

Descriptive_freq.R

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```
# Descriptive_freq.R
# Frequency distribution for the elytra data

# Load necessary libraries
library(gmodels)

# Read in data set
elytra <- read.table(header=T,colClasses=c("character","numeric"),text="
sex  length
M    4.9
F    5.2
M    4.9
F    4.2
F    5.7
M    4.6
M    3.8
F    5.4
F    4.0
F    4.5
M    4.9
F    5.2
M    4.9
F    4.2
F    5.7
M    4.6
M    3.8
F    5.4
F    4.0
F    4.5
F    5.2
F    4.9
M    5.0
M    4.4
M    5.0
M    5.0
M    4.9
F    4.5
F    4.5
M    5.1
F    5.5
M    4.8
F    4.9
M    4.8
M    4.5
M    4.5
M    4.4
M    5.2
```

M	4.1
F	5.0
M	4.4
F	4.9
M	4.7
M	4.4
F	4.8
F	4.5
M	4.0
M	3.4
F	5.5
M	4.7
M	4.8
F	4.8
F	3.7
M	5.3
M	4.6
F	4.8
M	4.5
M	5.0
M	4.4
F	4.6
M	4.4
M	4.9
F	5.3
F	5.0
F	4.7
F	5.2
M	5.0
M	5.0
M	4.8
M	5.8
F	5.7
F	5.2
M	4.9
F	5.1
F	5.3
F	5.3
F	5.9
F	5.3
M	4.5
F	5.2
M	5.1
F	4.6
M	4.8
M	3.5
F	4.6
F	5.3
M	5.2
F	4.8
M	5.1
M	5.2
M	4.9

```

M 5.3
M 5.2
F 4.9
F 5.6
M 5.0
M 5.0
F 5.1
M 5.1
F 5.5
M 5.1
F 4.8
F 4.9
F 5.0
M 4.9
M 5.0
F 5.0
M 4.9
M 4.8
F 5.2
F 4.8
M 4.7
F 5.1
M 4.5
M 5.0
F 5.4
F 4.6
M 4.0
M 4.2
F 5.2
F 4.6
M 5.0
M 3.7
M 4.6
M 4.0
M 5.1
F 4.4
M 4.8
M 4.6
F 3.7
")

# Classify insects into two groups by size
elytra$size <- ifelse(elytra$length<5.0,"small","large")

# Print the data
elytra

```

```

##      sex length size
## 1      M    4.9 small
## 2      F    5.2 large
## 3      M    4.9 small
## 4      F    4.2 small
## 5      F    5.7 large
## 6      M    4.6 small

```

## 7	M	3.8 small
## 8	F	5.4 large
## 9	F	4.0 small
## 10	F	4.5 small
## 11	M	4.9 small
## 12	F	5.2 large
## 13	M	4.9 small
## 14	F	4.2 small
## 15	F	5.7 large
## 16	M	4.6 small
## 17	M	3.8 small
## 18	F	5.4 large
## 19	F	4.0 small
## 20	F	4.5 small
## 21	F	5.2 large
## 22	F	4.9 small
## 23	M	5.0 large
## 24	M	4.4 small
## 25	M	5.0 large
## 26	M	5.0 large
## 27	M	4.9 small
## 28	F	4.5 small
## 29	F	4.5 small
## 30	M	5.1 large
## 31	F	5.5 large
## 32	M	4.8 small
## 33	F	4.9 small
## 34	M	4.8 small
## 35	M	4.5 small
## 36	M	4.5 small
## 37	M	4.4 small
## 38	M	5.2 large
## 39	M	4.1 small
## 40	F	5.0 large
## 41	M	4.4 small
## 42	F	4.9 small
## 43	M	4.7 small
## 44	M	4.4 small
## 45	F	4.8 small
## 46	F	4.5 small
## 47	M	4.0 small
## 48	M	3.4 small
## 49	F	5.5 large
## 50	M	4.7 small
## 51	M	4.8 small
## 52	F	4.8 small
## 53	F	3.7 small
## 54	M	5.3 large
## 55	M	4.6 small
## 56	F	4.8 small
## 57	M	4.5 small
## 58	M	5.0 large
## 59	M	4.4 small
## 60	F	4.6 small

## 61	M	4.4 small
## 62	M	4.9 small
## 63	F	5.3 large
## 64	F	5.0 large
## 65	F	4.7 small
## 66	F	5.2 large
## 67	M	5.0 large
## 68	M	5.0 large
## 69	M	4.8 small
## 70	M	5.8 large
## 71	F	5.7 large
## 72	F	5.2 large
## 73	M	4.9 small
## 74	F	5.1 large
## 75	F	5.3 large
## 76	F	5.3 large
## 77	F	5.9 large
## 78	F	5.3 large
## 79	M	4.5 small
## 80	F	5.2 large
## 81	M	5.1 large
## 82	F	4.6 small
## 83	M	4.8 small
## 84	M	3.5 small
## 85	F	4.6 small
## 86	F	5.3 large
## 87	M	5.2 large
## 88	F	4.8 small
## 89	M	5.1 large
## 90	M	5.2 large
## 91	M	4.9 small
## 92	M	5.3 large
## 93	M	5.2 large
## 94	F	4.9 small
## 95	F	5.6 large
## 96	M	5.0 large
## 97	M	5.0 large
## 98	F	5.1 large
## 99	M	5.1 large
## 100	F	5.5 large
## 101	M	5.1 large
## 102	F	4.8 small
## 103	F	4.9 small
## 104	F	5.0 large
## 105	M	4.9 small
## 106	M	5.0 large
## 107	F	5.0 large
## 108	M	4.9 small
## 109	M	4.8 small
## 110	F	5.2 large
## 111	F	4.8 small
## 112	M	4.7 small
## 113	F	5.1 large
## 114	M	4.5 small

```
## 115 M 5.0 large
## 116 F 5.4 large
## 117 F 4.6 small
## 118 M 4.0 small
## 119 M 4.2 small
## 120 F 5.2 large
## 121 F 4.6 small
## 122 M 5.0 large
## 123 M 3.7 small
## 124 M 4.6 small
## 125 M 4.0 small
## 126 M 5.1 large
## 127 F 4.4 small
## 128 M 4.8 small
## 129 M 4.6 small
## 130 F 3.7 small
```

```
# Tabulate data into frequencies
CrossTable(elytra$sex,elytra$size)
```

```
##
##
##      Cell Contents
## |-----|
## |                      N |
## | Chi-square contribution |
## |      N / Row Total |
## |      N / Col Total |
## |      N / Table Total |
## |-----|
##
##
## Total Observations in Table:  130
##
##
##      | elytra$size
##      | large | small | Row Total |
## -----|-----|-----|-----|
##      F |      31 |      29 |          60 |
##      |      1.242 |      0.911 |          |
##      |      0.517 |      0.483 |      0.462 |
##      |      0.564 |      0.387 |          |
##      |      0.238 |      0.223 |          |
## -----|-----|-----|-----|
##      M |      24 |      46 |          70 |
##      |      1.065 |      0.781 |          |
##      |      0.343 |      0.657 |      0.538 |
##      |      0.436 |      0.613 |          |
##      |      0.185 |      0.354 |          |
## -----|-----|-----|-----|
## Column Total |      55 |      75 |          130 |
##      |      0.423 |      0.577 |          |
## -----|-----|-----|-----|
##
##
```