

Worksheet 2

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```
library(dplyr)
library(kableExtra)
library("HSAUR3")
data("Forbes2000")
attach(Forbes2000)
dim(Forbes2000)
```

```
## [1] 2000      8
```

```
colnames(Forbes2000)
```

```
## [1] "rank"      "name"      "country"   "category"  "sales"
## [6] "profits"   "assets"    "marketvalue"
```

```
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
```

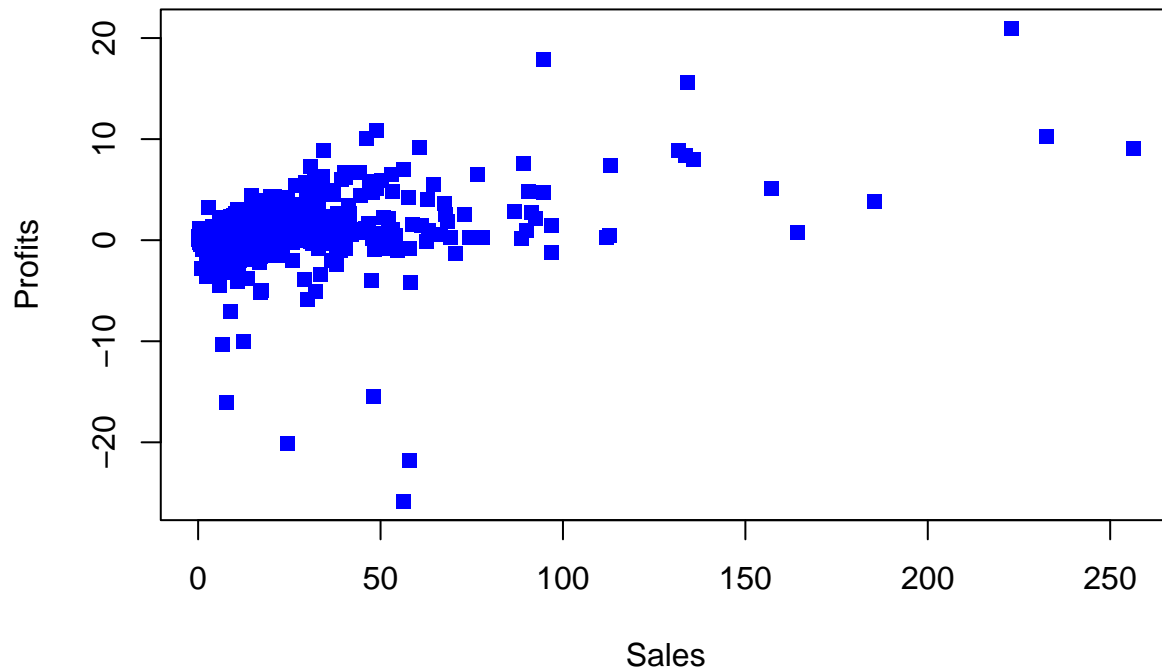
```
#Return data types
```

```
str(Forbes2000)
```

```
## 'data.frame':   2000 obs. of  8 variables:
## $ rank      : int  1 2 3 4 5 6 7 8 9 10 ...
## $ name      : chr  "Citigroup" "General Electric" "American Intl Group" "ExxonMobil" ...
## $ country   : Factor w/ 61 levels "Africa","Australia",...: 60 60 60 60 56 60 56 28 60 60 ...
## $ category  : Factor w/ 27 levels "Aerospace & defense",...: 2 6 16 19 19 2 2 8 9 20 ...
## $ sales     : num  94.7 134.2 76.7 222.9 232.6 ...
## $ profits   : num  17.85 15.59 6.46 20.96 10.27 ...
## $ assets    : num  1264 627 648 167 178 ...
## $ marketvalue: num  255 329 195 277 174 ...
```

```
plot(profits~sales,col = c("blue"), pch = 15, main = "Profit v. Sales", xlab = "Sales", ylab = "Profits")
```

Profit v. Sales

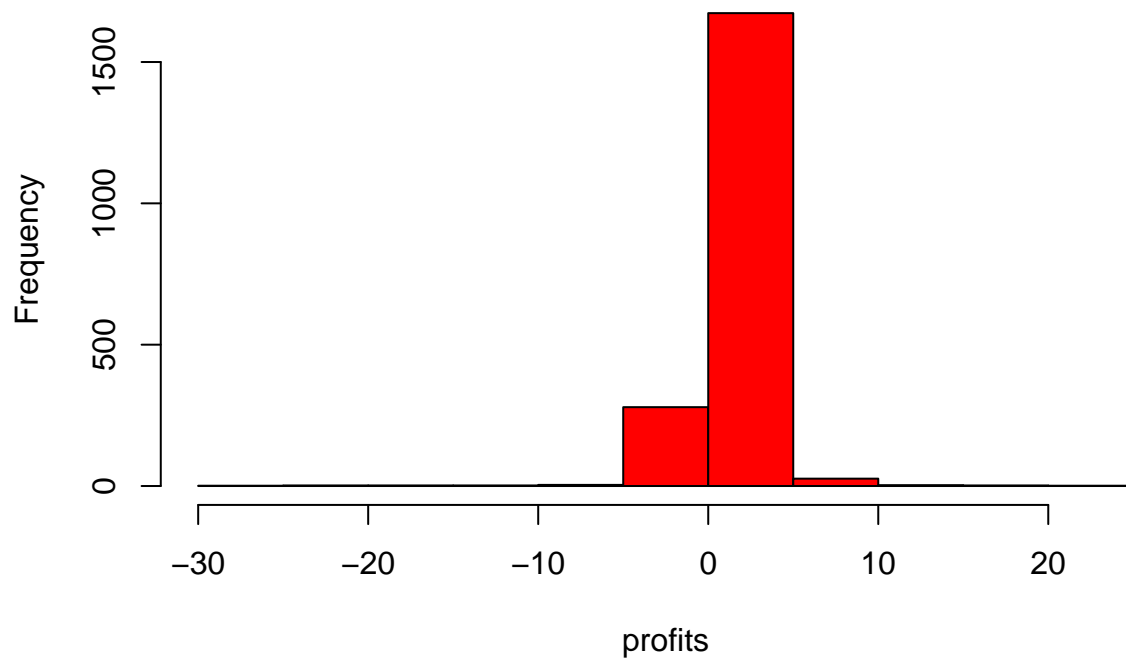


```
summary(sales)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.010   2.018   4.365   9.697   9.547  256.330
```

```
hist(profits, main = "Profits", col = "red")
```

Profits



```
dataR <- Forbes2000[1:15,1:3]
print(dataR)
```

##	rank	name	country
## 1	1	Citigroup	United States
## 2	2	General Electric	United States
## 3	3	American Intl Group	United States
## 4	4	ExxonMobil	United States
## 5	5	BP	United Kingdom
## 6	6	Bank of America	United States
## 7	7	HSBC Group	United Kingdom
## 8	8	Toyota Motor	Japan
## 9	9	Fannie Mae	United States
## 10	10	Wal-Mart Stores	United States
## 11	11	UBS	Switzerland
## 12	12	ING Group	Netherlands
## 13	13	Royal Dutch/Shell Group	Netherlands/ United Kingdom
## 14	14	Berkshire Hathaway	United States
## 15	15	JP Morgan Chase	United States

```
#dataReduced <- Forbes2000 %>% filter(c(1:15)) %>% select(c(1:3))
```

```
#mean profits by country
```

```
meanpc <- Forbes2000 %>% group_by(country) %>% summarize(Mean = mean(profits))
```

```
medianmc <- Forbes2000 %>% group_by(category) %>% summarize(Median = median(marketvalue))
```

```
#Tables
```

```
kable(meanpc) %>% kable_styling(font_size = 6)
```

```
kable(medianmc) %>% kable_styling(font_size = 6)
```

country	Mean
Africa	-0.0050000
Australia	NA
Australia/ United Kingdom	1.1750000
Austria	0.1075000
Bahamas	0.2000000
Belgium	0.3933333
Bermuda	0.4555000
Brazil	0.4520000
Canada	0.4160714
Cayman Islands	0.1480000
Chile	0.1625000
China	0.6216000
Czech Republic	0.2100000
Denmark	0.5220000
Finland	0.6409091
France	0.1169841
France/ United Kingdom	-2.8300000
Germany	-0.0381538
Greece	0.1833333
Hong Kong/China	0.3665000
Hungary	0.2750000
India	0.3470370
Indonesia	0.3842857
Ireland	0.4850000
Islands	0.7400000
Israel	0.0987500
Italy	0.1834146
Japan	0.0223734
Jordan	0.2300000
Kong/China	1.1900000
Korea	0.0300000
Liberia	0.2800000
Luxembourg	-0.1250000
Malaysia	0.2131250
Mexico	0.2005882
Netherlands	-0.0389286
Netherlands/ United Kingdom	5.3200000
New Zealand	0.4200000
Norway	0.6312500
Pakistan	0.4100000
Panama/ United Kingdom	1.1800000
Peru	0.1100000
Philippines	0.1100000
Poland	0.2800000
Portugal	0.2214286
Russia	1.2391667
Singapore	0.2237500
South Africa	0.4220000
South Korea	0.3466667
Spain	0.4048276
Sweden	0.1838462
Switzerland	0.4044118
Taiwan	0.1622857
Thailand	0.1822222
Turkey	0.2258333
United Kingdom	NA
United Kingdom/ Australia	1.6400000
United Kingdom/ Netherlands	0.1400000
United Kingdom/ South Africa	-0.1000000
United States	NA
Venezuela	0.1200000

category	Median
Aerospace & defense	7.700
Banking	3.130
Business services & supplies	4.730
Capital goods	5.240
Chemicals	5.405
Conglomerates	6.890
Construction	3.040
Consumer durables	4.380
Diversified financials	4.455
Drugs & biotechnology	11.810
Food drink & tobacco	5.350
Food markets	5.790
Health care equipment & services	5.240
Hotels restaurants & leisure	4.410
Household & personal products	7.305
Insurance	4.785
Materials	3.850
Media	7.370
Oil & gas operations	7.030
Retailing	4.415
Semiconductors	11.705
Software & services	8.480
Technology hardware & equipment	6.520
Telecommunications services	8.450
Trading companies	1.120
Transportation	4.085
Utilities	6.345