Lab 1: Exploratory Analysis of CEO Salary Data

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Introduction

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Univariate Analysis of Key Variables

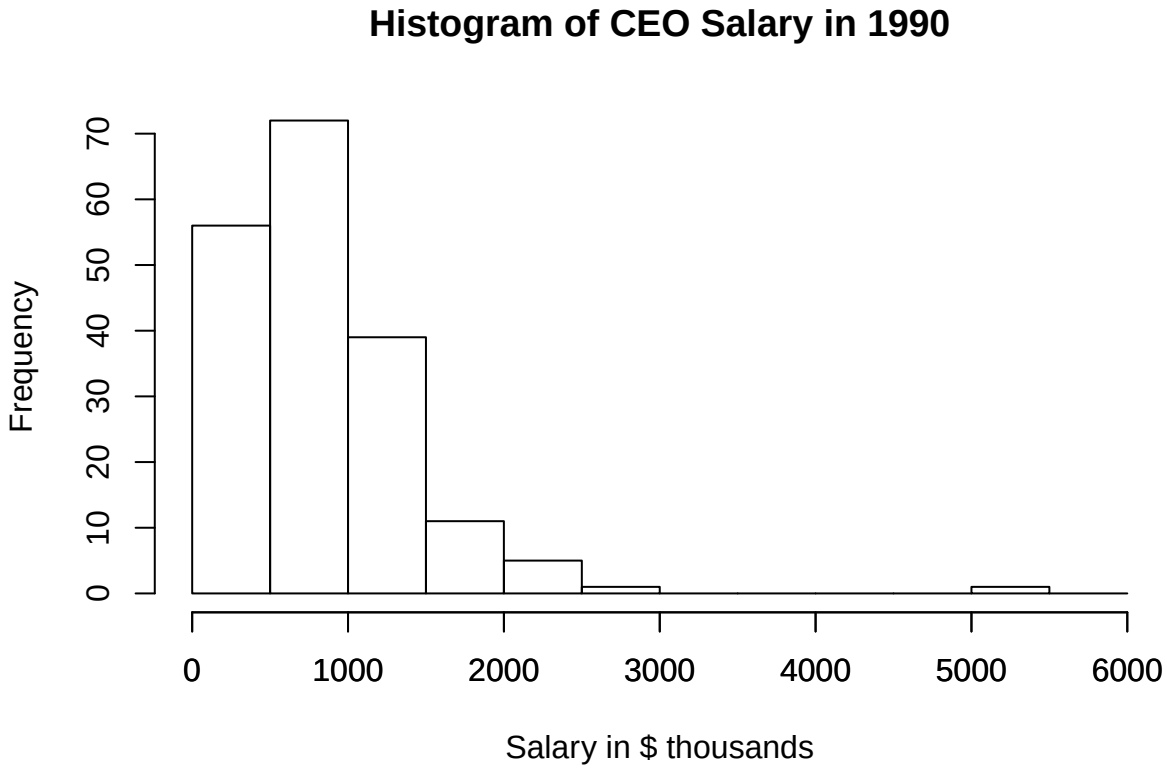
In this section we will perform a univariate analysis of each of the variables in this dataset.

```
setwd("~/Desktop/MIDS/Statistics_for_Data_Science/stats_lab1")
ceosal <- load("ceo_w203.RData", ceo.env <- new.env())
ceo.df <- ceo.env[["CEO"]]
```

Salary

The CEO salary distribution is strongly skewed right.

```
hist(ceo.df$salary, main = "Histogram of CEO Salary in 1990",
     xlab = "Salary in $ thousands", breaks = seq(0, 6000, by = 500))
axis(1, at = seq(0, 6000, by = 1000))
```



Median salary is $697 thousand, and there is one extreme outlier at $5299 thousand.

```
summary(ceo.df$salary)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   100.0   467.0   697.0   852.9  1101.0  5299.0
```

Age

CEO age peaks between 50 and 65 years old, but ranges all the way from 21 to 86.

```
hist(ceo.df$age, breaks = 14, main = "Histogram of CEO Age", xlab = "Age")
```


```
summary(ceo.df$age)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   21.00   51.00   57.00   55.78   61.00   86.00
```

The variance is large:

```
var(ceo.df$age)
```

```
## [1] 85.37996
```

College

College is a dummy variable that takes a value of 1 if the CEO is a college graduate and 0 otherwise.

```
pct.college <- (sum(ceo.df$college) / length(ceo.df$college))
```

96.2% of the CEOs in this dataset are college graduates.

Grad

Grad is a dummy variable that takes a value of 1 if the CEO holds an advanced degree and 0 otherwise.

```
pct.grad <- (sum(ceo.df$grad) / length(ceo.df$grad))
```

55.1% of the CEOs in this dataset are college graduates.

Note: Should we mention there are 2 CEOs with an advanced degree but no college degree? (Can that be correct?)

Key Bivariate Relationships

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Relationship 1

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Possible Secondary Variables

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Potential Confounding Effects

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Variable Coding Issues and Missing Values

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Conclusion

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