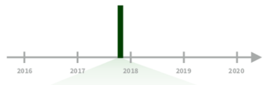
Dates and times with lubridate : : CHEAT SHEET

Date-times



2017-11-28 12:00:00

2017-11-28 12:00:00

A **date-time** is a point on the timeline, stored as the number of seconds since 1970-01-01 00:00:00 UTC

*dt <- **as_datetime**(1511870400)*
## "2017-11-28 12:00:00 UTC"

2017-11-28

A **date** is a day stored as the number of days since 1970-01-01

*d <- **as_date**(17498)*
## "2017-11-28"

12:00:00

An hms is a **time** stored as the number of seconds since 00:00:00

*t <- hms::**as.hms**(85)*
## 00:01:25

PARSE DATE-TIMES (Convert strings or numbers to date-times)

1. Identify the order of the year (**y**), month (**m**), day (**d**), hour (**h**), minute (**m**) and second (**s**) elements in your data.
2. Use the function below whose name replicates the order. Each accepts a wide variety of input formats.

2017-11-28T14:02:00	**ymd_hms**(), **ymd_hm**(), **ymd_h**(). *ymd_hms("2017-11-28T14:02:00")*
2017-22-12 10:00:00	**ydm_hms**(), **ydm_hm**(), **ydm_h**(). *ydm_hms("2017-22-12 10:00:00")*
11/28/2017 1:02:03	**mdy_hms**(), **mdy_hm**(), **mdy_h**(). *mdy_hms("11/28/2017 1:02:03")*
1 Jan 2017 23:59:59	**dmy_hms**(), **dmy_hm**(), **dmy_h**(). *dmy_hms("1 Jan 2017 23:59:59")*
20170131	**ymd**(), **ydm**(). *ymd(20170131)*
July 4th, 2000	**mdy**(), **myd**(). *mdy("July 4th, 2000")*
4th of July '99	**dmy**(), **dym**(). *dmy("4th of July '99")*
2001: Q3	**yq**() Q for quarter. *yq("2001: Q3")*
2:01	hms::**hms**() Also lubridate::**hms**(), **hm**() and **ms**(), which return periods.* *hms::hms(sec = 0, min= 1, hours = 2)*

2017.5 — **date_decimal**(decimal, tz = "UTC") *date_decimal(2017.5)*

now(tzone = "") Current time in tz (defaults to system tz). *now()*

today(tzone = "") Current date in a tz (defaults to system tz). *today()*

fast_strptime() Faster strptime. *fast_strptime('9/1/01', '%y/%m/%d')*

parse_date_time() Easier strptime. *parse_date_time("9/1/01", "ymd")*

GET AND SET COMPONENTS

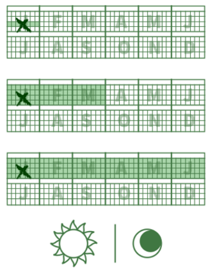
Use an accessor function to get a component.

d ## "2017-11-28"
day(d) ## 28

Assign into an accessor function to change a component in place.

day(d) <- 1
d ## "2017-11-01"

2018-01-31 11:59:59	**date**(x) Date component. *date(dt)*
2018-01-31 11:59:59	**year**(x) Year. *year(dt)* **isoyear**(x) The ISO 8601 year. **epiyear**(x) Epidemiological year.
2018-**01**-31 11:59:59	**month**(x, label, abbr) Month. *month(dt)*
2018-01-**31** 11:59:59	**day**(x) Day of month. *day(dt)* **wday**(x,label,abbr) Day of week. **qday**(x) Day of quarter.
2018-01-31 **11**:59:59	**hour**(x) Hour. *hour(dt)*
2018-01-31 11:**59**:59	**minute**(x) Minutes. *minute(dt)*
2018-01-31 11:59:**59**	**second**(x) Seconds. *second(dt)*



week(x) Week of the year. *week(dt)*
isoweek() ISO 8601 week.
epiweek() Epidemiological week.

quarter(x, with_year = FALSE) Quarter. *quarter(dt)*

semester(x, with_year = FALSE) Semester. *semester(dt)*

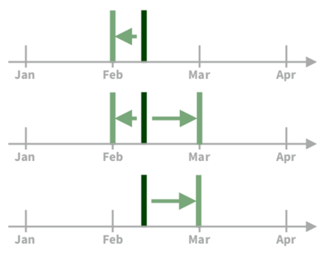
am(x) Is it in the am? *am(dt)*
pm(x) Is it in the pm? *pm(dt)*

dst(x) Is it daylight savings? *dst(d)*

leap_year(x) Is it a leap year? *leap_year(d)*

update(object, ..., simple = FALSE) *update(dt, mday = 2, hour = 1)*

Round Date-times



floor_date(x, unit = "second") Round down to nearest unit. *floor_date(dt, unit = "month")*

round_date(x, unit = "second") Round to nearest unit. *round_date(dt, unit = "month")*

ceiling_date(x, unit = "second", change_on_boundary = NULL) Round up to nearest unit. *ceiling_date(dt, unit = "month")*

rollback(dates, roll_to_first = FALSE, preserve_hms = TRUE) Roll back to last day of previous month. *rollback(dt)*

Stamp Date-times

stamp() Derive a template from an example string and return a new function that will apply the template to date-times. Also **stamp_date**() and **stamp_time**().

1. Derive a template, create a function
   sf <- stamp("Created Sunday, Jan 17, 1999 3:34")
2. Apply the template to dates
   sf(ymd("2010-04-05"))
   ## [1] "Created Monday, Apr 05, 2010 00:00"

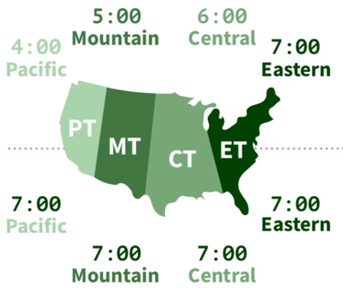
Tip: use a date with day > 12

Time Zones

R recognizes ~600 time zones. Each encodes the time zone, Daylight Savings Time, and historical calendar variations for an area. R assigns *one* time zone per vector.

Use the **UTC** time zone to avoid Daylight Savings.

OlsonNames() Returns a list of valid time zone names. *OlsonNames()*



with_tz(time, tzone = "") Get the **same date-time** in a new time zone (a new clock time). *with_tz(dt, "US/Pacific")*

force_tz(time, tzone = "") Get the **same clock time** in a new time zone (a new date-time). *force_tz(dt, "US/Pacific")*