9_BasicPlotsAsNotebook

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October, 2022

Contents

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
```

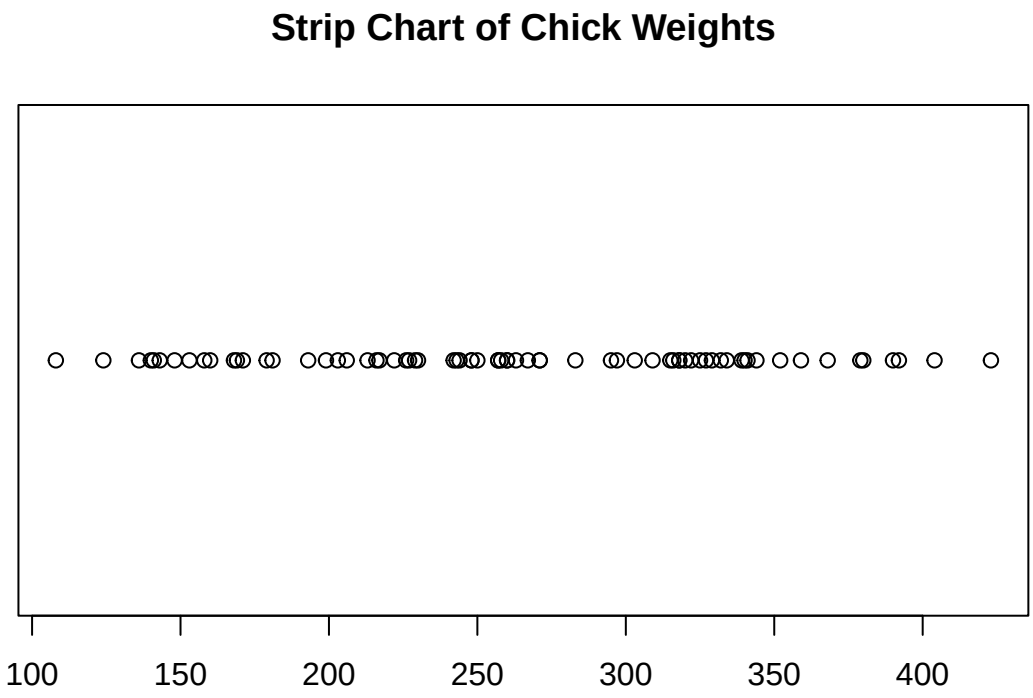
```
##      weight             feed
##  Min.   :108.0   casein   :12
##  1st Qu.:204.5   horsebean:10
##  Median :258.0   linseed  :12
```

```
##  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)
```

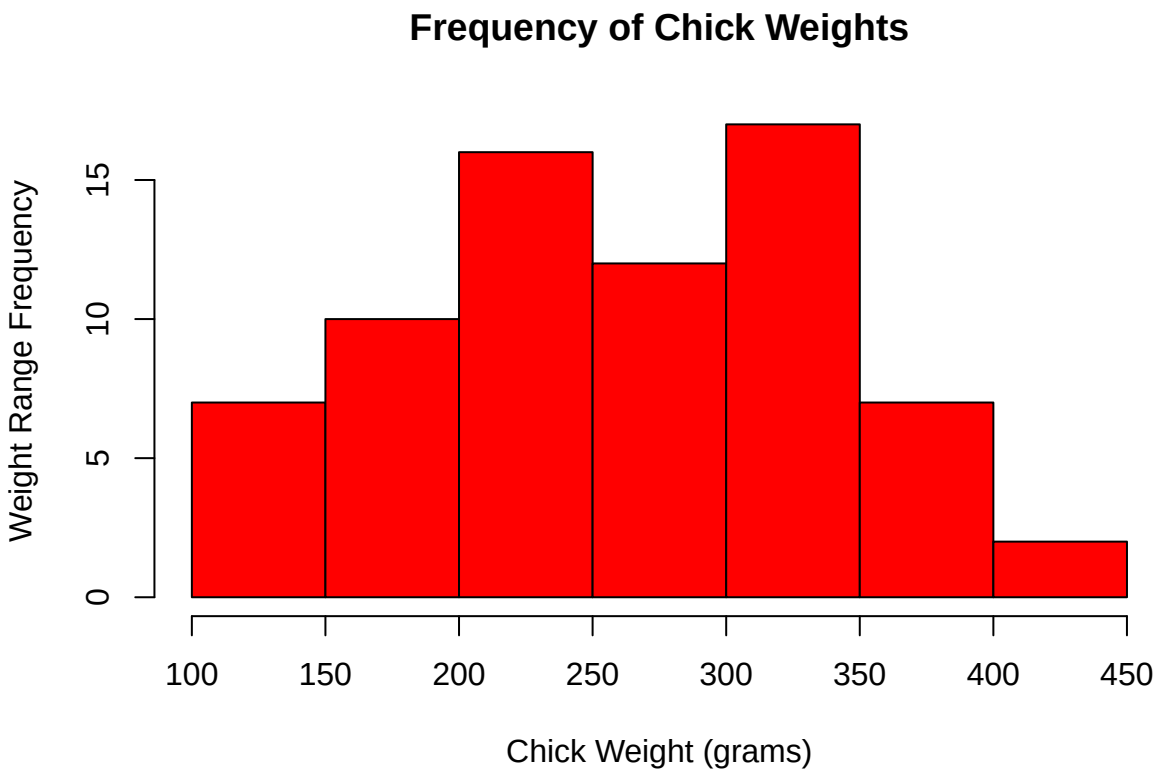


Example - Stripchart

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

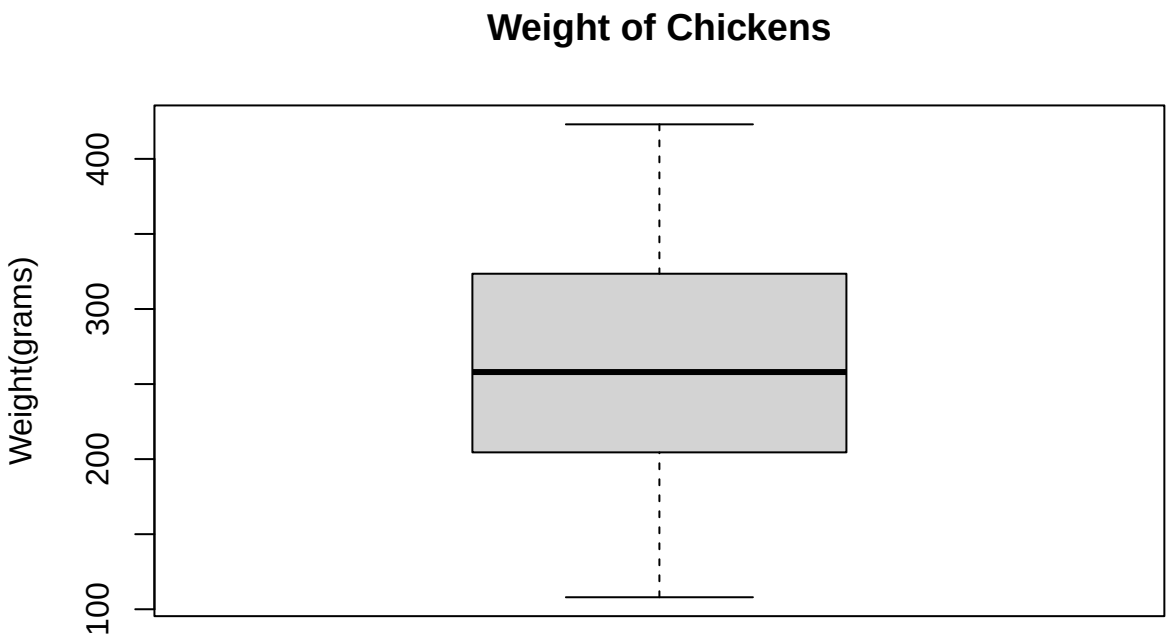
```
# title and xy labels and color
hist(chickwts$weight, main = "Frequency of Chick Weights",
     xlab = "Chick Weight (grams)",
     ylab = "Weight Range Frequency",
     col = "red")
```



Example - Boxplot - 1

A simple Boxplot with title and y-label.

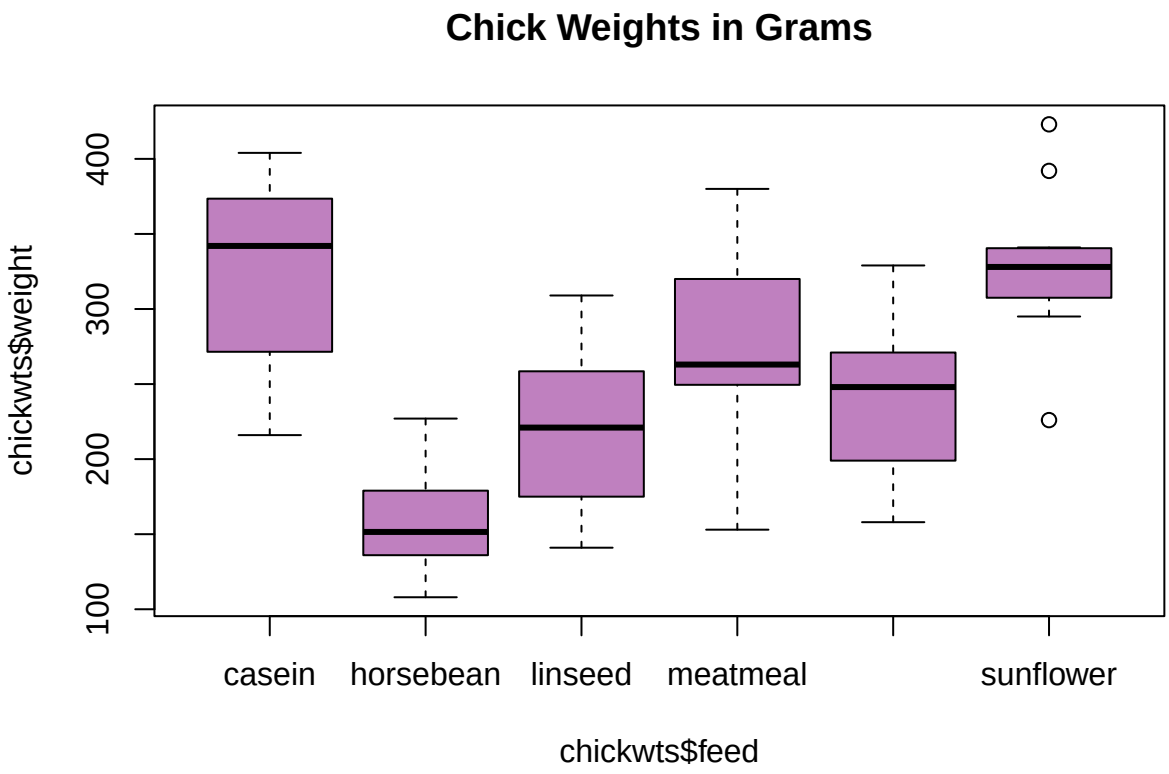
```
# simple box plot
boxplot(chickwts$weight,
        main = "Weight of Chickens",
        ylab = "Weight(grams)")
```



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))
```

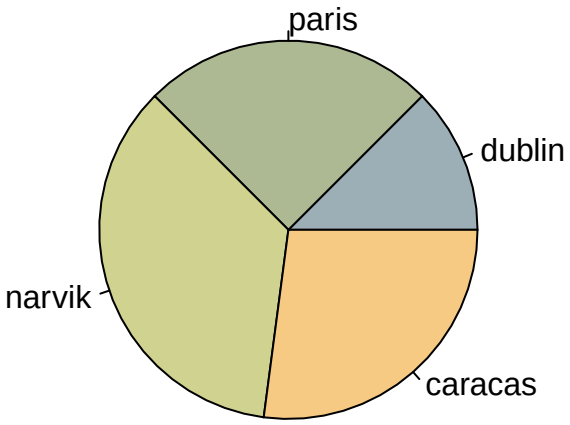


Example - Boxplot - 2

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
paris
dublin
narvik
caracas