

Intro R Assignment 1

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Download and read in the datafile “./quant_methods/data/tgpp.csv” from the class website. This dataset represents the vascular plant species richness that was collected from the Tallgrass Prairie Preserve from 10 x 10 m quadrats. Species richness is simply the number of species that occur within a quadrat. Read the data into R, note this datafile has a header (i.e., it has column names) unlike the example we examined in class.

```
data <- read.csv('https://raw.githubusercontent.com/dmcglinn/quant_methods/gh-pages/data/tgpp.csv')
```

1.) What are the names of the columns in this dataset?

```
head(data)
```

```
##   plot year record_id corner scale richness easting northing slope  ph
## 1  205 1998      187    NA   100       60  727000  4080000    3 6.9
## 2  205 1998      188     1    10       36  727000  4080000    3 6.9
## 3  205 1998      189     2    10       34  727000  4080000    3 6.9
## 4  205 1998      190     3    10       37  727000  4080000    3 6.9
## 5  205 1998      191     4    10       33  727000  4080000    3 6.9
## 6  205 1998      192     1     1       21  727000  4080000    3 6.9
##   yrsslb
## 1   0.39
## 2   0.39
## 3   0.39
## 4   0.39
## 5   0.39
## 6   0.39
```

2.) How many rows and columns does this data file have?

```
dim(data)
```

```
## [1] 4080  11
```

4080 rows and 11 columns

3.) What kind of object is each data column?

```
sapply(data, class)
```

```
##      plot      year record_id  corner      scale richness easting
## "integer" "integer" "integer" "integer" "numeric" "integer" "integer"
## northing  slope      ph  yrsslb
## "integer" "integer" "numeric" "numeric"
```

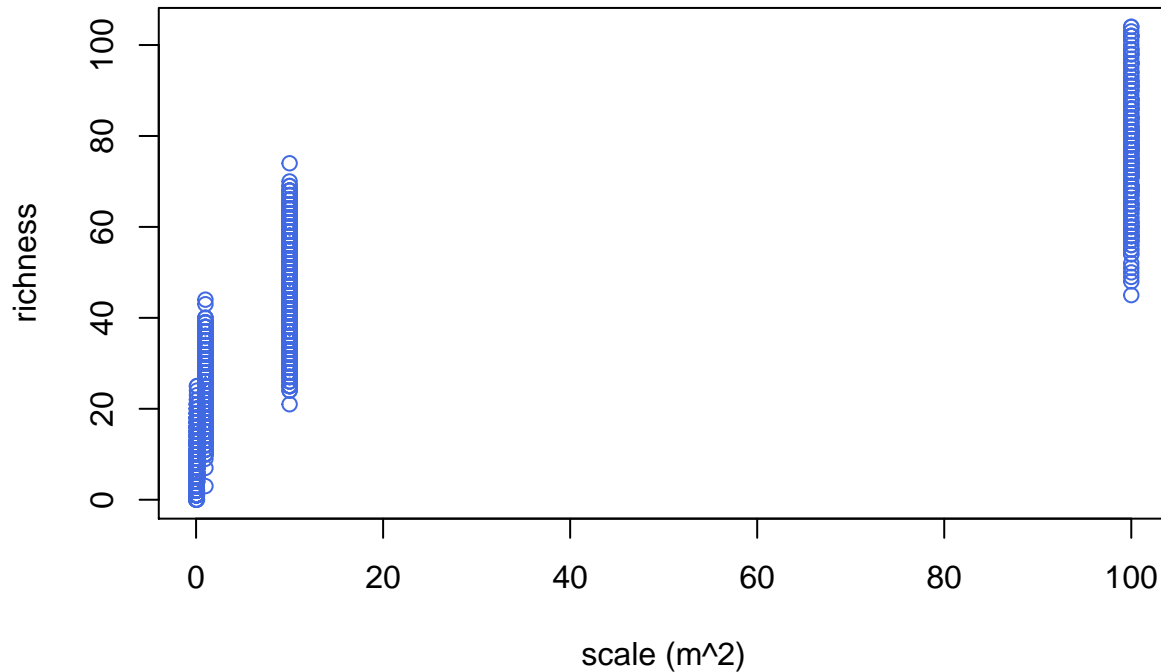
4.) What are the values of the the datafile for rows 1, 5, and 8 at columns 3, 7, and 10?

```
data[c(1, 5, 8), c(3, 7, 10)]
```

```
##   record_id easting  ph
## 1      187  727000 6.9
## 5      191  727000 6.9
## 8      194  727000 6.9
```

5.) Create a pdf of the relationship between the variables “scale” and “richness”. Scale is the area in square meters of the quadrat in which richness was recorded. Be sure to label your axes clearly, and choose a color you find pleasing for the points. To get a list of available stock colors use the function `colors()`.

```
plot(richness ~ scale, data=data, ylab = "richness", xlab = "scale (m^2)", col = "royalblue")
```



```
pdf('/home/strangebb/quant_methods/graphs/tgpp_fig1.pdf')
plot(richness ~ scale, data=data, ylab = "richness", xlab = "scale (m^2)", col = "royalblue")
dev.off()
```

```
## pdf
## 2
```

6.) What happens to your plot when you set the plot argument `log` equal to ‘xy’.

```
plot(richness ~ scale, data=data, ylab = "richness", xlab = "scale (m^2)", col = "royalblue", log='xy')
```

```
## Warning in xy.coords(x, y, xlabel, ylabel, log): 4 y values <= 0 omitted
## from logarithmic plot
```

