R Basics Assignment

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Solutions to hw1:

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

```
data = read.csv('http://dmcglinn.github.io/quant_methods/data/tgpp.csv', header = TRUE)
colnames(data)
```

```
##  [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(data)
```

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

(in the order: rows 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"
```

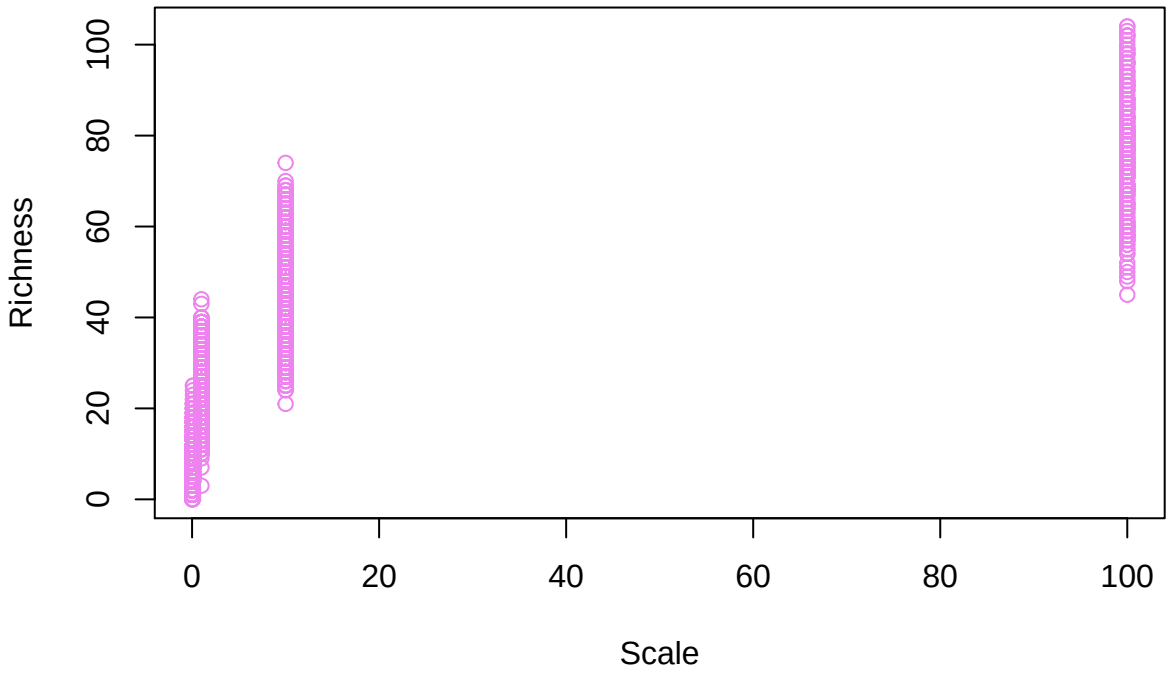
4) What are the values of the the datafile for rows 1, 5, and 8 at columns 3, 7, and 10?

```
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(). Also see this link: http://research.stowers-institute.org/efg/R/Color/Chart/index.htm.

```
plot(data$scale, data$richness, xlab = 'Scale', ylab = 'Richness', col = 'violet')
```

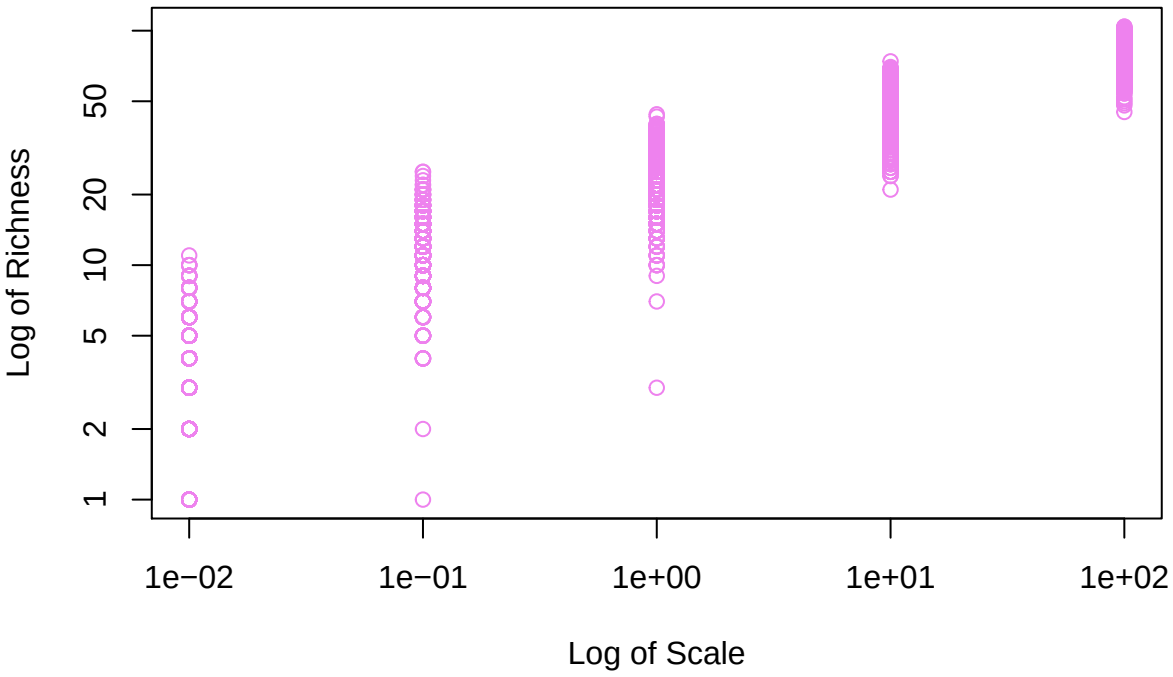


6) What happens to your plot when you set the plot argument log equal to 'xy'?

The values on the x-axis are transformed using a logarithmic function and the distribution of the points becomes more even.

```
plot(data$scale, data$richness, xlab = 'Log of Scale', ylab = 'Log of Richness', col = 'violet', log =
```

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


Log of Richness
1
2
5
10
20
50
1e−02
1e−01
1e+00
1e+01
1e+02
Log of Scale