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Assignment 1 –01/19/15

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

```
names( Prairie_dat)

##  [1] "plot"      "year"      "record_id" "corner"    "scale"
##  [6] "richness"  "easting"   "northing"  "slope"     "ph"
## [11] "yrsslb"
```

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

```
dim( Prairie_dat)

## [1] 4080    11
```

3.   What kind of object is each data column? Hint: combine two functions that we learned in lecture.

```
ply(Prairie_dat, 2, class)

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

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

```
Prairie_dat[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".

```
pdf(file='Assignment_1plot_Beidler')
plot(Prairie_dat$scale,Prairie_dat$richness,  xlab='Scale (m2 of quadrat)',
ylab='Richness', col='cadetblue4', pch=20, main='Vascular Plant Species Richness in
Tallgrass Prairie Preserve')

dev.off()

## pdf
##    2
```

6.   When you set the plot argument log equal to 'xy', the x and y-axis are now on a log scale. The log scale makes it easier to visualize the number of species sampled in small areas (1 square meter) alongside the number of species found in large areas (100 square meters or the whole 10 x 10 m quadrat).