Block 1 - RMD operations

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2024-09-02

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

0. Basics of formatting

Text.

New paragraph leave on line empty

0.0 Same

This is a greek letter alpha: α.

Equation for population mean:

$$\mu = \frac{1}{n}\sum_{i=1}^{n} x_1$$

1. Loading the data

Load a csv file

```
kiwi <- readr::read_csv('kiwi.csv')
```

```
## Rows: 700 Columns: 5
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (3): Species_code, Gender, Location
## dbl (2): Weight(kg), Height(cm)
##
```

```
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

Load a delim file

```
kiwi2 <- readr::read_delim('kiwi.csv', delim = ',')
```

```
## Rows: 700 Columns: 5
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (3): Species_code, Gender, Location
## dbl (2): Weight(kg), Height(cm)
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

2. Data examination

To showcase the data:

first 4 rows

```
head(kiwi, 4)
```

```
## # A tibble: 4 x 5
##   Species_code Gender `Weight(kg)` `Height(cm)` Location
##   <chr>        <chr>         <dbl>        <dbl> <chr>
## 1 Tok          M              2.05         36.5 StI
## 2 Tok          F              2.40         40.3 SF
## 3 GS           M              2.01         42.9 NWN
## 4 NIBr         M              1.81         36.1 E
```

last 6 rows

```
tail(kiwi, 6)
```

```
## # A tibble: 6 x 5
##   Species_code Gender `Weight(kg)` `Height(cm)` Location
##   <chr>        <chr>         <dbl>        <dbl> <chr>
## 1 GS           M              2.44         46   CW
## 2 NIBr         F              2.31         39.5 E
## 3 Tok          F              2.41         41.2 StI
## 4 Tok          M              2.49         36.1 NF
## 5 NIBr         M              2.95         34.9 W
## 6 GS           F              3.70         44.2 CW
```

Format the table

```
knitr::kable(tail(kiwi,6))
```

Species_code	Gender	Weight(kg)	Height(cm)	Location
GS	M	2.436	46.0	CW
NIBr	F	2.309	39.5	E
Tok	F	2.414	41.2	StI
Tok	M	2.490	36.1	NF
NIBr	M	2.953	34.9	W
GS	F	3.695	44.2	CW

Find more specific information

```
mean_kiwi_height <- mean(kiwi$`Height(cm)`)
mean_kiwi_height
```

```
## [1] 40.47329
```

```
median_kiwi_wight <- median(kiwi$`Weight(kg)`)
median_kiwi_wight
```

```
## [1] 2.529
```

```
standard_diviation_kiwi_height <- sd(kiwi$`Height(cm)`)
standard_diviation_kiwi_height
```

```
## [1] 3.934774
```

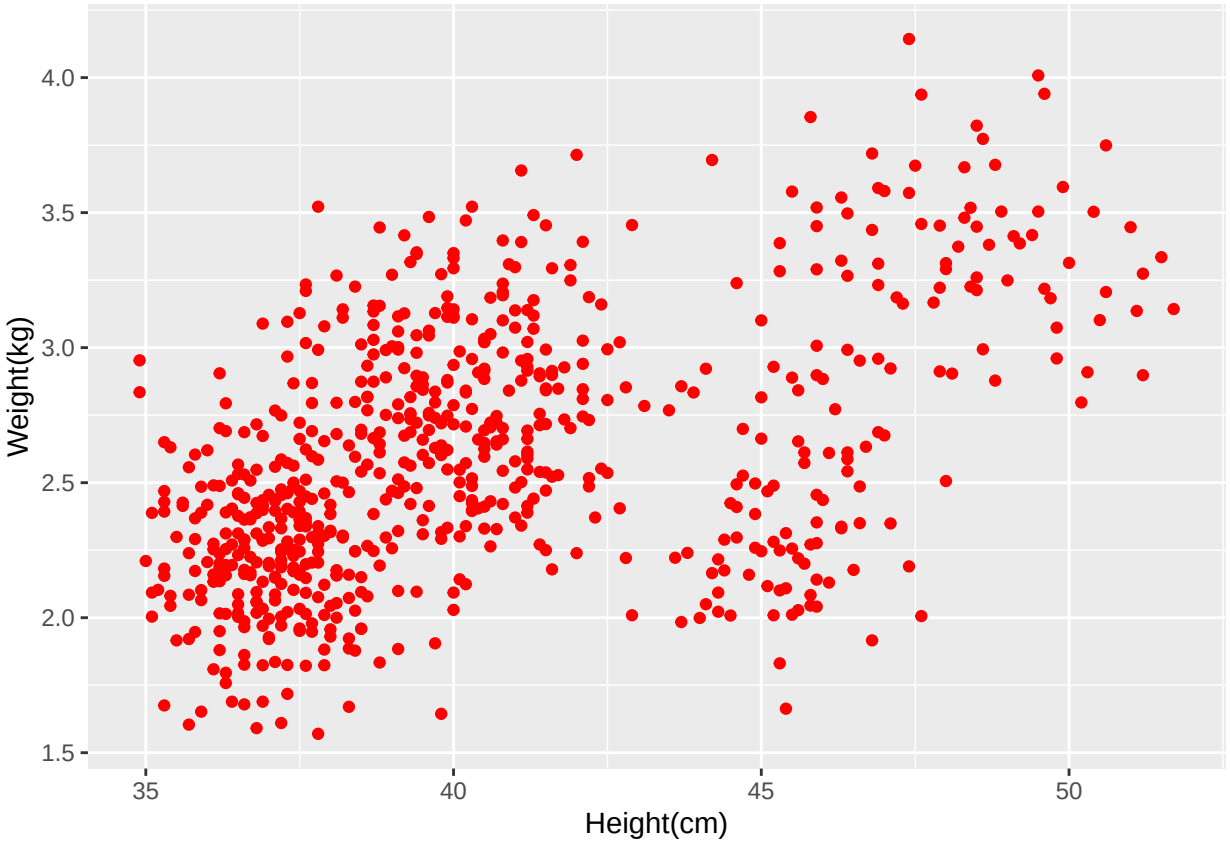
```
summary(kiwi)
```

```
##  Species_code          Gender            Weight(kg)      Height(cm)
##  Length:700         Length:700         Min.   :1.570   Min.   :34.90
##  Class :character   Class :character   1st Qu.:2.242   1st Qu.:37.40
##  Mode  :character   Mode  :character   Median :2.529   Median :39.50
##                                        Mean   :2.598   Mean   :40.47
##                                        3rd Qu.:2.922   3rd Qu.:42.20
##                                        Max.   :4.143   Max.   :51.70
##    Location
##  Length:700
##  Class :character
##  Mode  :character
##
##
##
```

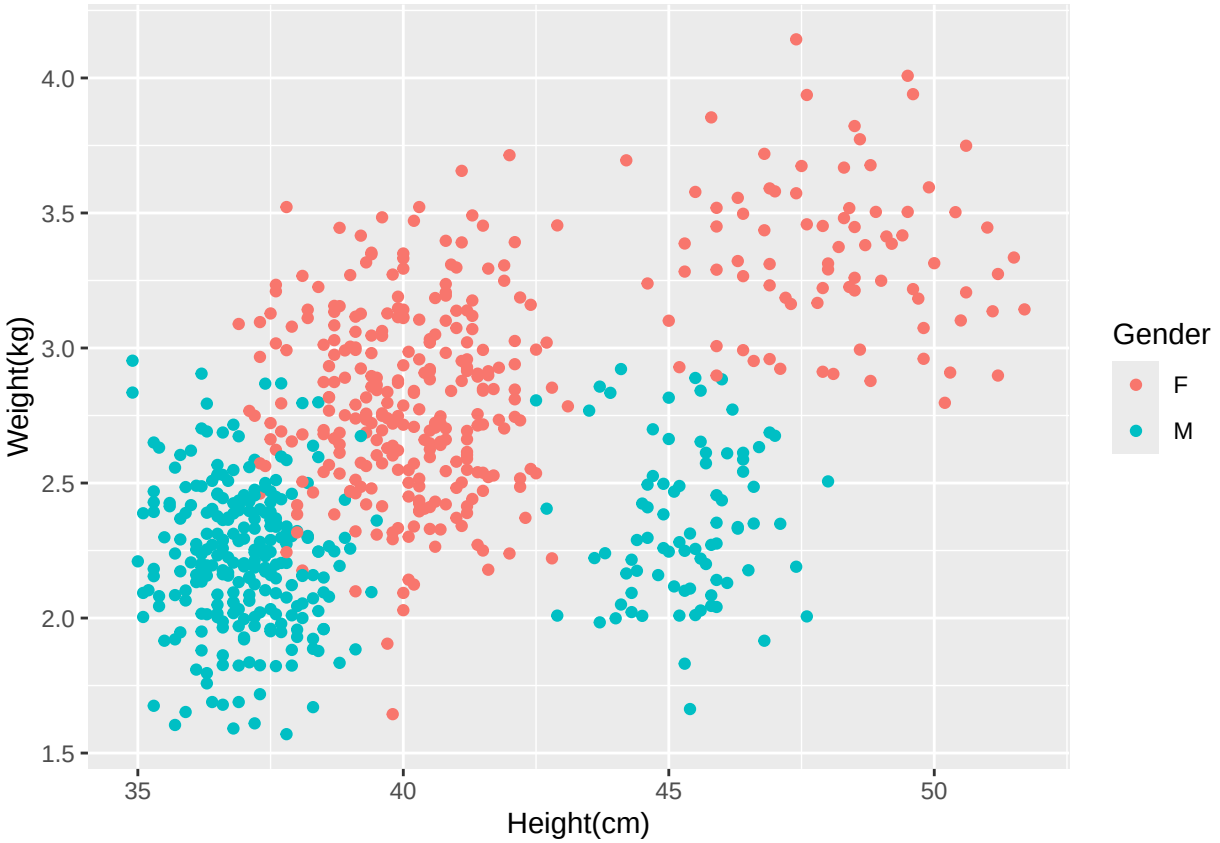
3. Plotting data

ggplot package

```
ggplot(data = kiwi) +
  geom_point(mapping = aes(x =`Height(cm)`, y = `Weight(kg)`), colour = 'red')
```




```
ggplot(data = kiwi) +
  geom_point(mapping = aes(x =`Height(cm)`, y = `Weight(kg)`, colour = Gender))
```



4. Simple math

```
a <- 25 + 4/23 - 124 * 2
a
```

```
## [1] -222.8261
```

```
pi
```

```
## [1] 3.141593
```

```
sin(pi)
```

```
## [1] 1.224606e-16
```

```
factorial(14)
```

```
## [1] 87178291200
```

```r
vector <- c(4,5,7,1,5)
vector
```

```
## [1] 4 5 7 1 5
```

```r
text_vector <- c('d','n')
text_vector
```

```
## [1] "d" "n"
```