Statistics Basics

Descriptive Statistics

```
library(foreign)
library(dplyr)
```

```
##
## 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
```

```
affairs <- read.csv(url("https://raw.githubusercontent.com/glago66/Final-Project/master/affairs.csv"))
glimpse(affairs)
```

```
## Observations: 601
## Variables: 10
## $ x          <int> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 1...
## $ sex        <fct> male, female, female, male, male, female, female, male, ...
## $ age        <dbl> 37, 27, 32, 57, 22, 32, 22, 57, 32, 22, 37, 27, 47, 22, ...
## $ ym         <dbl> 10.00, 4.00, 15.00, 15.00, 0.75, 1.50, 0.75, 15.00, 15.0...
## $ child      <fct> no, no, yes, yes, no, no, no, yes, yes, no, yes, yes, ye...
## $ religious  <int> 3, 4, 1, 5, 2, 2, 2, 2, 4, 4, 2, 4, 5, 2, 4, 1, 2, 3, 2,...
## $ education  <int> 18, 14, 12, 18, 17, 17, 12, 14, 16, 14, 20, 18, 17, 17, ...
## $ occupation <int> 7, 6, 1, 6, 6, 5, 1, 4, 1, 4, 7, 6, 6, 5, 5, 5, 4, 5, 5,...
## $ rate       <int> 4, 4, 4, 5, 3, 5, 3, 4, 2, 5, 2, 4, 4, 4, 4, 5, 3, 4, 5,...
## $ nbaffairs  <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,...
```

```
affairs$child
```

```
##   [1] no  no  yes yes no  no  no  yes yes no  yes yes yes no  no  yes yes no
##  [19] no  yes no  no  yes yes yes no  no  yes yes yes yes no  no  yes yes no
##  [37] yes no  yes no  yes yes no  yes yes no  yes yes yes yes no  yes yes yes
##  [55] no  yes yes yes no  yes yes yes no  no  no  yes yes yes no  no  no  yes
##  [73] no  yes yes yes yes yes yes no  yes yes yes no  no  yes no  yes no  yes yes
##  [91] yes yes yes yes no  yes yes yes yes yes yes yes no  yes yes yes yes yes
## [109] yes no  yes yes no  yes no  no  yes no  no  yes yes yes yes yes no  yes
## [127] no  no  no  no  yes yes no  no  yes yes no  yes yes no  yes yes yes yes
## [145] no  yes yes yes yes yes yes no  yes yes yes yes yes yes yes yes yes yes yes
## [163] yes yes yes yes yes no  yes yes yes no  yes yes no  yes no  yes yes yes
## [181] yes yes yes no  yes yes no  yes yes yes no  yes yes yes yes yes yes no
## [199] yes no  yes yes no  no  yes no  yes no  no  yes yes no  yes no  no  no
## [217] no  no  yes yes yes yes yes no  yes yes yes yes yes yes yes yes yes yes no
## [235] no  yes no  yes yes yes yes yes yes yes yes yes yes no  yes yes yes yes yes
## [253] yes yes no  yes no  yes yes yes yes yes yes yes no  yes yes yes yes yes yes
```

```
## [271] yes no  no  yes no  yes yes yes no  no  yes yes yes yes yes no  no  yes
## [289] yes yes yes no  yes no  yes no  no  no  yes yes yes yes yes no  yes no
## [307] yes no  yes no  no  yes yes yes yes yes yes yes no  yes no  no  yes yes
## [325] no  no  yes no  yes yes no  yes yes yes yes yes no  yes yes yes no  yes
## [343] yes yes yes no  yes yes yes no  no  no  no  yes yes yes yes yes no  no
## [361] yes no  yes yes yes yes yes yes yes no  yes yes yes no  no  yes yes yes
## [379] no  yes yes yes yes yes yes yes no  yes no  no  yes yes yes yes yes yes no
## [397] no  no  yes no  yes yes yes no  no  no  yes yes no  yes no  yes no  yes
## [415] no  yes no  yes yes no  yes yes yes no  yes yes no  yes yes yes yes no
## [433] yes yes yes yes yes yes yes yes yes yes yes no  yes no  no  no  yes yes
## [451] yes no  yes yes yes no  yes yes no  yes yes yes yes yes yes yes no  yes
## [469] no  yes yes yes yes yes yes yes yes no  no  yes yes yes no  yes yes yes
## [487] no  yes yes yes yes yes no  yes yes yes yes no  yes yes yes yes yes no
## [505] yes no  yes yes yes no  yes yes yes yes yes yes yes yes yes yes yes yes
## [523] yes no  yes yes yes no  yes yes yes yes yes yes yes yes yes yes yes yes
## [541] yes yes no  yes yes yes no  yes yes no  yes yes yes yes yes yes yes yes
## [559] yes yes yes no  yes yes no  yes yes no  yes yes no  yes yes no  yes yes
## [577] yes yes no  yes yes yes yes no  yes yes yes no  yes yes yes yes yes yes
## [595] yes yes yes yes yes yes yes
## Levels: no yes
```

```
mlabs<-c("very unhappy", "unhappy", "average", "happy", "very happy")
affairs$marriage<-factor(affairs$rate, labels =mlabs)

#Frequency of Having Kids
table(affairs$child)
```

```
##
##  no yes
## 171 430
```

```
#Marriage Ratings
prop.table(table(affairs$marriage))
```

```
##
## very unhappy      unhappy      average        happy   very happy
##    0.0266223    0.1098170    0.1547421    0.3227953    0.3860233
```

```
#Contingency Table
countstab<-table(affairs$marriage, affairs$child)

# Share within marriage
prop.table(countstab, margin=1)
```

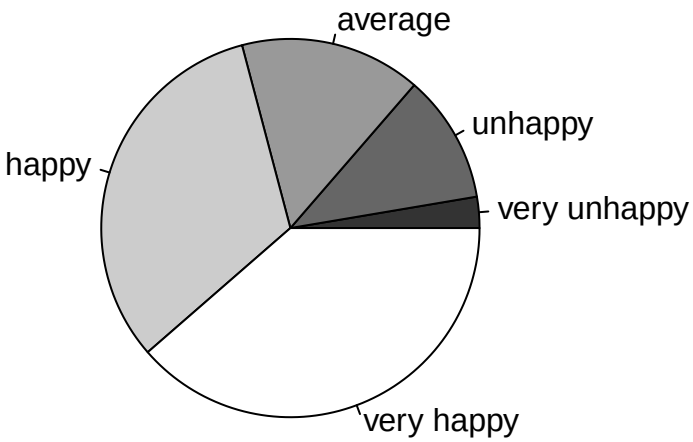
```
##
##                      no       yes
##   very unhappy 0.1875000 0.8125000
##   unhappy      0.1212121 0.8787879
##   average      0.2580645 0.7419355
##   happy        0.2061856 0.7938144
##   very happy   0.4137931 0.5862069
```

```
# Share within has kids
prop.table(countstab, margin=2)
```

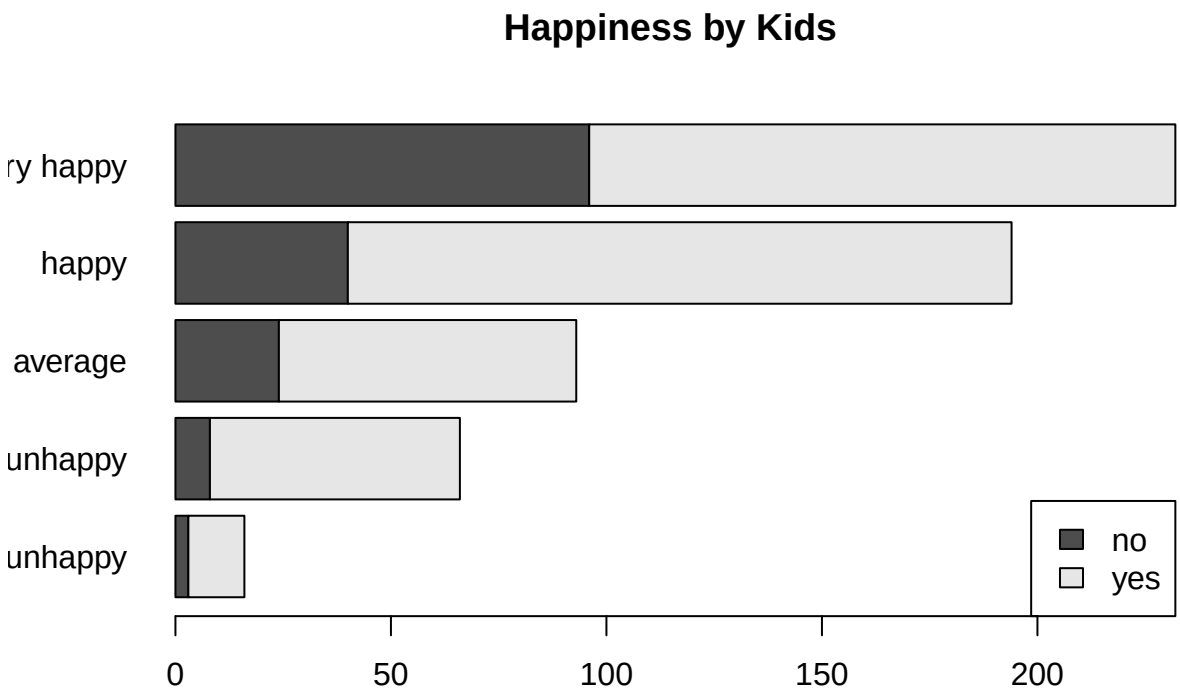
```
##
##                       no        yes
```

```
##   very unhappy 0.01754386 0.03023256
##   unhappy      0.04678363 0.13488372
##   average      0.14035088 0.16046512
##   happy        0.23391813 0.35813953
##   very happy   0.56140351 0.31627907
```

```
#Pie Chart
pie(table(affairs$marriage), col=gray(seq(.2, 1,.2)))
```




```
#Bar plot
barplot(table(affairs$child, affairs$marriage),
        horiz = T, las=1, legend=T, args.legend = c(x="bottomright"),
        main="Happiness by Kids")
```


Happiness by Kids
ry happy
happy
average
unhappy
unhappy
no
yes
0
50
100
150
200