

# EX1markdown

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## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

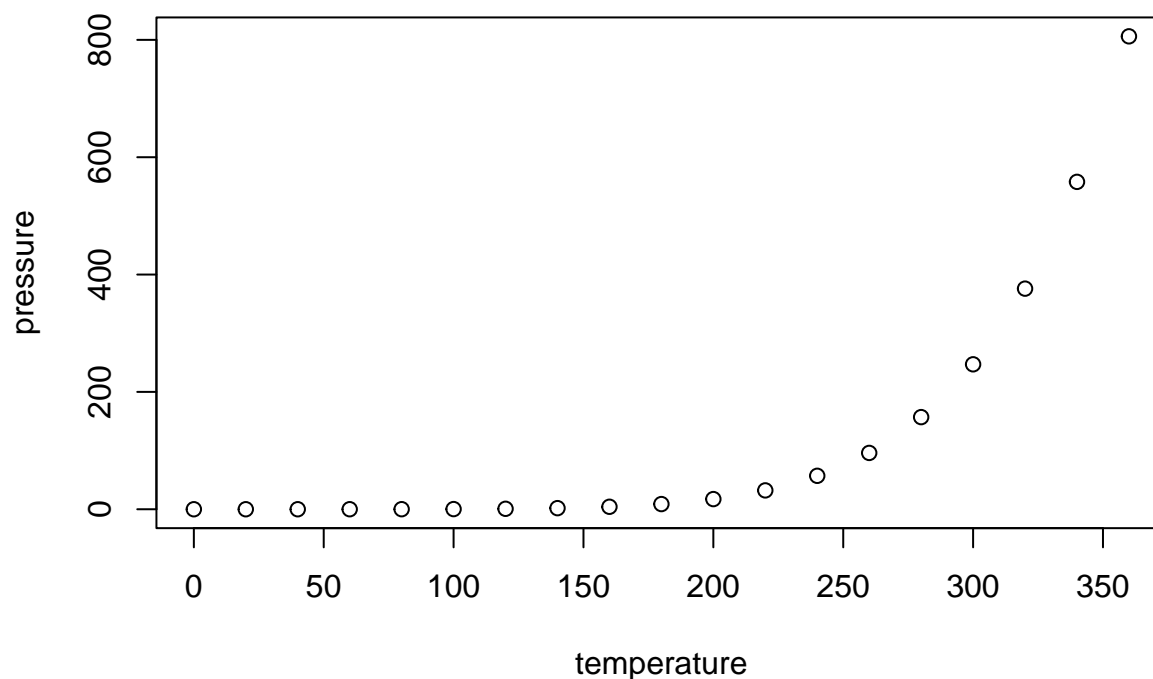
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   : 2.00
## 1st Qu.:12.0    1st Qu.: 26.00
## Median :15.0    Median : 36.00
## Mean   :15.4    Mean   : 42.98
## 3rd Qu.:19.0    3rd Qu.: 56.00
## Max.   :25.0    Max.   :120.00
```

## Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

## Setting up

Remove all the objects in the environment read the data skip, the number of lines of the data file to skip before beginning to read data. `row.names`: giving the column of the table which contains the row names,

```
rm(list = ls())
forbes2000 = read.csv("Forbes2000.csv", row.names = 1, skip=3)
head(forbes2000)
```

##	rank	name	country	category	sales	profits
## 1	1	Citigroup	United States	Banking	94.71	17.85
## 2	2	General Electric	United States	Conglomerates	134.19	15.59
## 3	3	American Intl Group	United States	Insurance	76.66	6.46
## 4	4	ExxonMobil	United States	Oil & gas operations	222.88	20.96
## 5	5	BP	United Kingdom	Oil & gas operations	232.57	10.27
## 6	6	Bank of America	United States	Banking	49.01	10.81

##	assets	marketvalue
## 1	1264.03	255.30
## 2	626.93	328.54
## 3	647.66	194.87
## 4	166.99	277.02
## 5	177.57	173.54
## 6	736.45	117.55

(a)

Find the top 10 ranked companies, the companies with the 10 maximum sales, and the companies with the market value greater than 174 billion USD

```
attach(forbes2000)
```

```
name[rank <= 10]
```

```
## [1] "Citigroup"          "General Electric"  "American Intl Group"
## [4] "ExxonMobil"         "BP"               "Bank of America"
## [7] "HSBC Group"         "Toyota Motor"     "Fannie Mae"
## [10] "Wal-Mart Stores"
```

```
name[marketvalue >= 174]
```

```
## [1] "Citigroup"          "General Electric"  "American Intl Group"
## [4] "ExxonMobil"         "HSBC Group"       "Wal-Mart Stores"
## [7] "Pfizer"            "Microsoft"        "Intel"
## [10] "Vodafone"
```

```
name[sales > sort(sales,decreasing = TRUE)[10]]
```

```
## [1] "General Electric"  "ExxonMobil"
## [3] "BP"               "Toyota Motor"
## [5] "Wal-Mart Stores"  "Royal Dutch/Shell Group"
## [7] "DaimlerChrysler"  "General Motors"
## [9] "Ford Motor"
```

(b)

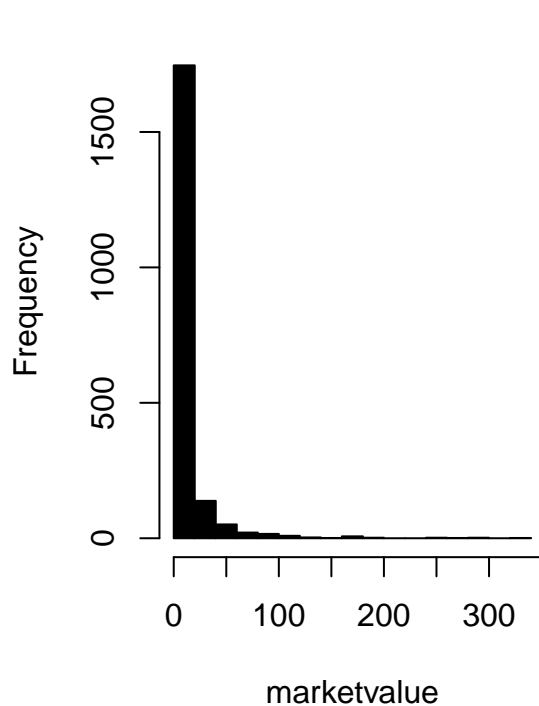
Plot the histograms for marketvalue and log(marketvalue)

```
par(mfrow=c(1,2))
```

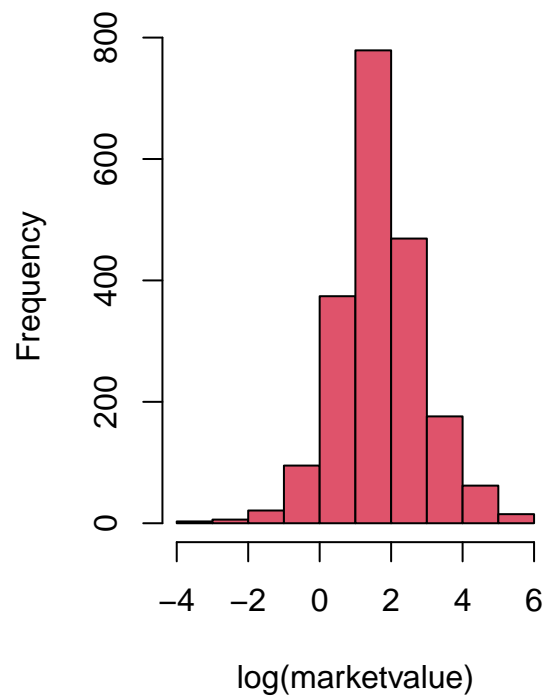
```
hist(marketvalue,main='histogram of market values',col=1)
```

```
hist(log(marketvalue),main='histogram of log market values',col=2)
```

histogram of market values



histogram of log market values



(c)

Compare the outcomes from `mean(profits)` and `mean(profits, na.rm=T)`

```
mean(profits)
```

```
## [1] NA
```

```
mean(profits, na.rm = TRUE)
```

```
## [1] 0.3811328
```

(d)

Median profit for the companies in US and UK separately

```
median(profits[country=='United States'], na.rm = TRUE)
```

```
## [1] 0.24
```

```
median(profits[country=='United Kingdom'], na.rm=TRUE)
```

```
## [1] 0.205
```

(e)

Find all German companies with negative profit

```
name[country == 'Germany' & profits < 0]
```

```
## [1] "Allianz Worldwide"      "Deutsche Telekom"
## [3] "E.ON"                  "HVB-HypoVereinsbank"
## [5] "Commerzbank"           "Infineon Technologies"
## [7] "BHW Holding"           "Bankgesellschaft Berlin"
## [9] "W&W-Wustenrot"         "mg technologies"
## [11] "Nurnberger Beteiligungs" "SPAR Handels"
## [13] "Mobilcom"
```

(f)

To which business category do most of the Bermuda island companies belong

```
table(category[country == 'Bermuda'])
```

```
##
##           Banking           Capital goods           Conglomerates
##              1              1              2
## Food drink & tobacco           Food markets           Insurance
##              1              1              10
##           Media Oil & gas operations Software & services
##              1              2              1
```



Figure 1: A cat picture from google

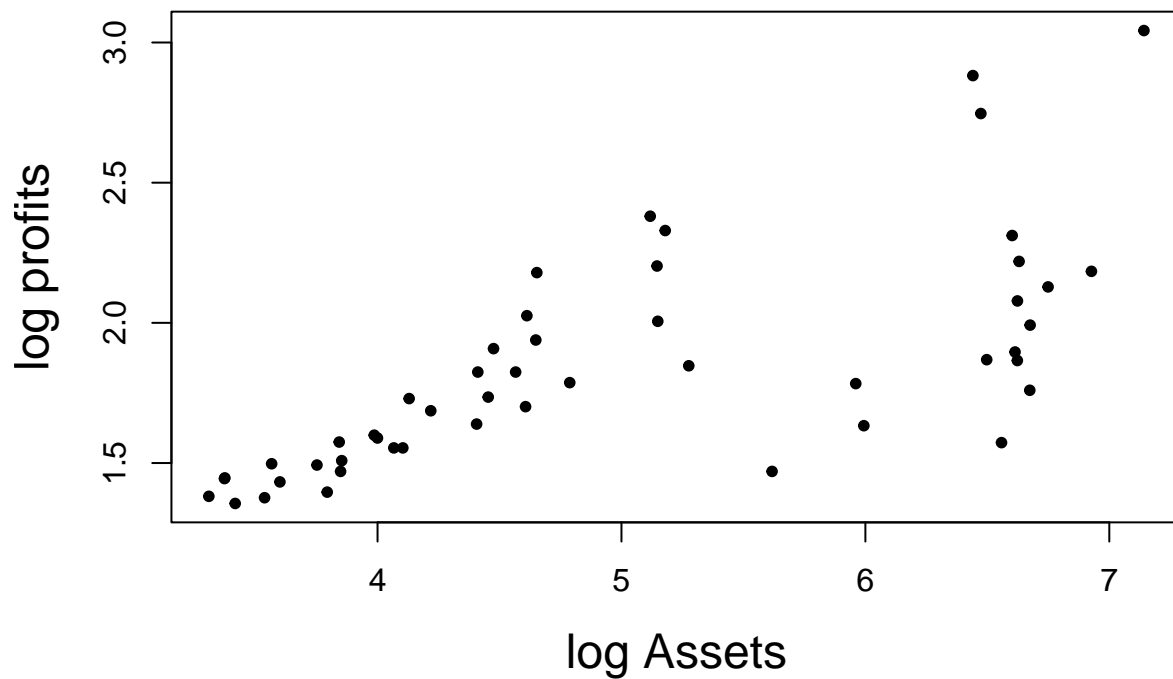
(g)

For the 50 companies with the highest profits, plot profits against assets, using some suitable transformation for each variable if appropriate.

```
profits_sort <- sort(profits,decreasing = TRUE)[1:50]
asset_sort <- assets[profits >= profits_sort[50] & !is.na(profits)]
```

cex the size of point cex.lab the size of label pch the style of points

```
plot(log(asset_sort),log(profits_sort),
     xlab='log Assets',ylab = 'log profits',
     cex.lab=1.5,pch=20)
```



remember to detach when you finish analysis with the data set

```
detach()
```