Assignment 3

- Use the NASA dataset
  - `ns = dplyr::nasa;`
  - `ns = as.data.frame(ns);`
- Plot avg pressure for each latitude. Do also for longitude
  - Hint: You will have to `aggregate` data!
  - Do you see any pattern?
- How many `cloudlow` entries are `NA` ? Create a new data frame after excluding these. Repeat the above plots.
- Does the level of `ozone` depend on latitude or longitude? How will you find that? Make multi-color plots with legends.

- Do you expect `temperature` and surface temperature (`surftemp`) to be related? How can you find that?
- Has the average `temperature` increased over the years? What about the average variability in `temperature`? Does that also vary with `year`?
- The month of May shows least variability in both `surftemp` and `temperature`. Am I right or not? Support your answer with data!
- Comment on the relation between `surftemp` and `cloudmid`! Use plots.
- Take a random sample (w/o replacement) of 5000 points of the NASA dataset. Repeat the last 4 questions on this smaller dataset!
- Make fractional year as:
  - `ns$frac_yr = ns$year + (ns$month-1)/12;`
  - Plot average `surftemp` for each `frac_yr`. Do you see a pattern? Comment!