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NOTES ON R

1

Packages

2

Visualization

2.1 Data

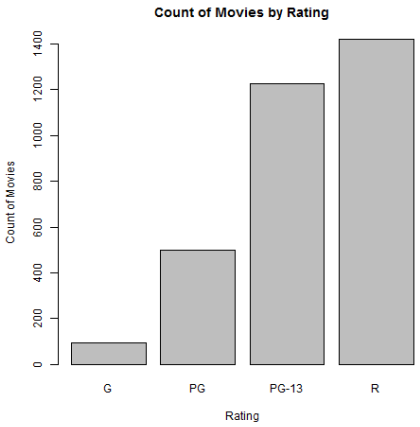
```
movies <- read.csv("data/movies.csv")
head(movies)
```

Title	Year	Rating	Runtime	Critic.Score	Box.Office	Awards	International
The Whole Nine Yards	2000	R	98	45	57.3	FALSE	FALSE
Cirque du Soleil: Journey of Man	2000	G	39	45	13.4	TRUE	FALSE
Gladiator	2000	R	155	76	187.3	TRUE	TRUE
Dinosaur	2000	PG	82	65	135.6	TRUE	FALSE
Big Momma's House	2000	PG-13	99	30	0.5	TRUE	TRUE
Gone in Sixty Seconds	2000	PG-13	118	24	101	TRUE	FALSE

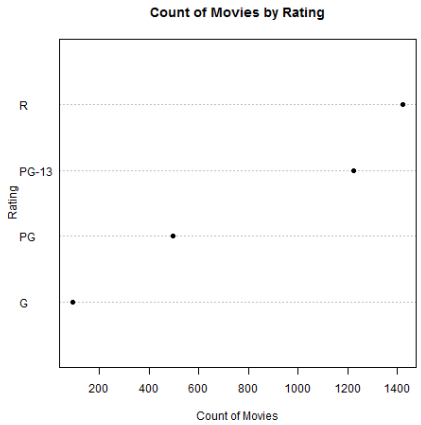
2.2 One Categorical Variable

2.2.1 base

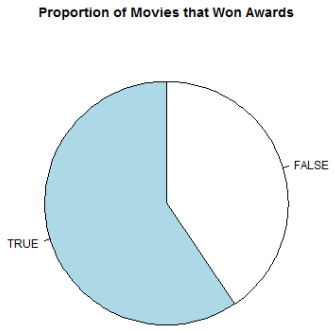
```
movies <- read.csv("data/movies.csv")
plot(
        x = movies$Rating,
        main = "Count of Movies by Rating",
        xlab = "Rating",
        ylab = "Count of Movies")
```




```
movies <- read.csv("data/movies.csv")
dotchart(
        x = table(movies$Rating),
        pch = 16,
        main = "Count of Movies by Rating",
        xlab = "Count of Movies",
        ylab = "Rating")
```




```
movies <- read.csv("data/movies.csv")
pie(
        x = table(movies$Awards),
        clockwise = TRUE,
        main = "Proportion of Movies that Won Awards")
```

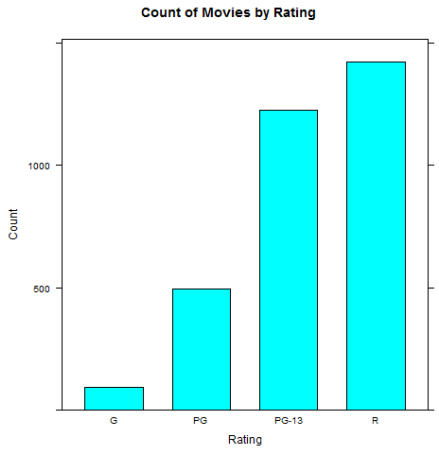


2.2.2 *lattice*

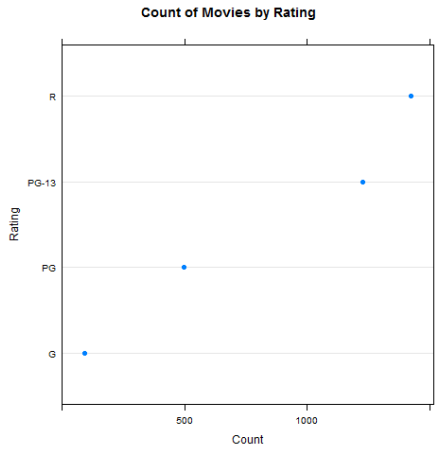
```
library(lattice)
# Create frequency table of ratings
movies <- read.csv("data/movies.csv")
table <- table(movies$Rating)
ratings <- as.data.frame(table)
names(ratings)[1] <- "Rating"
names(ratings)[2] <- "Count"
print(ratings)
```

Rating	Count
G	93
PG	497
PG-13	1225
R	1423

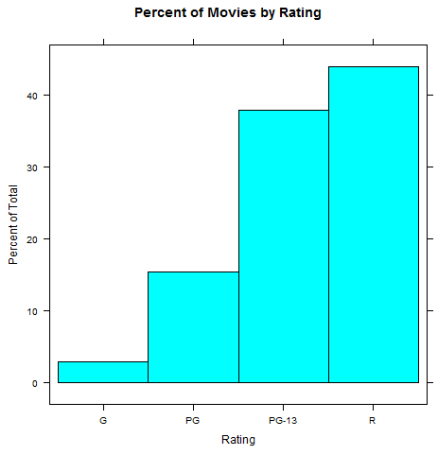
```
library(lattice)
# Create frequency table of ratings
movies <- read.csv("data/movies.csv")
table <- table(movies$Rating)
ratings <- as.data.frame(table)
names(ratings)[1] <- "Rating"
names(ratings)[2] <- "Count"
barchart(
        x = Count ~ Rating,
        data = ratings,
        main = "Count of Movies by Rating",
        xlab = "Rating")
```




```
library(lattice)
# Create frequency table of ratings
movies <- read.csv("data/movies.csv")
table <- table(movies$Rating)
ratings <- as.data.frame(table)
names(ratings)[1] <- "Rating"
names(ratings)[2] <- "Count"
dotplot(
        x = Rating ~ Count,
        data = ratings,
        main = "Count of Movies by Rating",
        ylab = "Rating")
```

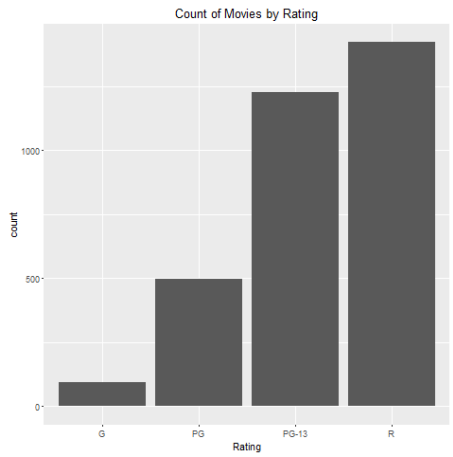



```
library(lattice)
# Create frequency table of ratings
movies <- read.csv("data/movies.csv")
table <- table(movies$Rating)
ratings <- as.data.frame(table)
names(ratings)[1] <- "Rating"
names(ratings)[2] <- "Count"
histogram(
        x = ~Rating,
        data = movies,
        main = "Percent of Movies by Rating")
```

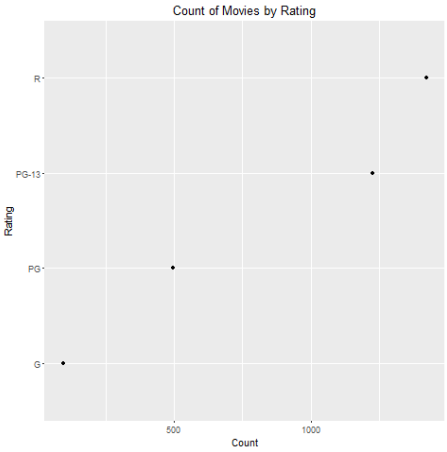


2.2.3 *ggplot2*

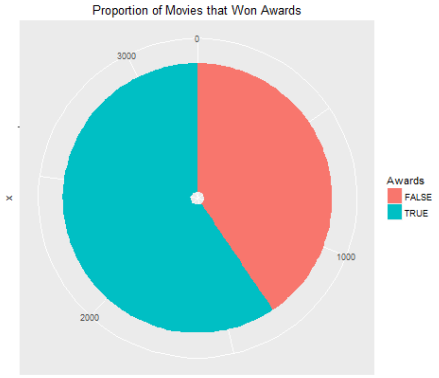
```
library(ggplot2)
movies <- read.csv("data/movies.csv")
ggplot(
                data = movies,
                aes(x = Rating)) +
                geom_bar() +
                ggtitle("Count of Movies by Rating")
```




```
library(ggplot2)
library(lattice)
# Create frequency table of ratings
movies <- read.csv("data/movies.csv")
table <- table(movies$Rating)
ratings <- as.data.frame(table)
names(ratings)[1] <- "Rating"
names(ratings)[2] <- "Count"
ggplot(
        data = ratings,
        aes(x = Rating, y = Count)) +
        geom_point() +
        coord_flip() +
        ggtitle("Count of Movies by Rating")
```



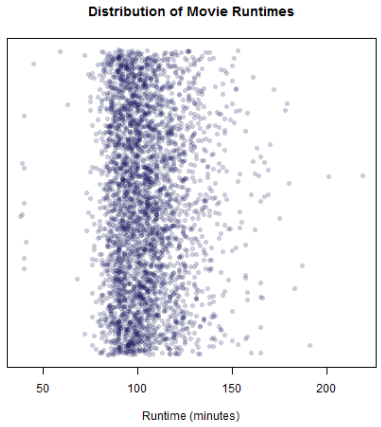

```
library(ggplot2)
movies <- read.csv("data/movies.csv")
ggplot(
        data = movies,
        aes(x = "", fill = Awards)) +
        geom_bar() +
        coord_polar(theta = "y") +
        ggtitle("Proportion of Movies that Won Awards") +
        ylab("")
```



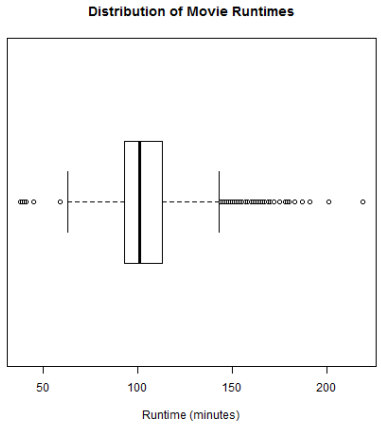
2.3 One Numeric Variable

2.3.1 base

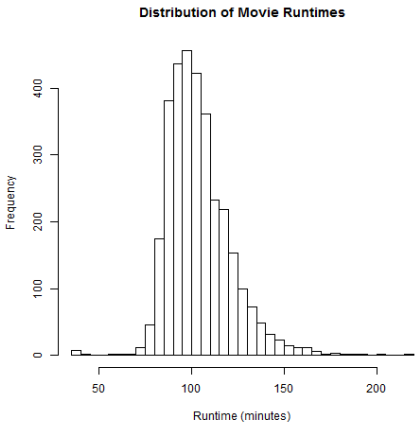
```
movies <- read.csv("data/movies.csv")
plot(
                x = movies$Runtime,
                y = jitter(rep(0, nrow(movies))),
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)",
                ylab = "",
                yaxt = "n",
                pch = 16,
                col = rgb(0, 0, 0.3, 0.2))
```



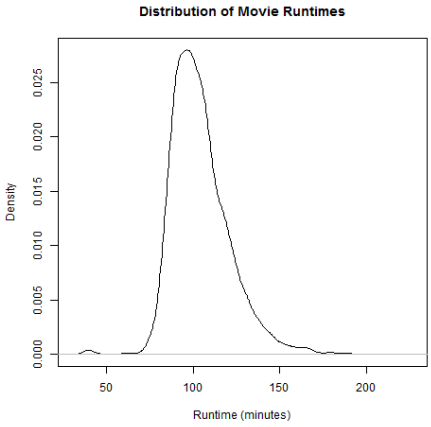

```
movies <- read.csv("data/movies.csv")
boxplot(
                x = movies$Runtime,
                horizontal = TRUE,
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)")
```




```
movies <- read.csv("data/movies.csv")
hist(
                x = movies$Runtime,
                breaks = 30,
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)")
```

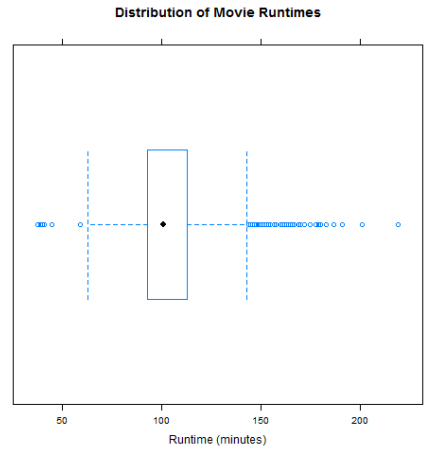



```
movies <- read.csv("data/movies.csv")
plot(
                x = density(movies$Runtime),
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)")
```

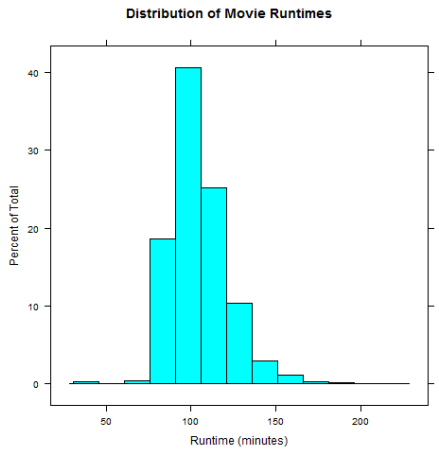


2.3.2 *lattice*

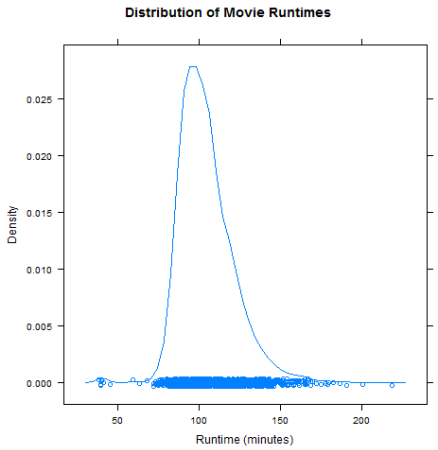
```
movies <- read.csv("data/movies.csv")
library(lattice)
bwplot(
                x = ~Runtime,
                data = movies,
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)")
```




```
movies <- read.csv("data/movies.csv")
library(lattice)
histogram(
                x = ~Runtime,
                data = movies,
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)")
```

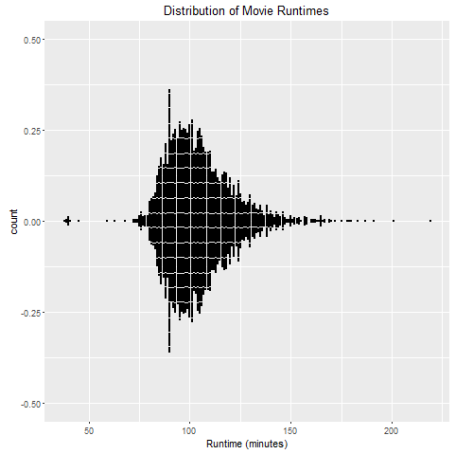



```
movies <- read.csv("data/movies.csv")
library(lattice)
densityplot(
                x = ~Runtime,
                data = movies,
                main = "Distribution of Movie Runtimes",
                xlab = "Runtime (minutes)")
```

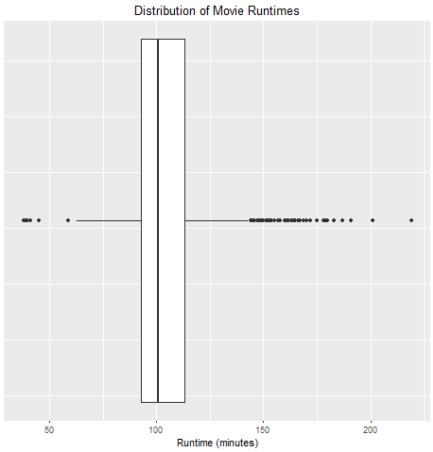


2.3.3 *ggplot2*

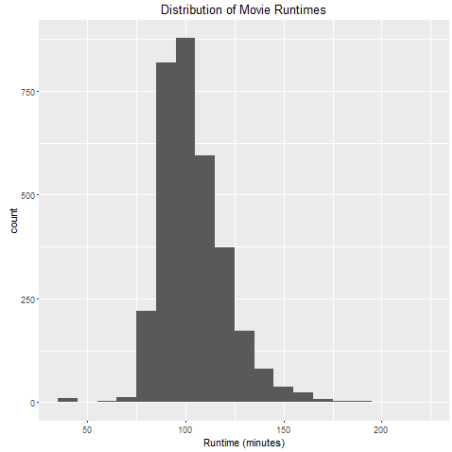
```
library(ggplot2)
movies <- read.csv("data/movies.csv")
ggplot(
                data = movies,
                aes(x = Runtime, stat = "count")) +
                geom_dotplot(
                                binwidth = 1,
                                stackdir = "center") +
                ggtitle("Distribution of Movie Runtimes") +
                xlab("Runtime (minutes)")
```



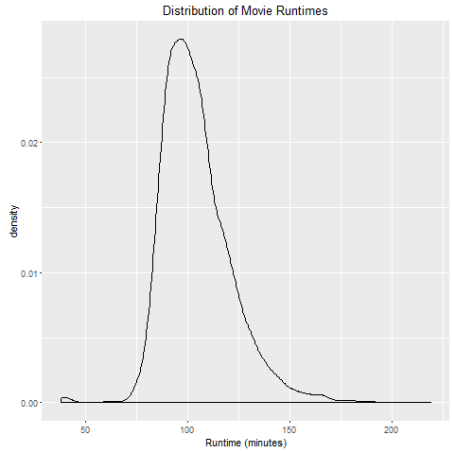

```
library(ggplot2)
movies <- read.csv("data/movies.csv")
ggplot(
                data = movies,
                aes(x = Runtime, y = Runtime)) +
                geom_boxplot() +
                coord_flip() +
                ggtitle("Distribution of Movie Runtimes") +
                xlab("") +
                ylab("Runtime (minutes)") +
                theme(
                                axis.text.y = element_blank(),
                                axis.ticks.y = element_blank())
```




```
library(ggplot2)
movies <- read.csv("data/movies.csv")
ggplot(
                data = movies,
                aes(x = Runtime)) +
                geom_histogram(binwidth = 10) +
                ggtitle("Distribution of Movie Runtimes") +
                xlab("Runtime (minutes)")
```




```
library(ggplot2)
movies <- read.csv("data/movies.csv")
ggplot(
                data = movies,
                aes(x = Runtime)) +
                geom_density() +
                ggtitle("Distribution of Movie Runtimes") +
                xlab("Runtime (minutes)")
```


Distribution of Movie Runtimes
density
0.02
0.01
0.00
50
100
150
200
Runtime (minutes)