



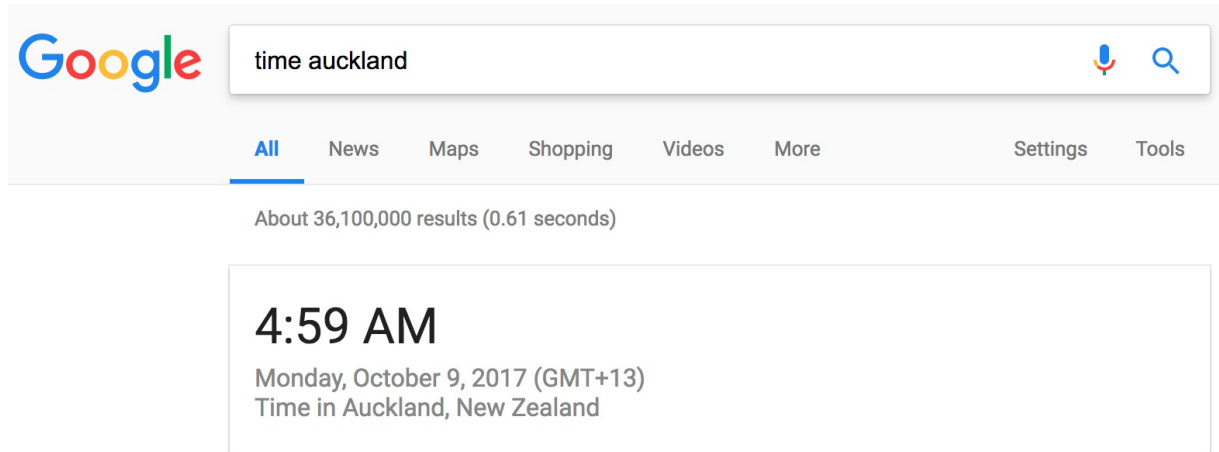
WORKING WITH DATES AND TIMES IN R

Time zones

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Instructor



Time zones



A screenshot of a Google search for "time auckland". The search bar shows the query, and the results section displays the current time in Auckland, New Zealand. The time is 4:59 AM on Monday, October 9, 2017, in GMT+13. Below the time, it says "Time in Auckland, New Zealand".

Google

time auckland

All News Maps Shopping Videos More Settings Tools

About 36,100,000 results (0.61 seconds)

4:59 AM
Monday, October 9, 2017 (GMT+13)
Time in Auckland, New Zealand

```
> Sys.timezone()  
[1] "America/Los_Angeles"
```



IANA Timezones

```
> OlsonNames()  
[1] "Africa/Abidjan"      "Africa/Accra"  
[3] "Africa/Addis_Ababa"  "Africa/Algiers"  
[5] "Africa/Asmara"       "Africa/Asmera"  
[7] "Africa/Bamako"       "Africa/Bangui"  
...  
  
> length(OlsonNames())  
[1] 594
```



Setting and extracting

```
> mar_11 <- ymd_hms("2017-03-11 12:00:00",  
+                  tz = "America/Los_Angeles")  
  
> mar_11  
[1] "2017-03-11 12:00:00 PST"  
  
> tz(mar_11)  
[1] "America/Los_Angeles"
```

Manipulating timezones

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

```
> mar_11
[1] "2017-03-11 12:00:00 PST"

> force_tz(mar_11, tzone = "America/New_York")
[1] "2017-03-11 12:00:00 EST"
```

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

```
> mar_11
[1] "2017-03-11 12:00:00 PST"

> with_tz(mar_11, tzone = "America/New_York")
[1] "2017-03-11 15:00:00 EST"
```



WORKING WITH DATES AND TIMES IN R

Let's practice!



WORKING WITH DATES AND TIMES IN R

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")
[1] "2003-02-26 16:00:00 PST"
```




fast_strptime()

```
> x <- "2001-02-27"

> parse_date_time(x, order = "ymd")
[1] "2001-02-27 UTC"

> fast_strptime(x, format = "%Y-%m-%d")
[1] "2001-02-27 UTC"

> fast_strptime(x, format = "%y-%m-%d")
[1] 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"))  
[1] "Thursday February 27 2003"
```

```
> my_stamp  
function (x)  
format(x, format = "%A %B %d %Y")  
<environment: 0x1086ed780>
```



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Let's practice!



WORKING WITH DATES AND TIMES IN R

Wrap-up

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Wrapping-up

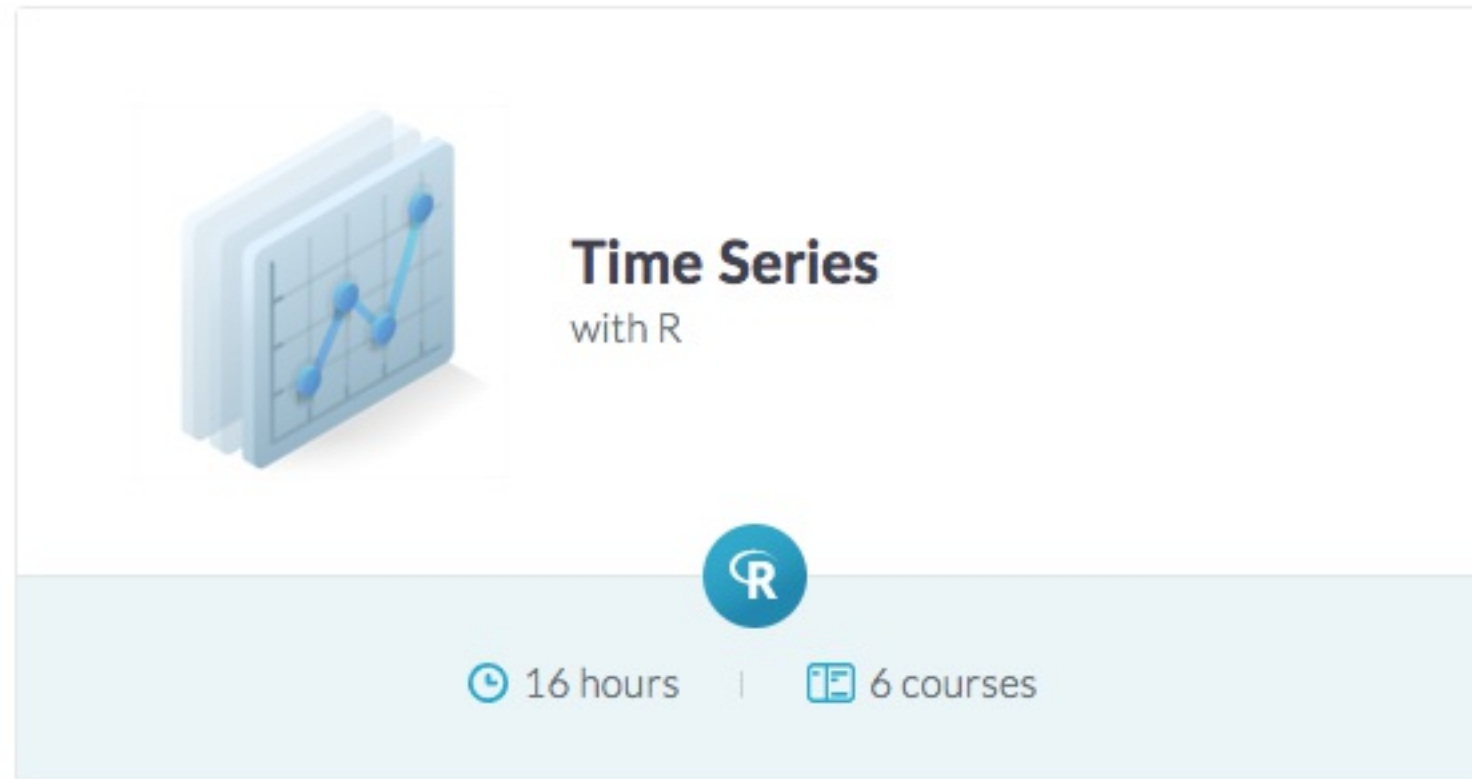
- Chapter 1: base R objects Date, POSIXct
- Chapter 2: importing and manipulating datetimes
- Chapter 3: arithmetic with datetimes, periods, durations and intervals
- Chapter 4: time zones, fast parsing, outputting datetimes



Next steps


Next steps



- Time Series in R skill track



The image shows a skill track card for 'Time Series with R'. It features a 3D icon of a calendar with a line graph on top, representing time series data. The text 'Time Series' is in bold, with 'with R' in a smaller font below it. A circular icon with the R logo is centered below the text. At the bottom, a light blue bar contains a clock icon followed by '16 hours' and a book icon followed by '6 courses', separated by a vertical line.

Time Series
with R



 16 hours |  6 courses



Next steps

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



WORKING WITH DATES AND TIMES IN R

**See you in another
course!**