5293 to 5304 months; 444 = 5305 to 5316 months; 445 = 5317 to 5328 months; 446 = 5329 to 5340 months; 447 = 5341 to 5352 months; 448 = 5353 to 5364 months; 449 = 5365 to 5376 months; 450 = 5377 to 5388 months; 451 = 5389 to 5400 months; 452 = 5401 to 5412 months; 453 = 5413 to 5424 months; 454 = 5425 to 5436 months; 455 = 5437 to 5448 months; 456 = 5449 to 5460 months; 457 = 5461 to 5472 months; 458 = 5473 to 5484 months; 459 = 5485 to 5496 months; 460 = 5497 to 5508 months; 461 = 5509 to 5520 months; 462 = 5521 to 5532 months; 463 = 5533 to 5544 months; 464 = 5545 to 5556 months; 465 = 5557 to 5568 months; 466 = 5569 to 5580 months; 467 = 5581 to 5592 months; 468 = 5593 to 5604 months; 469 = 5605 to 5616 months; 470 = 5617 to 5628 months; 471 = 5629 to 5640 months; 472 = 5641 to 5652 months; 473 = 5653 to 5664 months; 474 = 5665 to 5676 months; 475 = 5677 to 5688 months; 476 = 5689 to 5700 months; 477 = 5701 to 5712 months; 478 = 5713 to 5724 months; 479 = 5725 to 5736 months; 480 = 5737 to 5748 months; 481 = 5749 to 5760 months; 482 = 5761 to 5772 months; 483 = 5773 to 5784 months; 484 = 5785 to 5796 months; 485 = 5797 to 5808 months; 486 = 5809 to 5820 months; 487 = 5821 to 5832 months; 488 = 5833 to 5844 months; 489 = 5845 to 5856 months; 490 = 5857 to 5868 months; 491 = 5869 to 5880 months; 492 = 5881 to 5892 months; 493 = 5893 to 5904 months; 494 = 5905 to 5916 months; 495 = 5917 to 5928 months; 496 = 5929 to 5940 months; 497 = 5941 to 5952 months; 498 = 5953 to 5964 months; 499 = 5965 to 5976 months; 500 = 5977 to 5988 months; 501 = 5989 to 6000 months; 502 = 6001 to 6012 months; 503 = 6013 to 6024 months; 504 = 6025 to 6036 months; 505 = 6037 to 6048 months; 506 = 6049 to 6060 months; 507 = 6061 to 6072 months; 508 = 6073 to 6084 months; 509 = 6085 to 6096 months; 510 = 6097 to 6108 months; 511 = 6109 to 6120 months; 512 = 6121 to 6132 months; 513 = 6133 to 6144 months; 514 = 6145 to 6156 months; 515 = 6157 to 6168 months; 516 = 6169 to 6180 months; 517 = 6181 to 6192 months; 518 = 6193 to 6204 months; 519 = 6205 to 6216 months; 520 = 6217 to 6228 months; 521 = 6229 to 6240 months; 522 = 6241 to 6252 months; 523 = 6253 to 6264 months; 524 = 6265 to 6276 months; 525 = 6277 to 6288 months; 526 = 6289 to 6300 months; 527 = 6301 to 6312 months; 528 = 6313 to 6324 months; 529 = 6325 to 6336 months; 530 = 6337 to 6348 months; 531 = 6349 to 6360 months; 532 = 6361 to 6372 months; 533 = 6373 to 6384 months; 534 = 6385 to 6396 months; 535 = 6397 to 6408 months; 536 = 6409 to 6420 months; 537 = 6421 to 6432 months; 538 = 6433 to 6444 months; 539 = 6445 to 6456 months; 540 = 6457 to 6468 months; 541 = 6469 to 6480 months; 542 = 6481 to 6492 months; 543 = 6493 to 6504 months; 544 = 6505 to 6516 months; 545 = 6517 to 6528 months; 546 = 6529 to 6540 months; 547 = 6541 to 6552 months; 548 = 6553 to 6564 months; 549 = 6565 to 6576 months; 550 = 6577 to 6588 months; 551 = 6589 to 6600 months; 552 = 6601 to 6612 months; 553 = 6613 to 6624 months; 554 = 6625 to 6636 months; 555 = 6637 to 6648 months; 556 = 6649 to 6660 months; 557 = 6661 to 6672 months; 558 = 6673 to 6684 months; 559 = 6685 to 6696 months; 560 = 6697 to 6708 months; 561 = 6709 to 6720 months; 562 = 6721 to 6732 months; 563 = 6733 to 6744 months; 564 = 6745 to 6756 months; 565 = 6757 to 6768 months; 566 = 6769 to 6780 months; 567 = 6781 to 6792 months; 568 = 6793 to 6804 months; 569 = 6805 to 6816 months; 570 = 6817 to 6828 months; 571 = 6829 to 6840 months; 572 = 6841 to 6852 months; 573 = 6853 to 6864 months; 574 = 6865 to 6876 months; 575 = 6877 to 6888 months; 576 = 6889 to 6900 months; 577 = 6901 to 6912 months; 578 = 6913 to 6924 months; 579 = 6925 to 6936 months; 580 = 6937 to 6948 months; 581 = 6949 to 6960 months; 582 = 6961 to 6972 months; 583 = 6973 to 6984 months; 584 = 6985 to 6996 months; 585 = 6997 to 7008 months; 586 = 7009 to 7020 months; 587 = 7021 to 7032 months; 588 = 7033 to 7044 months; 589 = 7045 to 7056 months; 590 = 7057 to 7068 months; 591 = 7069 to 7080 months; 592 = 7081 to 7092 months; 593 = 7093 to 7104 months; 594 = 7105 to 7116 months; 595 = 7117 to 7128 months; 596 = 7129 to 7140 months; 597 = 7141 to 7152 months; 598 = 7153 to 7164 months; 599 = 7165 to 7176 months; 600 = 7177 to 7188 months; 601 = 7189 to 7200 months; 602 = 7201 to 7212 months; 603 = 7213 to 7224 months; 604 = 7225 to 7236 months; 605 = 7237 to 7248 months; 606 = 7249 to 7260 months; 607 = 7261 to 7272 months; 608 = 7273 to 7284 months; 609 = 7285 to 7296 months; 610 = 7297 to 7308 months; 611 = 7309 to 7320 months; 612 = 7321 to 7332 months; 613 = 7333 to 7344 months; 614 = 7345 to 7356 months; 615 = 7357 to 7368 months; 616 = 7369 to 7380 months; 617 = 7381 to 7392 months; 618 = 7393 to 7404 months; 619 = 7405 to 7416 months; 620 = 7417 to 7428 months; 621 = 7429 to 7440 months; 622 = 7441 to 7452 months; 623 = 7453 to 7464 months; 624 = 7465 to 7476 months; 625 = 7477 to 7488 months; 626 = 7489 to 7500 months; 627 = 7501 to 7512 months; 628 = 7513 to 7524 months; 629 = 7525 to 7536 months; 630 = 7537 to 7548 months; 631 = 7549 to 7560 months; 632 = 7561 to 7572 months; 633 = 7573 to 7584 months; 634 = 7585 to 7596 months; 635 = 7597 to 7608 months; 636 = 7609 to 7620 months; 637 = 7621 to 7632 months; 638 = 7633 to 7644 months; 639 = 7645 to 7656 months; 640 = 7657 to 7668 months; 641 = 7669 to 7680 months; 642 = 7681 to 7692 months; 643 = 7693 to 7704 months; 644 = 7705 to 7716 months; 645 = 7717 to 7728 months; 646 = 7729 to 7740 months; 647 = 7741 to 7752 months; 648 = 7753 to 7764 months; 649 = 7765 to 7776 months; 650 = 7777 to 7788 months; |

time_to_row is constructed using the Baseline.date and Date columns to calculate the number of days between observations (denoted by rows). All other columns are constant with respect to time. Categorical variables were recorded through self-assessment on the part of the subject. The age and weight variables were able to be physically measured to then be used in calculation of bmi.

Source

LBP Research Consortium, University of Wisconsin-Milwaukee

References

Garg, Arun, Kurt Hegmann, J. Moore, Jay Kapellusch, Matthew Thiese, Sruthi Boda, Parag Bhoyar, Donald Bloswick, Andrew Merryweather, Richard Seseck, Gwen Deckow-Schaefer, James Foster, Eric Wood, Xiaoming Sheng, and Richard Holubkov (2013). Study protocol title: A prospective cohort study of low back pain. BMC Musculoskeletal Disorders 14(84), 84.

Ingulli, Charles. (2020). A Survey of Statistical Methods for Investigating Risk of Low Back Pain in a Cohort of Manufacturing Workers. (85696). [Master's Thesis, American University]

Examples

LBP

| | |
|------------|-------------------------------------|
| long2count | <i>Longitudinal to Count format</i> |
|------------|-------------------------------------|

Description

Aggregates longitudinal data into a count format data set.

Usage

```
long2count(data, id, event = NULL, state = NULL, FUN, ...)
```

Arguments

| | |
|-------|---|
| data | A data frame with relevant columns. |
| id | A character string of the identification variable name in data. |
| event | The name(s) of the event column(s) in data to be tallied. The name(s) is required to be supplied as a string. The elements of this argument are assumed to be numeric and are summed for each identification level from id. |
| state | The name of the state variable in data. This argument is used if the event of interest is a numeric or non-numeric series of states. Each of these levels will be tallied for each level of the id. |
| FUN | The summary function to be applied to all time-dependent columns (wrapper for argument in stats::aggregate). If nothing is supplied, then mean will be used. |
| ... | Additional arguments supplied to stats::aggregate. |

Details

The returned data frame aggregates any time-depended values based on row-wise changes within id groups. New columns include `event.counts` which represents the sum total of values in the event column for each level of id or the sum total of levels of the state column if supplied as well as the `count.weight` column which sums the number of rows for each level of id.

Value

A data frame aggregated into count format.

Examples

```
# if the "event" column should be summed
long2count(long_data, id = "id", event = "event")
# if the "event" column contains levels that should be summed separately
long2count(long_data, id = "id", state = "event")
```

long2cp

Long Format to Counting Process format

Description

Transforms data from long format to counting process format.

Usage

```
long2cp(data, id, time, status = NULL, drop = FALSE)
```

Arguments

| | |
|---------------------|---|
| <code>data</code> | A data frame with relevant columns. |
| <code>id</code> | A character string of the identification column name in data. |
| <code>time</code> | A character string of the time column name in data. |
| <code>status</code> | A character string of the status column in data either event or state. |
| <code>drop</code> | Logical indicator for whether any id groups with insufficient rows should be dropped from the output. Default is FALSE. |

Details

The transition is primarily done by shifting the column supplied to the `time` argument into two new columns for a column-wise time definition and adjusting rows accordingly. Column names supplied to the `status` argument are assumed to occur at the right endpoint so the first value for each id of the input is dropped. All other time-varying columns are assumed to occur at the left endpoint so the last value for each id of the input is dropped. The `drop` argument can be used for any id levels that may only have one row where a two column time data set might not suit them. Since there is not any useful gained from going from one time to the same time, it may be useful to just drop those id levels altogether.

Value

A data frame in counting process format.

Examples

```
long2cp(data = long_data, id = "id", time = "time", status = "event")
```

 long_data

Long Format Data Example

Description

A toy data set in long format data.

Usage

```
long_data
```

Format

A data frame with 9 rows on the following 5 variables.

id An identification variable

time Time of observation

event Status indicator variable

var1 First example explanatory variable

var2 Second example explanatory variable

Examples

```
long_data
```

 takefirst

Subset observations for grouped data based on first occurrence of a criteria value

Description

Takes all rows of a data frame up to and including the first occurrence of a supplied criteria for grouped data.

Usage

```
takefirst(data, id, criteria.column, criteria)
```

Arguments

| | |
|------------------------------|---|
| <code>data</code> | A data frame with relevant columns. |
| <code>id</code> | A character string of the identification vector name defining groups in data. |
| <code>criteria.column</code> | The name as a character string of the column in data where the criteria is located. |
| <code>criteria</code> | The value of the cutoff for subsetting. |

Details

Returns a data frame that takes all rows within the groups supplied by `id` up to and including the first occurrence of the value of `criteria` in `criteria.column`.

Value

A data frame subset up to and including the first row matching `criteria` in `criteria.column` for each level of `id`.

Examples

```
takefirst(long_data, "id", criteria.column = "var1", criteria = 10.4)
```

wide_data

Wide Format Data Example

Description

A toy data set in wide format.

Usage

```
wide_data
```

Format

A data frame with 3 rows on the following 14 variables.

`id` An identification variable
`time1` First time observation column
`time2` Second time observation column
`time3` Third time observation column
`time4` Fourth observation column
`event1` Status indicator at first time
`event2` Status indicator at second time
`event3` Status indicator at third time

event4 Status indicator at fourth time
var11 First explanatory variable at first time
var12 First explanatory variable at second time
var13 First explanatory variable at third time
var14 First explanatory variable at fourth time
var2 Second explanatory variable

Examples

wide_data

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