Intro_R_Rmd

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.

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

Read the data into R, note this datafile has a header (i.e., it has column names) unlike the example we examined in class.

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

```
head(tgpp,1)
```

```
##   plot year record_id corner scale richness easting northing slope  ph
## 1  205 1998       187     NA   100       60  727000  4080000     3 6.9
##   yrsslb
## 1   0.39
```

plot, year, record_id, corner, scale, richness, easting, northing, slope, ph, yrsslb

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

```
dim(tgpp)
```

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

11 columns and 4080 rows

3. What kind of object is each data column? Hint: checkout the function sapply().

```
sapply(tgpp,class)
```

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

Plot "integer" year "integer" record_id "integer" corner "integer" scale "numeric" richness "integer" easting "integer" northing "integer" slope "integer" ph "numeric" yrsslb "numeric"

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

```
tgpp[1,3]
```

```
## [1] 187
```

```
tgpp[1,7]
```

```
## [1] 727000
```

```
tgpp[1,10]
```

```
## [1] 6.9
```

```
tgpp[5,3]
```

```
## [1] 191
```

```
tgpp[5,7]
```

```
## [1] 727000
```
```
tgpp[5,10]
```
```
## [1] 6.9
```
```
tgpp[8,3]
```
```
## [1] 194
```
```
tgpp[8,7]
```
```
[1] 727000
```
```
tgpp[8,10]
```
```
[1] 6.9
```
[1 (Row 1 columns 3,7,10) 187 727000 6.9][5 (Row 5 columns 3,7,10) 191 727000 6.9] [8 (Row 8 columns 3,7,10) 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(tgpp$scale,tgpp$richness,xlab="Scale (area in square meters)",ylab="Richness",col="dodgerblue",mair
```

Relationship between Scale and Richness
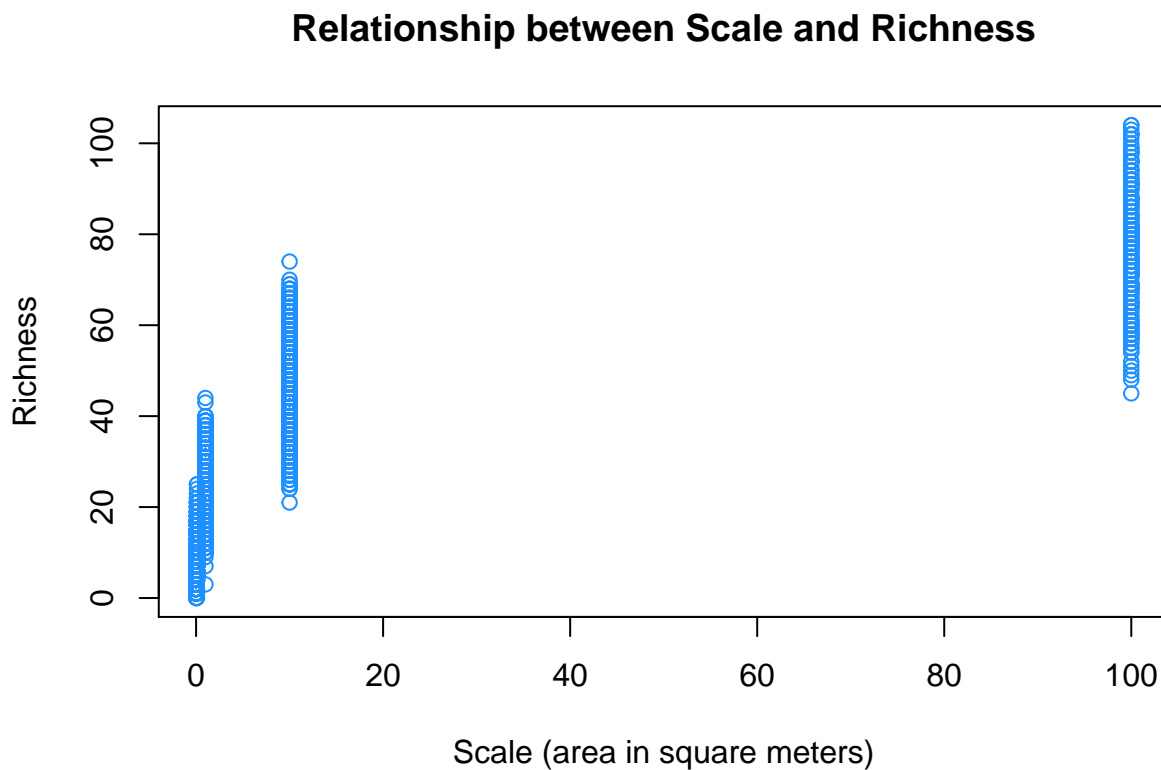
6. What happens to your plot when you set the plot argument log equal to 'xy'. plot(..., log='xy')

```
plot(tgpp$scale,tgpp$richness,xlab="Scale",ylab="Richness",col="dodgerblue", log="xy")
```

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

[](R_Basic_files/figure-latex/log equals to "xy"-1.pdf) 4 y values <= 0 omitted from logarithmic plot