Calorie Burning Report

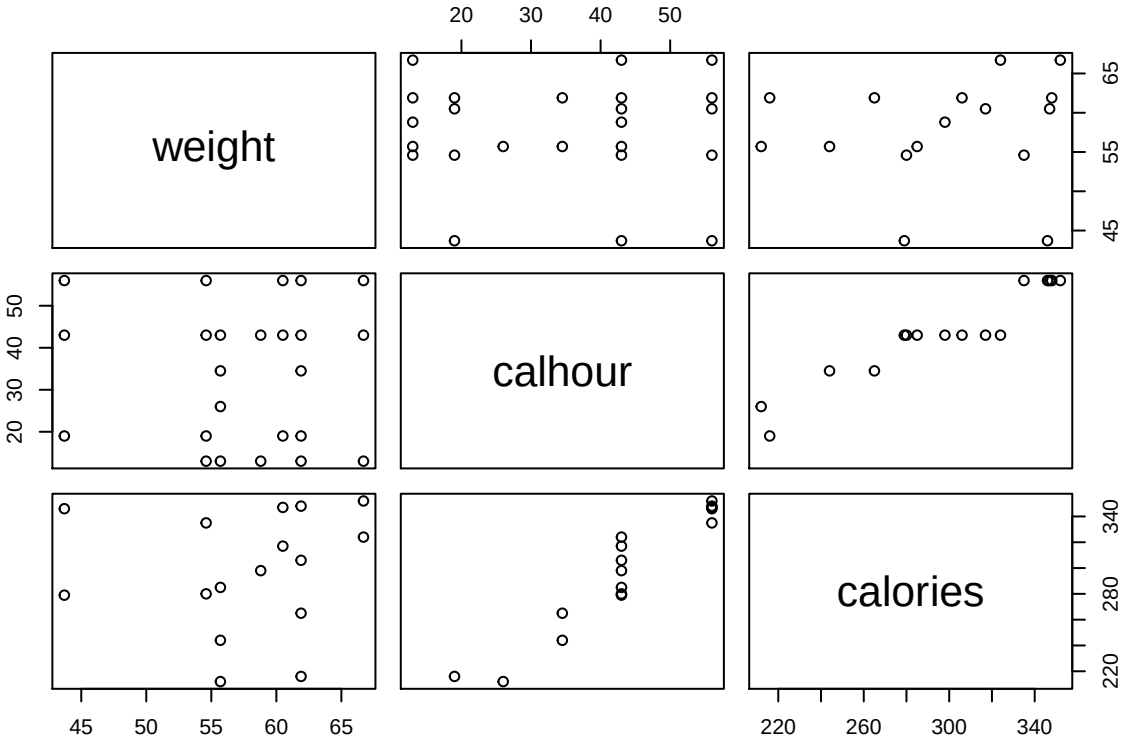
Our R Markdown Notebook which will form the final report. When you execute code within the notebook, the results appear beneath the code.

You can run code here and insert results directly.

```
options(digits=4)
muscledata = read.table("muscle-incomplete.txt", header=T, na.strings = "NA")
muscleSum = summary(muscledata)
```

Here are some descriptive statistics.

```
plot(muscledata)
```



Let's check correlation between the weight of an individual and the intensity of their workout, as defined by the calories burnt per hour, using the Pearson correlation coefficient:

```
cor.test(muscledata$weight, muscledata$calhour, alternative="two.sided", method="pearson")
```

```
##
##  Pearson's product-moment correlation
##
## data:  muscledata$weight and muscledata$calhour
## t = -0.13, df = 22, p-value = 0.9
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.4257  0.3807
## sample estimates:
##      cor
## -0.02687
```

The P value is way, way more than 0.05. We accept the null hypothesis, there seems to be no significant correlation.

Let's try plotting a simple linear model to this relationship.

```
weightCalhr = lm(weight~calhour, data=muscledata)
summary(weightCalhr)
```

```
##
## Call:
## lm(formula = weight ~ calhour, data = muscledata)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -14.00  -2.74   1.19   4.24   9.40
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  57.9102     3.2298   17.93  1.3e-14 ***
## calhour      -0.0108     0.0859   -0.13      0.9
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6.74 on 22 degrees of freedom
## Multiple R-squared:  0.000722,   Adjusted R-squared:  -0.0447
## F-statistic: 0.0159 on 1 and 22 DF,  p-value: 0.901
```

The linear model confirms our suspicion that there is no relationship here.