BI586\_Rlab\_Worksheet\_mingers

* Load the data file you will be using for the analysis and give it a name so as to access it more easily
* Also, change the name of column 21 to “Average WD”

Data=read.csv(file = "Wasting\_Data.csv",skip = 1, stringsAsFactors = T)  
colnames(Data)[21] = "Average.WD"

Problem 9: Write code that will print the column name for column 3 and the rowname for row 4

colnames(Data)[3]

## [1] "Transect"

rownames(Data)[4]

## [1] "4"

col3 = colnames(Data)[3]  
row4 = rownames(Data)[4]  
col3\_row4 = c(col3 , row4)  
col3\_row4

## [1] "Transect" "4"

* Sometimes you will want to subset a dataframe to include only specific columns or only certain values
* In our wasting data file we have a column called Transect.
* We can view the values of this column by simply clicking on the variable “Data” in our global environment OR we can have R print out all the values of this column
* If you don’t want R to barf up all the values but you are interested in how many unique values there are for this column, you can look at this column’s levels

Problem 10: How many levels does the column “Transect” have?

levels(Data$Transect)

## [1] "A" "B" "C" "EB"

* This function shows us that there are four levels in the column transect
* Lets say we want to create a dataframe that only has data for transect A, we can do this a few different ways
* One way is to use the filter function from the package dplyr

TransectA=filter(Data, Transect == "A")  
head(TransectA)

## Site Date Transect Sample.. X..leaves Leaf.Width..cm.  
## 1 Annisquam 10/3/2019 A 1 5 0.5  
## 2 Annisquam 10/3/2019 A 2 4 0.4  
## 3 Annisquam 10/3/2019 A 3 5 0.5  
## 4 Annisquam 10/3/2019 A 4 5 0.4  
## 5 Annisquam 10/3/2019 A 5 4 0.5  
## 6 Annisquam 10/3/2019 A 6 6 0.6  
## Leaf.length..cm. Sheath.Length..cm. Leaf.Mass..g. Internode.Length..cm.  
## 1 25.5 6.8 0.192 2.7  
## 2 24.7 7.3 0.195 1.5  
## 3 28.1 8.4 0.268 1.5  
## 4 25.9 7.7 0.116 1.2  
## 5 28.5 6.7 0.199 2.4  
## 6 31.0 7.3 0.497 1.8  
## Aboveground.mass..cm. Belowground.Mass..g.  
## 1 0.881 0.624  
## 2 1.442 0.334  
## 3 2.119 0.771  
## 4 1.069 0.463  
## 5 1.310 0.778  
## 6 2.075 0.826  
## Aboveground.to.Belowground.Mass..g. WD.1.... WD.2.... WD.3.... WD.4....  
## 1 1.411859 30 5 0 10  
## 2 4.317365 10 0 2 0  
## 3 2.748379 20 5 10 20  
## 4 2.308855 0 0 1 5  
## 5 1.683805 0 80 3 3  
## 6 2.512107 0 0 5 0  
## WD.5.... WD.6.... WD.7.... Average.WD Second.leaf leaf.area  
## 1 10 N/A N/A 11.000 1.275 12.75  
## 2 30 N/A N/A 8.400 0.000 9.88  
## 3 0 N/A N/A 11.000 1.405 14.05  
## 4 N/A N/A N/A 1.500 0.000 10.36  
## 5 N/A N/A N/A 21.500 22.800 14.25  
## 6 0 0 N/A 0.833 0.000 18.60

Problem 11: How many rows are in your new dataframe TransectA?

nrow(TransectA)

## [1] 10

* There are 10 rows in TransectA

Problem 12: Create a dataframe that consistes of only data from Transect A AND Transect B. How many rows are in this new dataframe?

TransectAB = filter(Data, Transect == "A" | Transect =="B")  
nrow(TransectAB)

## [1] 20

* There are 20 rows in TransectAB
* Maybe we don’t care about most of these columns and want to just work with the first three

InfoTransectA=TransectA[,1:3]  
head(InfoTransectA)

## Site Date Transect  
## 1 Annisquam 10/3/2019 A  
## 2 Annisquam 10/3/2019 A  
## 3 Annisquam 10/3/2019 A  
## 4 Annisquam 10/3/2019 A  
## 5 Annisquam 10/3/2019 A  
## 6 Annisquam 10/3/2019 A

How do we save stuff that we can create in R?

* Even though you can save your script with a simple ctrl+S, this is just saving the instructions
* Sometimes we want to save an output so we don’t have to run through our whole code again to look at it.
* One way of doing this is saving EVERYTHING in your global environment by using the following:

save.image(file="filename.RData")

* Then the function load can be used to re-load your saved global environment

load(file="filename.RData")

* You can also save files as .csv or a space separated file using the following functions:

write.csv(InfoTransectA, file="InfoTranectA.csv")  
write.table(InfoTransectA, file="InfoTransectA.txt",sep=" ")  
write.table(InfoTransectA, file="InfoTransectA.tab", sep="\t")