Working with dates

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Starting simple

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

```
[1] "Sun Jan 12 17:48:33 2014"
```

```
class(d1)
```

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

Date class

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

```
[1] "2014-01-12"
```

```
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` = unabbrevidated month, `%y` = 2 digit year, `%Y` = four digit year

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

```
[1] "Sun Jan 12"
```

Creating dates

```
x = c("1jan1960", "2jan1960", "31mar1960", "30jul1960"); z = as.Date(x, "%d%b%Y")
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] "Sunday"
```

```
months(d2)
```

```
[1] "January"
```

```
julian(d2)
```

```
[1] 16082
attr(,"origin")
[1] "1970-01-01"
```

Lubridate

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

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

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

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

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

```
[1] "2013-04-03 UTC"
```

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

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`