Lecture 2.2 – Basic Plotting with R Markdown

Specific Learning Objectives:

2.2.1 – Create reproducible scripts in R.

2.2.2 – Include effective documentation in scripts and projects.

2.2.4 – Create and use Notebooks and documents using RMarkdown.

3.2 – Learn how to plot quickly using R's base graphics.

Skill Check 1 Debrief

- Stats presented in R Markdown Preview.

- **Problem areas:** (< 50% correct)
  - Q5 (Lists)
  - Q6 (Data frames)
  - Q8 (Factors)
  - Q10 (Troubleshooting)

Question 5: Lists

I have created a list stored with the name `my_list` with the following code:

```
my_list <- list("flower" = c(1, 4.9, 18, 38, 20, 10.02),
                "micha" = matrix(runif(30), nrow = 5),
                "color" = data.frame("x" = c(1.1, 1.2, 1.3),
                                     "y" = c(2.3, 5.6, 6.2)),
                 1:40)
```

How many members does this list contain? What data class is each member? How would you reference the integer 3 in `my_list`?

Skill Check 1 Debrief

Question 6: Data frames

Calculate the mean number of breaks in the `warpbreaks` data set if the tension is either low (`L`) or medium (`M`).

```
warpbreaks      54 obs. of 3 variables
    $ breaks : num  26 30 54 25 70 52 51 26 67 18 ...
    $ wool   : Factor w/ 2 levels "A","B": 1 1 1 1 1 1 1 1 1…
    $ tension: Factor w/ 3 levels "L","M","H": 1 1 1 1 1 1 1…
```

Question 8: Factors

Create an ordered factor vector with the levels good $<$ better $<$ best to describe your preference for the following sports: baseball, hockey, basketball, football, soccer.

Check Your Understanding

Make a plot of vapor pressure in mmHg versus temperature in C of mercury using the `pressure` data set. Set the axis labels and title.

Make the same plot using a different method (either with or without a formula).

Check Your Understanding

Make a plot of circumference versus age of the orange trees in the data set `Orange`. Give each tree a unique color *and* point shape.

Check Your Understanding

Add a legend to your graph of `Orange` trees.

In-class Exercises

1. **Pick a data set from the base package (`data()`) and make one or two plots. Add these plots to the end of your L2.2Notebook.Rmd file.**

2. **Work on Assignment 2.1. (Remember, this should be a separate Rmd file than the lecture notes!)**

Action Items

1. **Complete Assignment 2.1 using R Markdown.**

2. **Read Davies Chapter 8 and Chang Chapters 1-2 for next time.**