

normal_quantile_plot.R

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```
# normal_quantile_plot.R
# Fitting the normal to elytra data
# Load necessary libraries
library(ggplot2)
library(psych)

##
## Attaching package: 'psych'

## The following objects are masked from 'package:ggplot2':
##
##      %+%, alpha

# 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
")

```

```

# Print the data
elytra

```

```

##      sex length
## 1      M    4.9
## 2      F    5.2
## 3      M    4.9

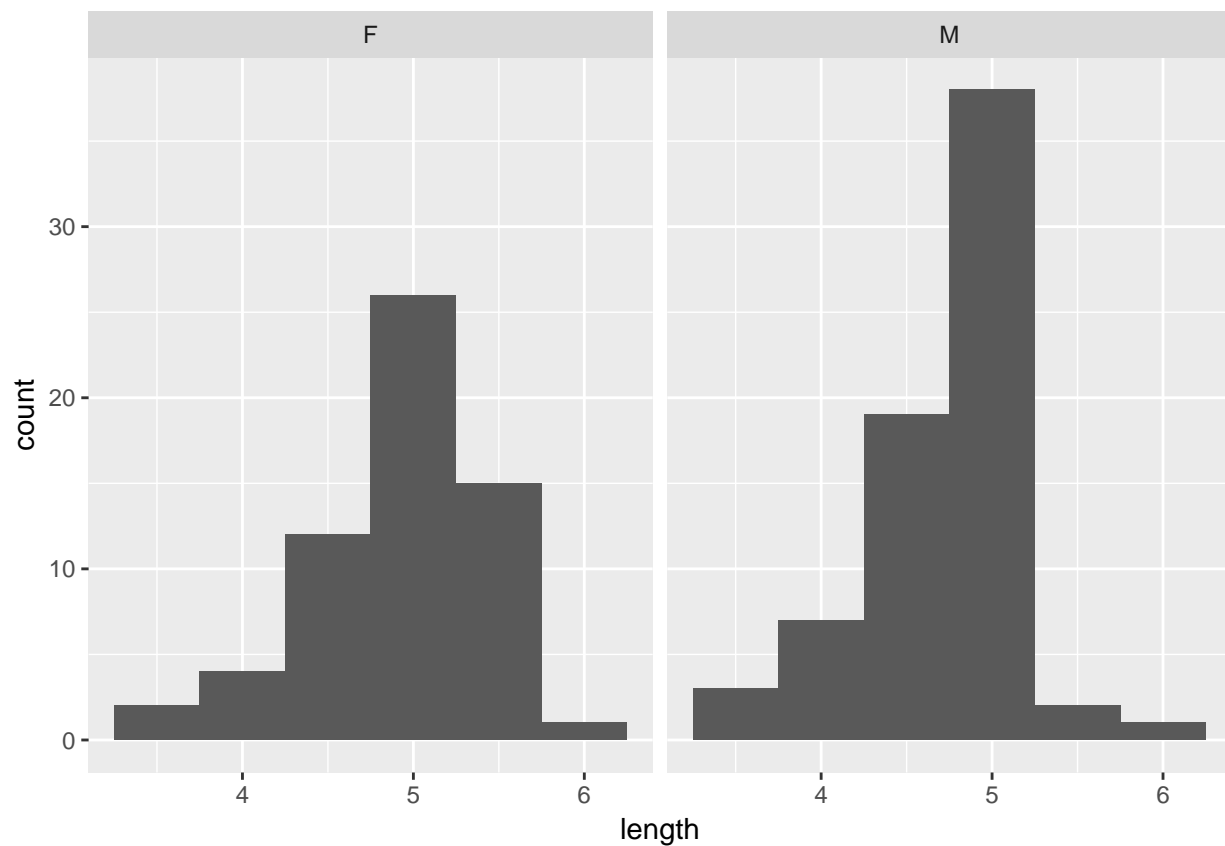
```

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

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

```
## 112 M 4.7
## 113 F 5.1
## 114 M 4.5
## 115 M 5.0
## 116 F 5.4
## 117 F 4.6
## 118 M 4.0
## 119 M 4.2
## 120 F 5.2
## 121 F 4.6
## 122 M 5.0
## 123 M 3.7
## 124 M 4.6
## 125 M 4.0
## 126 M 5.1
## 127 F 4.4
## 128 M 4.8
## 129 M 4.6
## 130 F 3.7
```

```
# Graphics using ggplot2
ggplot(elytra,aes(length))+
geom_histogram(binwidth=0.5)+
facet_grid(.~sex)
```



```
# Descriptive statistics
attach(elytra)
```

```
describeBy(length,group=sex)
```

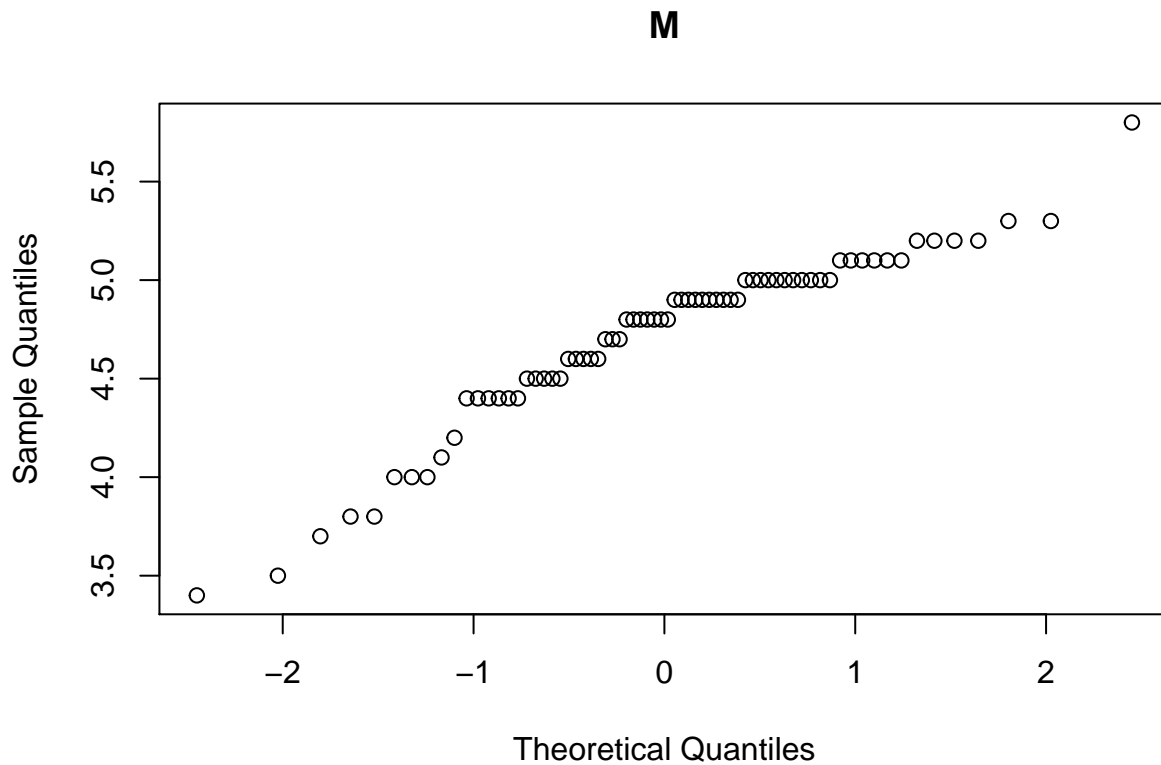
```
##
## Descriptive statistics by group
## group: F
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## X1     1 60 4.94 0.49      5    4.97 0.44 3.7 5.9   2.2 -0.5    -0.05 0.06
## -----
## group: M
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## X1     1 70 4.71 0.45      4.8    4.76 0.3 3.4 5.8   2.4 -0.86    0.74 0.05
```

```
detach(elytra)
```

```
# Normal quantile plots
```

```
males <- subset(elytra,subset=sex=="M",length)
```

```
qqnorm(males$length,main="M")
```



```
females <- subset(elytra,subset=sex=="F",length)
```

```
qqnorm(females$length,main="F")
```

F

