

RMarkdown_Demo_1

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```
#install and load the relevant packages  
##install.packages("dplyr", "tidyr", "pander")  
library(dplyr) #useful for data manipulation
```

```
## Warning: package 'dplyr' was built under R version 3.6.2
```

```
##
```

```
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
```

```
##
```

```
## filter, lag
```

```
## The following objects are masked from 'package:base':
```

```
##
```

```
## intersect, setdiff, setequal, union
```

```
library(tidyr) #useful to format data
```

```
## Warning: package 'tidyr' was built under R version 3.6.2
```

```
library(pander) #creates tables
```

```
## Warning: package 'pander' was built under R version 3.6.2
```

```
#set working directory to where data files are stored  
#setwd()
```

```
#Import data from csv file in directory and assign data.frame to object 'elongation'  
elongation <- read.csv("EmpetrumElongation.csv", sep = ",") #separated by commas  
head(elongation)
```

```
##   Zone Indiv X2007 X2008 X2009 X2010 X2011 X2012  
## 1    2   373   5.1   5.1   4.8   8.7   6.3   3.2  
## 2    2   379   8.1  13.3   8.6   4.9   5.9   6.3  
## 3    2   383   9.3   8.5  11.7   7.9   8.0   6.3  
## 4    2   389  15.0  10.3   6.8   6.9   5.9   7.6  
## 5    2   390   3.5   6.2   4.7   3.8   3.5   3.0  
## 6    2   395   6.1   5.6   4.4   4.5   4.5   7.6
```

```

#Tidy the data
#Put in long format with gather()
elongation_long <- gather(elongation,
                           Year, #name column
                           Length, #name column
                           c(X2007, X2008, X2009, X2010, X2011, X2012)) #Gather the lengths by year
head(elongation_long) #preview the data

```

```

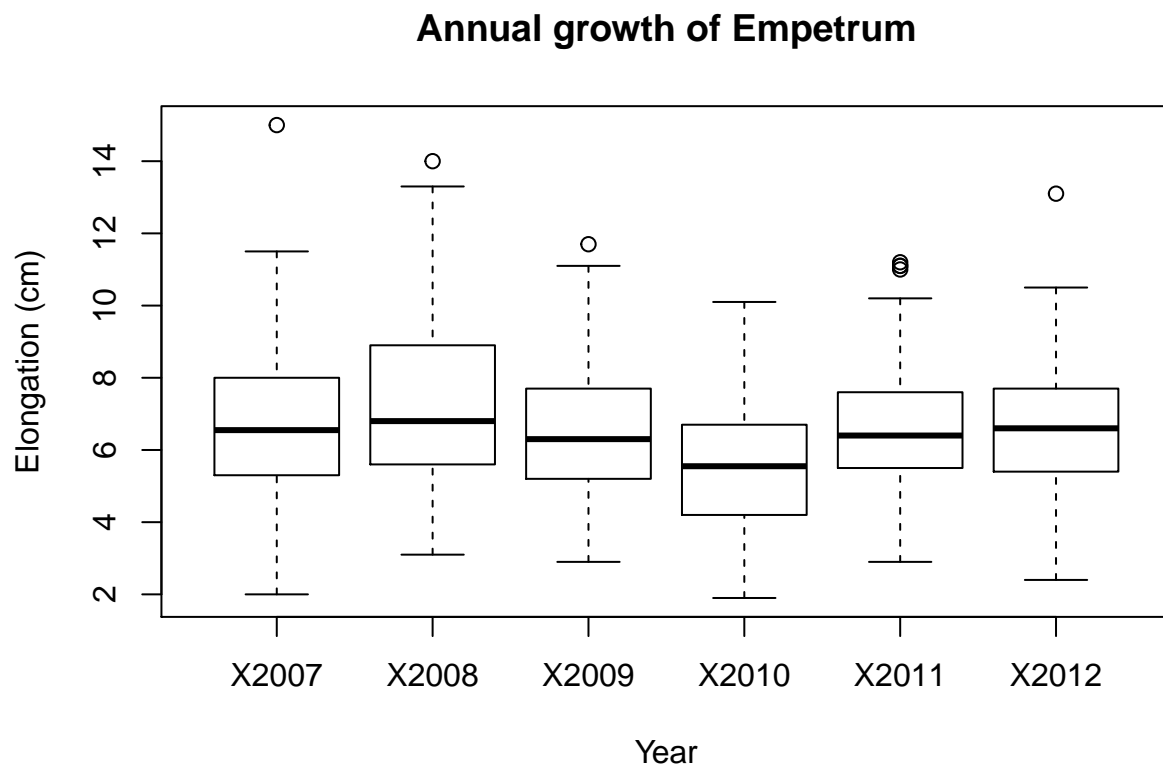
##   Zone Indiv  Year Length
## 1    2   373 X2007    5.1
## 2    2   379 X2007    8.1
## 3    2   383 X2007    9.3
## 4    2   389 X2007   15.0
## 5    2   390 X2007    3.5
## 6    2   395 X2007    6.1

```

```

#investigating the data
#create a boxplot of the 'elongation_long'
boxplot(Length ~ Year,
        data = elongation_long, #call data from data.frame
        xlab = 'Year', #x-axis title
        ylab = 'Elongation (cm)', #y-axis title
        main = "Annual growth of Empetrum") #main title

```



```

# missing Germination.csv file

# germination of seeds subjected to toxic solutions
# Import data from csv file in directory and assign data.frame to object 'germination'
germination <- read.csv("Germination.csv", sep = ",") #separated by commas

# Use filter() to keep only the rows of `germination' for species `SR'
germinSR <- filter(germination, Species == 'SR')

# create histogram of germination of species 'SR' with 8 breaks
# use $ to access variables in column Nb_seeds_germin
hist(germinSR$Nb_seeds_germin, breaks = 8)

# Use mutate() to create a new column of the germination percentage using the total number of seeds
# and the number of seeds that germinated
germin_percent <- mutate(germination, Percent = Nb_seeds_germin / Nb_seeds_tot * 100)

# Use a pipe to get a table of summary statistics for each Seed type
germin_summ <- germin_percent %>%
  group_by(Species) %>%
  summarise("Mean germination per" = mean(Nb_seeds_germin),
            "Max germination per" = max(Nb_seeds_germin),
            "Min germination per" = min(Nb_seeds_germin))

```