STAT 33B Lab Workbook Wk 10

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Mar 28, 2021

This workbook is due **Apr 1, 2021** by 9:00am PT or by midnight Apr 2 if you are attending lab.

- Knit and submit the generated PDF file on Gradescope.

Exercise 1

A vectorized implementation of the `to_kelvin` function is:

```
to_kelvin = function(temperature, unit) {
  unit = match.arg(unit, c("celsius", "fahrenheit"), several.ok = TRUE)

  # First convert Fahrenheit to Celsius.
  is_f = unit == "fahrenheit"
  temperature[is_f] = (temperature[is_f] - 32) * 5 / 9

  temperature + 273.15
}
```

Write a modified version of `to_kelvin` that checks for potential problems. In particular, your version should check the assumptions that:

- `temperature` is numeric.
- `temperature` and `unit` are the same length, or `unit` has length 1.

Your version should raise an error (with a descriptive message) if either of these assumptions don't hold.

Test your function to show that it checks for potential problems. You can use `error = TRUE` on an RMarkdown code chunk to allow errors when knitting.

YOUR ANSWER GOES HERE:

```
to_kelvin = function(temperature, unit) {
  if (!is.numeric(temperature)) {
    stop("temperature needs to be numeric")
  }

  if (length(temperature) != length(unit) && length(unit) != 1) {
    stop("temperature and unit need to be same length or unit needs to be length 1")
  }
```

```
  unit = match.arg(unit, c("celsius", "fahrenheit"), several.ok = TRUE)

  # First convert Fahrenheit to Celsius.
  is_f = unit == "fahrenheit"
  temperature[is_f] = (temperature[is_f] - 32) * 5 / 9

  temperature + 273.15
}
```

Test your function with the following inputs:

```
to_kelvin(c(0, 32, 212, 100), c("c", "f", "f", "c"))
```

```
## [1] 273.15 273.15 373.15 373.15
```

```
to_kelvin(c(0, 100), "c")
```

```
## [1] 273.15 373.15
```

```
to_kelvin("hello", "c")
```

```
## Error in to_kelvin("hello", "c"): temperature needs to be numeric
```

```
to_kelvin(c(10, 20), c("c", "c", "f"))
```

```
## Error in to_kelvin(c(10, 20), c("c", "c", "f")): temperature and unit need to be same length or unit
```

Exercise 2

getwd() path.expand("~") Skim `?options` and `?Startup`.

Create or edit your `.Rprofile` file to set an option (or several options).

Check that your option is actually set when you restart R (you can call `options` without any arguments to see your current options).

In your answer here, describe which option you set and include the code you added to `.Rprofile`.

YOUR ANSWER GOES HERE: I used "options(prompt ="»> ", continue ="... ")". Thus my regular ">" in my output turned into "»>".

My code looked like this:

    getwd()

    file.edit(".Rprofile)

In Rprofile tab I put in:

    options(prompt = "»>", continue = "...")