

## 1.) Convert to a date, or date-time class

The screenshot displays the RStudio interface with two panels. The top panel shows the R script editor with code for loading libraries, creating a datetime object, and filtering data. The bottom panel shows the console output and a data visualization.

**Code in R Script Editor:**

```
library(lubridate)
ymd("2006-03-12")
ymd("06 March 12")
ymd_hm("06/3/12 6:30 pm")

library(dplyr)
library(tidyr)

andrew_tracks <- ext_tracks %>%
  filter(storm_name == "ANDREW" & year == "1992")
select(year, month, day, hour, max_wind, min_p
unite(datetime, year, month, day, hour) %>%
mutate(datetime = ymd_h(datetime))

head(andrew_tracks, 3)
```

**Console Output:**

```
> library(lubridate)
> ymd("2006-03-12")
[1] "2006-03-12"
> ymd("06 March 12")
[1] "2006-03-12"
> ymd_hm("06/3/12 6:30 pm")
[1] "2006-03-12 18:30:00 UTC"
> library(dplyr)
Warning messages:
1: In if (match < 0) { :
  the condition has length > 1 and only the first element will be used
2: In if (match < 0) { :
  the condition has length > 1 and only the first element will be used
> library(tidyr)
> andrew_tracks <- ext_tracks %>%
+ filter(storm_name == "ANDREW" & year == "1992") %>%
+ select(year, month, day, hour, max_wind, min_pressure) %>%
+ unite(datetime, year, month, day, hour) %>%
+ mutate(datetime = ymd_h(datetime))
> head(andrew_tracks, 3)
# A tibble: 3 x 3
  datetime                max_wind min_pressure
<dtm>                  <dbl>      <dbl>
1 1992-08-16 18:00:00         25        1010
2 1992-08-17 00:00:00         30        1009
3 1992-08-17 06:00:00         30        1008
```

**Data Visualization:**

The bottom panel shows a data visualization of the 'andrew\_tracks' dataset. The plot displays two variables, 'max\_wind' and 'min\_pressure', over time (datetime). The x-axis represents the date from August 18 to August 28. The y-axis represents the value of the variables. The 'max\_wind' plot shows a peak around August 22, while the 'min\_pressure' plot shows a corresponding dip.

## 2.) Pulling out date and time elements

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
jaspa_lab3.R
# ggplot(aes(x = datetime, y = value)) +
#   geom_point() + geom_line() +
#   facet_wrap(~ measure, ncol = 1, scales = "free")
andrew_tracks %>%
  select(datetime) %>%
  mutate(year=year(datetime),
         month = months(datetime),
         weekday = weekdays(datetime),
         yday = yday(datetime),
         hour = hour(datetime)) %>%
  slice(1:3)
151:26 (Top Level) R Script
```

```
R - R 4.1.0 ~ /
> andrew_tracks %>%
+   select(datetime) %>%
+   mutate(year=year(datetime),
+          month = months(datetime),
+          weekday = weekdays(datetime),
+          yday = yday(datetime),
+          hour = hour(datetime)) %>%
+   slice(1:3)
# A tibble: 3 x 6
  datetime          year month weekday yday
<dtm>          <dbl> <chr> <chr> <dbl>
1 1992-08-16 18:00:00 1992 August Sunday 229
2 1992-08-17 00:00:00 1992 August Monday 230
3 1992-08-17 06:00:00 1992 August Monday 230
# i 1 more variable: hour <int>
> |
```

