# 308 Oral Exam script

Say hi and welcome them. Perhaps make a small joke to try and get them somewhat comfortable.

## Describe process, ask if they have any questions before you get started

* Ask them if they can see your screen
* Note that the format is the same as the first oral exams.
* Ask if they have any questions?

## Share document and ask questions

Switch to sharing the .Rmd file within R Studio (make sure your font is large and your window is mostly taken up by the .Rmd file) Double check that they can see the document.

Ok, now I'm going to ask you some questions about the program you see.

### Question 1 (6 pts):

#### Option 1

* In lines 29-40 we use the %>% or chaining operator several times. How does this operator work?
  + Followup Question: What does it mean that we are “chaining” or “piping”?

#### Option 2

* In lines 65-74 we use the + operator several times. Explain the meaning of this operator in terms of creating plots using the ggplot2 package.
  + Followup Question: “+” is usually addition, what are we “adding” here?

### Question 2 (4 pts):

#### Option 1

* On line 38 we use the arrange function. What is the purpose of this function?
  + Followup Question: Are we orderingthe *rows* or the *columns*, i.e. *observations* or *variables*?

#### Option 2

* On line 39 we use the filter function. What is the purpose of using this function?
  + Followup Question: Are we interested in *rows* or *columns*, i.e. *observations* or *variables*?

#### Option 3

* On line 40 we use a select function. What is the purpose of using this function?
  + Followup Question: Are we interested in *rows* or *columns*, i.e. *observations* or *variables*?

### Question 3 (6 pts):

#### Option 1:

* On lines 32-37 we use the *mutate* function in conjunction with the *if\_else* function. What is the purpose of using these two functions together?
  + Followup Question: What is being done with the *color* variable? Why am I creating the *shell* variable inside *mutate*?

#### Option 2

* On lines 54-59 we use the group\_by function in conjunction with the summarize function. What is the purpose of using these two functions together?
  + Followup Question:

### Question 4 (4 pts)

#### Option 1

* What does the 'aes' function on line 65 do?
  + Followup Question: What role to *satellite* and *width* play in the plot?

#### Option 2

* What is the purpose of the *'facet\_grid*' function in line 73?
  + Followup Question: What does the formula *~shell* mean?

#### Option 3

* On line 51 we use the pivot\_wider function. Generally, what does this function do?
  + Followup Question: Do you remember what the difference between *wide* and *long* form data is?