Assignment - 1

Session 7 – Basic Statistics

1. Histogram for all variables in a dataset mtcars. Write a program to create histograms for all columns.

Ans: > library(tidyr)

> library(ggplot2)

> mtcars %>% gather() %>% head()

key value

1 mpg 21.0

2 mpg 21.0

3 mpg 22.8

4 mpg 21.4

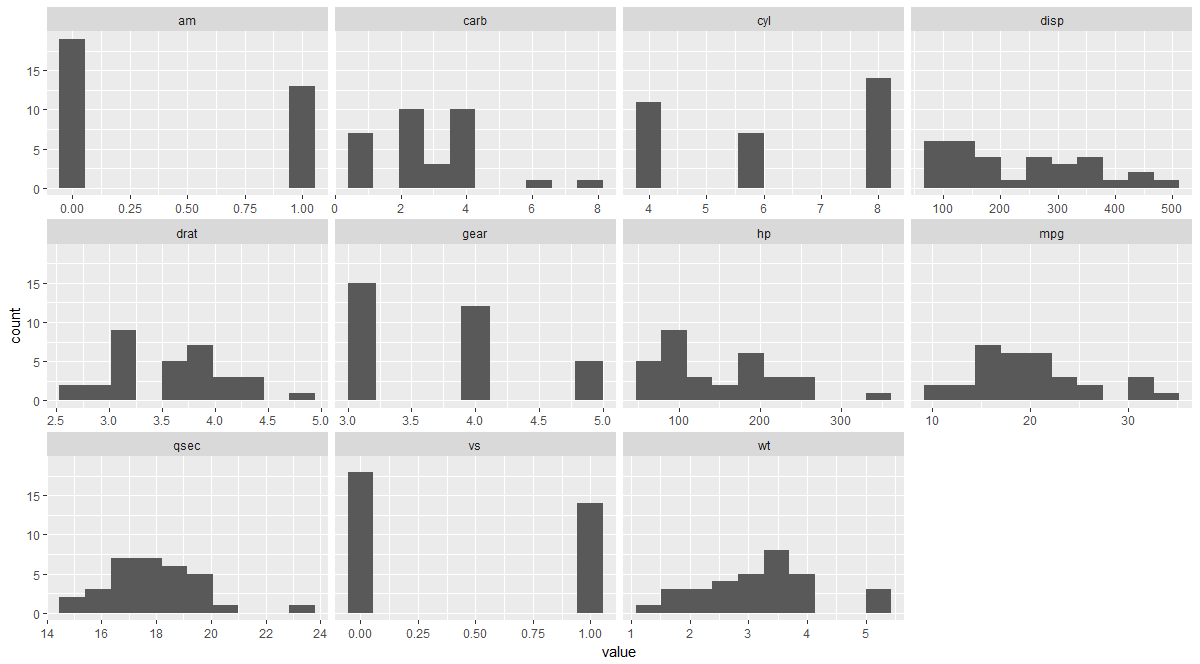
5 mpg 18.7

6 mpg 18.1

> ggplot(gather(mtcars), aes(value)) +

+ geom\_histogram(bins = 10) +

+ facet\_wrap(~key, scales = 'free\_x')



1. Check the probability distribution of all variables in mtcars.

Ans:

> cars\_auto = subset(mtcars, am == 0)

> cars\_gear = subset(mtcars, am == 1)

> dim(mtcars)

[1] 32 11

> > dim(cars\_auto) ; dim(cars\_gear)

Error: unexpected '>' in ">"

> dim(cars\_auto) ; dim(cars\_gear)

[1] 19 11

[1] 13 11

> mean(cars\_auto$mpg); mean(cars\_gear$mpg)

[1] 17.14737

[1] 24.39231

> sd(cars\_auto$mpg) ; sd(cars\_gear$mpg)

[1] 3.833966

[1] 6.166504

> t.test(cars\_gear$mpg, cars\_auto$mpg, paired = F, var.equal = F)

Welch Two Sample t-test

data: cars\_gear$mpg and cars\_auto$mpg

t = 3.7671, df = 18.332, p-value = 0.001374

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

3.209684 11.280194

sample estimates:

mean of x mean of y

24.39231 17.14737

1. Write a program to create boxplot for all variables.

Ans:

> boxplot(mtcars, main = "value of all variables", xlab = "mtcars", col = "blue")

