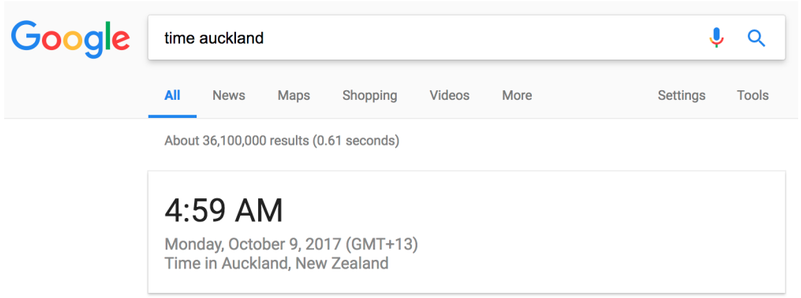
Time zones

WORKING WITH DATES AND TIMES IN R

Charlotte Wickham
Instructor

Time zones




```
Sys.timezone()
```

```
"America/Los_Angeles"
```

IANA Timezones

```
OlsonNames()
```

```
"Africa/Abidjan"          "Africa/Accra"
"Africa/Addis_Ababa"      "Africa/Algiers"
"Africa/Asmara"           "Africa/Asmera"
"Africa/Bamako"           "Africa/Bangui"
...
```

```
length(OlsonNames())
```

```
594
```

Setting and extracting

```
mar_11 <- ymd_hms("2017-03-11 12:00:00",
+      tz = "America/Los_Angeles")
mar_11
```

```
"2017-03-11 12:00:00 PST"
```

```
tz(mar_11)
```

```
"America/Los_Angeles"
```

Manipulating timezones

`force_tz()` - change the timezone without changing the clock time

```
mar_11
```

```
"2017-03-11 12:00:00 PST"
```

```
force_tz(mar_11,
    tzone = "America/New_York")
```

```
"2017-03-11 12:00:00 EST"
```

`with_tz()` - view the same instant in a different timezone

```
mar_11
```

```
"2017-03-11 12:00:00 PST"
```

```
with_tz(mar_11,
    tzone = "America/New_York")
```

```
"2017-03-11 15:00:00 EST"
```

Let's practice!

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More on importing and exporting datetimes

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Fast parsing

`parse_date_time()` can be slow because it's designed to be forgiving and flexible.

```
library(fasttime)
fastPOSIXct("2003-02-27")
```

```
"2003-02-26 16:00:00 PST"
```

fast_strptime()

```
x <- "2001-02-27"
parse_date_time(x, order = "ymd")
```

```
"2001-02-27 UTC"
```

```
fast_strptime(x, format = "%Y-%m-%d")
```

```
"2001-02-27 UTC"
```

```
fast_strptime(x, format = "%y-%m-%d")
```

```
NA
```

See Details of `format` in **`strptime()`**

Exporting datetimes

```
library(tidyverse)
akl_hourly %>%
  select(datetime) %>%
  write_csv("tmp.csv")
```

`tmp.csv`

```
datetime
2016-01-01T00:00:00Z
2016-01-01T00:30:00Z
2016-01-01T01:00:00Z
2016-01-01T01:30:00Z
2016-01-01T02:00:00Z
2016-01-01T02:30:00Z
```

Formatting datetimes

```
my_stamp <- stamp("Tuesday October 10 2017")
```

```
Multiple formats matched: "%A %B %d %y%H"(1), "%A %B %y %d%H"(1),
"%A %B %d %Y"(1), "%A October %m %y%d"(1), "%A October %m %Y"(0),
"%A October %H %M%S"(1), "Tuesday %B %d %y%H"(1), "Tuesday %B %y %d%H"(1),
"Tuesday %B %d %Y"(1), "Tuesday October %m %y%d"(1),
"Tuesday October %m %Y"(1), "Tuesday October %H %M%S"(1)
Using: "%A %B %d %Y"
```

```
my_stamp(ymd("2003-02-27"))
```

```
"Thursday February 27 2003"
```

```
my_stamp
function(x)
format(x, format = "%A %B %d %Y")
```

```
<environment: 0x1086ed780>
```

Let's practice!

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Wrap-up

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Wrapping-up

- Chapter 1: base R objects `Date` , `POSIXct`
- Chapter 2: importing and manipulating datetimes
- Chapter 3: arithmetic with datetimes, periods, durations and intervals
- Chapter 4: time zones, fast parsing, outputting datetimes

Next steps

Next steps

Time Series with R skill track

Time Series
with R

25 hours 6 courses

Next steps

- `ggplot2`
- `dplyr`
- `stringr`
- Courses that combine multiple packages

See you in another course!

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