Lab 01 - Introduction to R and Sweave

Karen Jewell

January 28, 2020

1 Loading data

Loading the 'mtcars' dataset

```
> data(mtcars)
> summary(mtcars)

      mpg             cyl            disp             hp
 Min.   :10.40   Min.   :4.000   Min.   : 71.1   Min.   : 52.0
 1st Qu.:15.43   1st Qu.:4.000   1st Qu.:120.8   1st Qu.: 96.5
 Median :19.20   Median :6.000   Median :196.3   Median :123.0
 Mean   :20.09   Mean   :6.188   Mean   :230.7   Mean   :146.7
 3rd Qu.:22.80   3rd Qu.:8.000   3rd Qu.:326.0   3rd Qu.:180.0
 Max.   :33.90   Max.   :8.000   Max.   :472.0   Max.   :335.0
      drat             wt            qsec             vs
 Min.   :2.760   Min.   :1.513   Min.   :14.50   Min.   :0.0000
 1st Qu.:3.080   1st Qu.:2.581   1st Qu.:16.89   1st Qu.:0.0000
 Median :3.695   Median :3.325   Median :17.71   Median :0.0000
 Mean   :3.597   Mean   :3.217   Mean   :17.85   Mean   :0.4375
 3rd Qu.:3.920   3rd Qu.:3.610   3rd Qu.:18.90   3rd Qu.:1.0000
 Max.   :4.930   Max.   :5.424   Max.   :22.90   Max.   :1.0000
       am             gear            carb
 Min.   :0.0000   Min.   :3.000   Min.   :1.000
 1st Qu.:0.0000   1st Qu.:3.000   1st Qu.:2.000
 Median :0.0000   Median :4.000   Median :2.000
 Mean   :0.4062   Mean   :3.688   Mean   :2.812
 3rd Qu.:1.0000   3rd Qu.:4.000   3rd Qu.:4.000
 Max.   :1.0000   Max.   :5.000   Max.   :8.000
```

2 Data selection

2.1 Cars with automatic transmission

```
> autocars <- mtcars[mtcars$am == 1,]
```

2.2 first 5 rows

```
> autofirst5 <- head (autocars,5)
> library(xtable)
>
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.00	6.00	160.00	110.00	3.90	2.62	16.46	0.00	1.00	4.00	4.00
Mazda RX4 Wag	21.00	6.00	160.00	110.00	3.90	2.88	17.02	0.00	1.00	4.00	4.00
Datsun 710	22.80	4.00	108.00	93.00	3.85	2.32	18.61	1.00	1.00	4.00	1.00
Fiat 128	32.40	4.00	78.70	66.00	4.08	2.20	19.47	1.00	1.00	4.00	1.00
Honda Civic	30.40	4.00	75.70	52.00	4.93	1.61	18.52	1.00	1.00	4.00	2.00

2.3 Mean miles per gallon mpg

```
> cat("MPG: /t", mean(mtcars$mpg))

MPG: /t 20.09062
```

2.4 MPG auto v manual

```
> autompg <- mean (autocars$mpg)
> mancars <- mtcars[mtcars$am==0,]
> manmpg <- mean (mancars$mpg)
> cat("Auto MPG: \t", autompg)

Auto MPG: 	 24.39231

> cat("Man MPG: \t", manmpg)

Man MPG: 	 17.14737
```