Chap2

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First, set working directory. 'data' is a table with two columns and same number of rows, and should be numeric. Columns have headers indicating the names of the variables. User will also input desired variable names in double quotes

```
data <- read.csv("chap2.csv", header = FALSE, skip = 1)
colnames(data) = c("MemorySet", "ReactionTime")
```

View the data.

```
knitr::kable(xtable(data))
```

MemorySet	ReactionTime
1	433
1	435
1	434
1	441
1	457
3	519
3	511
3	513
3	520
3	537
5	598
5	584
5	606
5	605
5	607
7	666
7	674
7	683
7	685
7	692

Calculate the mean for all columns

```
summarise_all(data,mean)
```

```
##   MemorySet ReactionTime
## 1         4          560
```

Calculate the standard deviation for all columns

```
summarise_all(data,sd)
```

```
##   MemorySet ReactionTime
## 1  2.294157     92.22398
```

Replace 'var1' and 'var2' to an appropriate first and second column name using CTRL+F. **Only check off 'Match case' to avoid overwriting additional code.**

```
column = colnames(data)
colnames(data) <- c("V1", "V2")
var1 = data$V1
var2 = data$V2
```

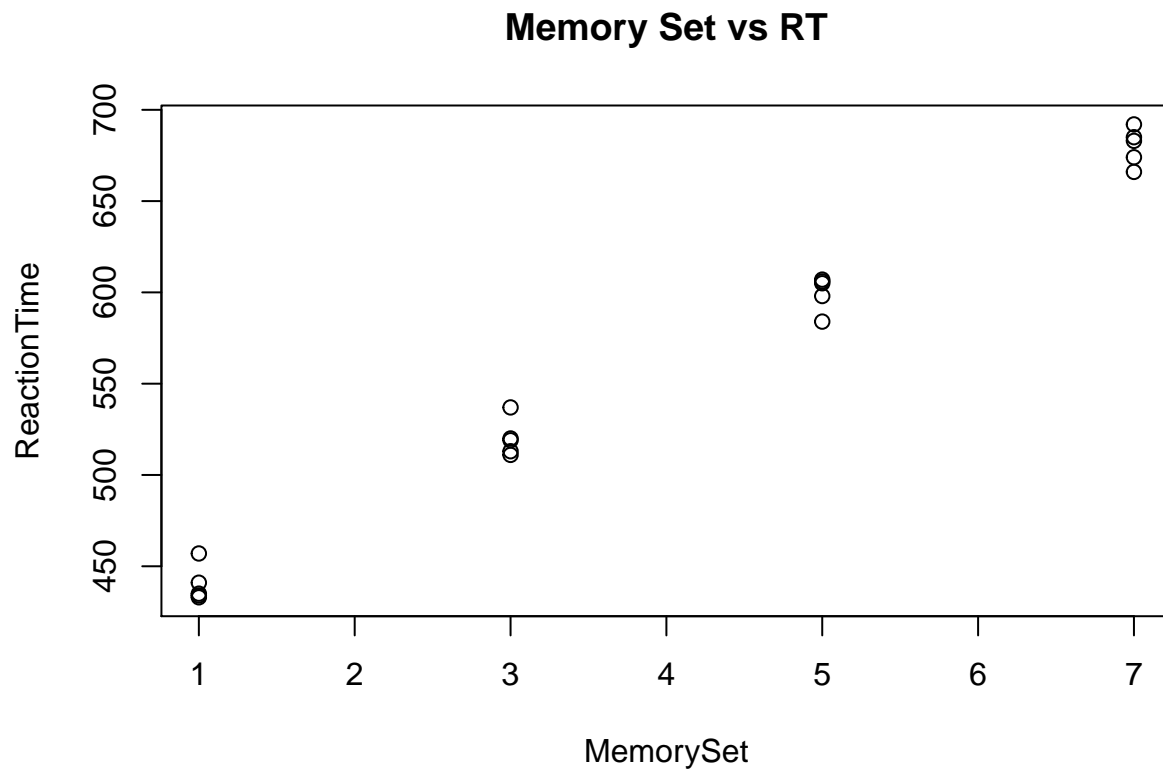Correlation between Memory Set and Reaction Time

```
cor(var1,var2)
```

```
## [1] 0.9950372
```

We now perform a regression analysis and an ANOVA on the data

```
reg1=lm(var1~var2)
aov1=aov(var1~var2)
```

We now print the data and all the results

Memory Set vs RT

Regression Analysis

```
summary(reg1)
```

```
##
## Call:
## lm(formula = var1 ~ var2)
##
## Residuals:
```

```
##      Min      1Q   Median       3Q      Max
## -0.45050 -0.12005  0.00248  0.14851  0.40594
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -9.8613861  0.3308982  -29.80   <2e-16 ***
## var2         0.0247525  0.0005834   42.43   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2345 on 18 degrees of freedom
## Multiple R-squared:  0.9901, Adjusted R-squared:  0.9895
## F-statistic:  1800 on 1 and 18 DF,  p-value: < 2.2e-16
```

ANOVA table

```
summary(aov1)
```

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## var2         1  99.01   99.01    1800 <2e-16 ***
## Residuals   18   0.99    0.06
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```