

**DUE DATE: WEDNESDAY, SEPTEMBER 11, 2024 by 11:59 PM on Gradescope**  
**No lates accepted.**

Perform each of the requested steps in R code. Include comments in your code to indicate which question you are answering. Please also include any written answers to questions and computed values in your code. Add appropriate amounts of white space to make your response easy to read.

**You may ONLY use techniques that we have shown during class in your solutions.**

Submit your code with commented answers to Gradescope.

### Task: Data Frame Creation

1. A pepper enthusiast puts together the following data set about different peppers (least spicy to most spicy), how hot they are, and how many days it takes to grow the pepper plants from seed. Pepper is the name of the pepper, Scoville Units is how hot the pepper is in thousands (the larger the number, the hotter the pepper), and Growing Time represents how many days on average it takes to grow the pepper from seed.

Pepper	Scoville Units (thousands)	Growing Time (Days)
Bell	0	75
Tabasco	50	80
Ghost	855	120

- (a) Create a vector called `pepper` consisting of the words Bell, Tabasco, Ghost.
- (b) Create a vector called `scoville` consisting of the Scoville Units as numbers.
- (c) Create a vector called `days` consisting of the Growing Times as numbers.
- (d) Combine these three vectors to create a data frame called `HeatScale`.
- (e) One of the hottest peppers in the world is the Carolina Reaper. The `Reaper` has a Scoville Unit (in thousands) of 2000, and a growing time in days of about 95 days. Create a vector called `cr` consisting of these values (pepper, scoville, days).
- (f) Add `cr` as a row to `HeatScale`. Make sure you work with the data frame you previously created, and not the original vectors.
- (g) Determine the variable type of each variable in `HeatScale` and describe any issues, if any, you observe. Include any code used and include your values as a comment.
- (h) Convert each variable to an appropriate type (numeric, character, factor, or ordered factor) within the data frame. For each type you choose, explain why you picked that type. Include your values as a comment in your code. Notice that as we go from Bell to Reaper that the Scoville units gets larger (least hot to most hot). *Hint:* Here is a list of functions you might use in your conversions: `as.numeric()`, `as.character()`, `factor()`, `ordered()`.