

9_BasicPlotsAsNotebook

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Visualising Data with R Studio

The first block of R code in this r Notebook will download any necessary packages, compile where necessary and load them for use in this file.

Load Packages

We include tidyr because it allows us to support tables that are paged (e.g. line 66 when we output the chickwts data).

Change include to TRUE and see what happens when you Knit the output HTML document.

Show Available Data Sets

We should probably comment out this code as it keeps opening and switching to the Viewer window!

Examine Data

Change echo to TRUE and see what happens when you Knit the output HTML document.

```
##      weight      feed
## 1      179 horsebean
## 2      160 horsebean
## 3      136 horsebean
## 4      227 horsebean
## 5      217 horsebean
## 6      168 horsebean
## 7      108 horsebean
## 8      124 horsebean
## 9      143 horsebean
## 10     140 horsebean
```

## 11	309	linseed
## 12	229	linseed
## 13	181	linseed
## 14	141	linseed
## 15	260	linseed
## 16	203	linseed
## 17	148	linseed
## 18	169	linseed
## 19	213	linseed
## 20	257	linseed
## 21	244	linseed
## 22	271	linseed
## 23	243	soybean
## 24	230	soybean
## 25	248	soybean
## 26	327	soybean
## 27	329	soybean
## 28	250	soybean
## 29	193	soybean
## 30	271	soybean
## 31	316	soybean
## 32	267	soybean
## 33	199	soybean
## 34	171	soybean
## 35	158	soybean
## 36	248	soybean
## 37	423	sunflower
## 38	340	sunflower
## 39	392	sunflower
## 40	339	sunflower
## 41	341	sunflower
## 42	226	sunflower
## 43	320	sunflower
## 44	295	sunflower
## 45	334	sunflower
## 46	322	sunflower
## 47	297	sunflower
## 48	318	sunflower
## 49	325	meatmeal
## 50	257	meatmeal
## 51	303	meatmeal
## 52	315	meatmeal
## 53	380	meatmeal
## 54	153	meatmeal
## 55	263	meatmeal
## 56	242	meatmeal
## 57	206	meatmeal
## 58	344	meatmeal
## 59	258	meatmeal
## 60	368	casein
## 61	390	casein
## 62	379	casein
## 63	260	casein
## 64	404	casein

```

## 65      318      casein
## 66      352      casein
## 67      359      casein
## 68      216      casein
## 69      222      casein
## 70      283      casein
## 71      332      casein

## [1] horsebean horsebean horsebean horsebean horsebean horsebean horsebean
## [8] horsebean horsebean horsebean linseed  linseed  linseed  linseed
## [15] linseed  linseed  linseed  linseed  linseed  linseed  linseed
## [22] linseed  soybean  soybean  soybean  soybean  soybean  soybean
## [29] soybean  soybean  soybean  soybean  soybean  soybean  soybean
## [36] soybean  sunflower sunflower sunflower sunflower sunflower sunflower
## [43] sunflower sunflower sunflower sunflower sunflower sunflower meatmeal
## [50] meatmeal meatmeal meatmeal meatmeal meatmeal meatmeal meatmeal
## [57] meatmeal meatmeal meatmeal casein   casein   casein   casein
## [64] casein   casein   casein   casein   casein   casein   casein
## [71] casein

## Levels: casein horsebean linseed meatmeal soybean sunflower

## [1] "weight" "feed"

## 'data.frame': 71 obs. of 2 variables:
## $ weight: num 179 160 136 227 217 168 108 124 143 140 ...
## $ feed : Factor w/ 6 levels "casein","horsebean",...: 2 2 2 2 2 2 2 2 2 2 ...

## weight feed
## 1 179 horsebean
## 2 160 horsebean
## 3 136 horsebean
## 4 227 horsebean
## 5 217 horsebean
## 6 168 horsebean
## 7 108 horsebean
## 8 124 horsebean
## 9 143 horsebean
## 10 140 horsebean

## weight feed
## 60 368 casein
## 61 390 casein
## 62 379 casein
## 63 260 casein
## 64 404 casein
## 65 318 casein
## 66 352 casein
## 67 359 casein
## 68 216 casein
## 69 222 casein
## 70 283 casein
## 71 332 casein

## weight feed
## Min. :108.0 casein :12
## 1st Qu.:204.5 horsebean:10
## Median :258.0 linseed :12

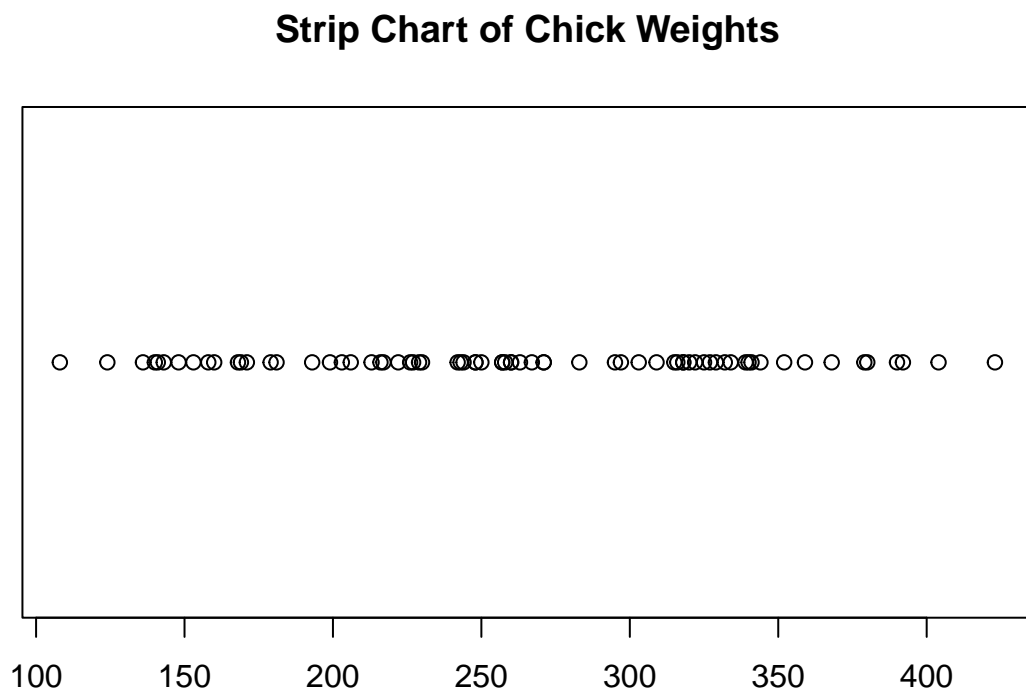
```

```
## Mean      :261.3   meatmeal :11
## 3rd Qu.   :323.5   soybean  :14
## Max.      :423.0   sunflower:12
```

Example - Stripchart

A Stripchart with title (main) and plot character (pch) set. Try typing ?pch in the console and hitting Enter to see help on what difference values for pch will look like.

```
# title and plotting character set
stripchart(chickwts$weight,
           main = "Strip Chart of Chick Weights",
           pch = 21)
```

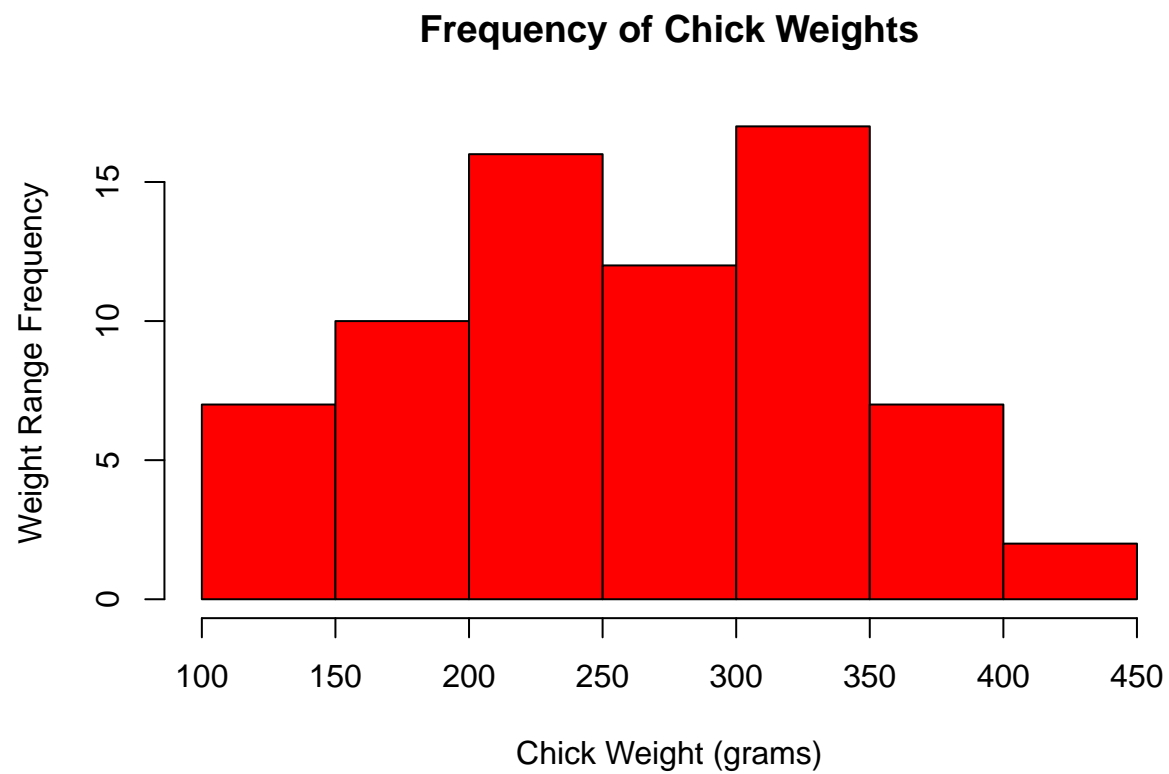


Example - Stripchart

A Histogram with title (main) and x/y labels (xlab, ylab) and color set. Try setting color using rgb() (e.g., col = rgb(1,0,0) or col = "#FF0000").

For more information on HTML Hex Codes click [here](#). To find color palettes that are compatible use one of the color palette pickers located [here](#)

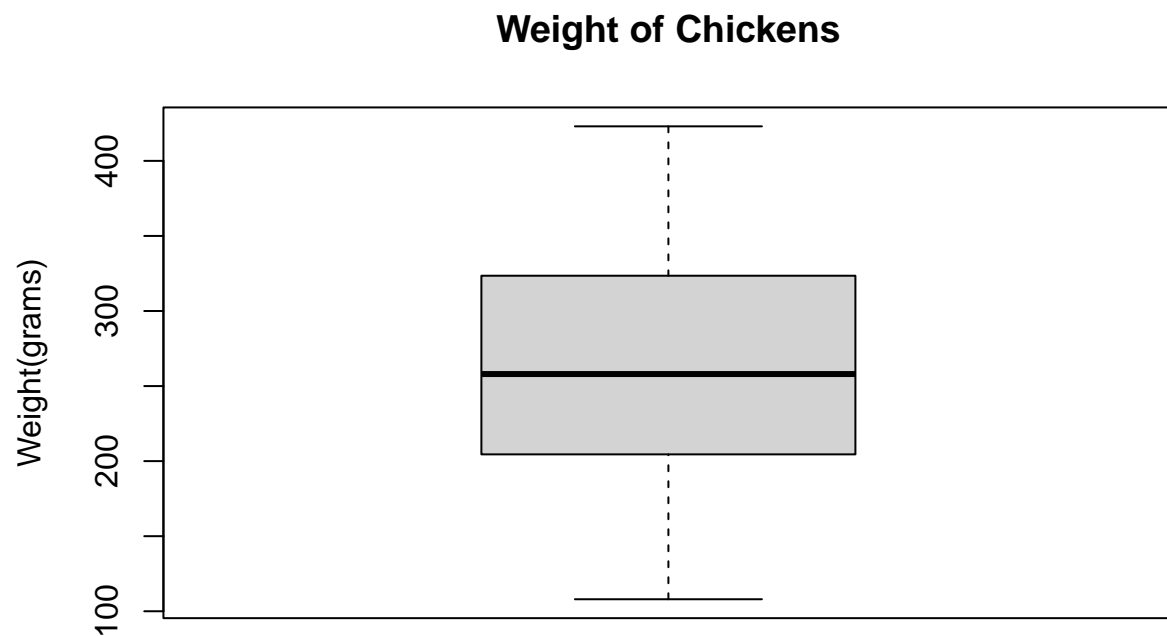
```
# title and xy labels and color
hist(chickwts$weight, main = "Frequency of Chick Weights",
     xlab = "Chick Weight (grams)",
     ylab = "Weight Range Frequency",
     col = "red")
```



Example - Boxplot - 1

A simple Boxplot with title and y-label.

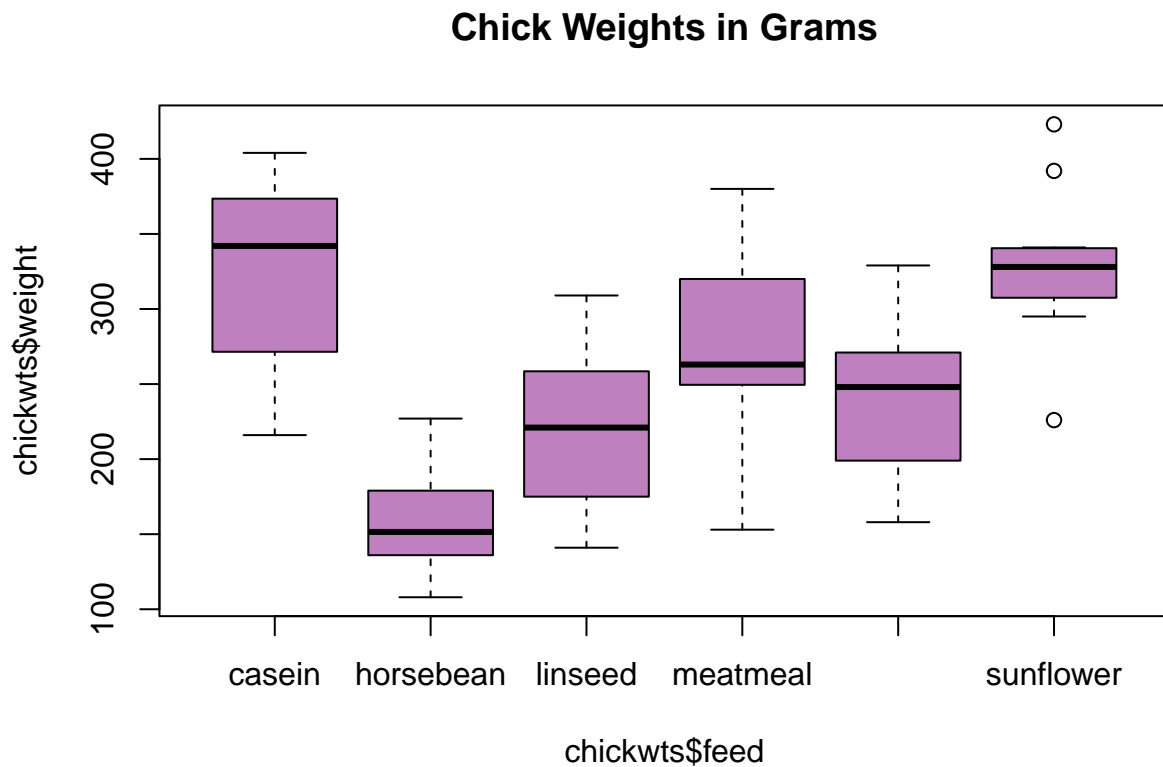
```
# simple box plot  
boxplot(chickwts$weight,  
        main = "Weight of Chickens",  
        ylab = "Weight(grams)")
```



Example - Boxplot - 2

A Boxplot comparing across a number of categories using ~.

```
# box-plot (multiple categories using ~)
boxplot(chickwts$weight~chickwts$feed,
        main = "Chick Weights in Grams",
        col = rgb(0.75, 0.5, 0.75))
```



Example - Boxplot - 2

A Piechart using data defined in two vectors. Title, labels, edges, border, and colors for each pie segment have been set.

```
sunshinePerDay <- c(6, 12, 17, 13)
cities <- c("dublin", "paris", "narvik", "caracas")

# uncomment the parameters (i.e. edges, main, border) to see what each parameter does
pie(x = sunshinePerDay,
    labels = cities,
    edges = 64,
    main = "Hours Sunshine on 21st June 2022",
    border = TRUE,
    col = c("#9CAFB7", "#ADB993", "#D0D38F", "#F6CA83"))
```

Hours Sunshine on 21st June 2022

