

Working with dates

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May 18, 2016

Starting simple

```
d1 = date()  
d1
```

```
## [1] "Wed May 18 11:04:34 2016"
```

```
class(d1)
```

```
## [1] "character"
```

Date class

```
d2 = Sys.Date()  
d2
```

```
## [1] "2016-05-18"
```

```
class(d2)
```

```
## [1] "Date"
```

Formatting dates

%d = day as number (0-31), %a = abbreviated weekday, %A = unabbreviated weekday, %m = month (00-12), %b = abbreviated month, %B = unabbreviated month, %y = 2 digit year, %Y = four digit year

```
format(d2,"%a %b %d")
```

```
## [1] "Wed May 18"
```

Creating dates

```
x = c("1jan1960", "2jan1960", "31mar1960", "30jul1960"); z
```

```
## [1] "1960-01-01" "1960-01-02" "1960-03-31" "1960-07-30"
```

```
z[1] - z[2]
```

```
## Time difference of -1 days
```

```
as.numeric(z[1]-z[2])
```

```
## [1] -1
```

Converting to Julian

```
weekdays(d2)
```

```
## [1] "Wednesday"
```

```
months(d2)
```

```
## [1] "May"
```

```
julian(d2)
```

```
## [1] 16939
```

```
## attr(,"origin")
```

```
## [1] "1970-01-01"
```

Lubridate

```
library(lubridate); ymd("20140108")
```

```
## Loading required package: methods
```

```
##
```

```
## Attaching package: 'lubridate'
```

```
## The following object is masked from 'package:base':
```

```
##
```

```
##      date
```

```
## [1] "2014-01-08"
```

```
mdy("08/04/2013")
```

```
## [1] "2013-08-04"
```

```
dmy("03-04-2013")
```

Dealing with times

```
ymd_hms("2011-08-03 10:15:03")
```

```
## [1] "2011-08-03 10:15:03 UTC"
```

```
ymd_hms("2011-08-03 10:15:03",tz="Pacific/Auckland")
```

```
## [1] "2011-08-03 10:15:03 NZST"
```

```
?Sys.timezone
```

```
http://www.r-statistics.com/2012/03/  
do-more-with-dates-and-times-in-r-with-lubridate-1-1-0/
```


Some functions have slightly different syntax

```
x = dmy(c("1jan2013", "2jan2013", "31mar2013", "30jul2013"))  
wday(x[1])
```

```
## [1] 3
```

```
wday(x[1], label=TRUE)
```

```
## [1] Tues
```

```
## Levels: Sun < Mon < Tues < Wed < Thurs < Fri < Sat
```

Notes and further resources

- ▶ More information in this nice lubridate tutorial
<http://www.r-statistics.com/2012/03/do-more-with-dates-and-times-in-r-with-lubridate-1-1-0/>
- ▶ The lubridate vignette is the same content
<http://cran.r-project.org/web/packages/lubridate/vignettes/lubridate.html>
- ▶ Ultimately you want your dates and times as class “Date” or the classes “POSIXct”, “POSIXlt”. For more information type `?POSIXlt`