Chap5_4

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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("chap5_4.csv", header = FALSE, skip = 1)
colnames(data) <- c("Built", "Given", "Control")
```

We now combine the observations into one long column (score)

```
colnames(data) <- c("V1", "V2", "V3")
score=c(data$V1,data$V2,data$V3)
```

We generate a second column (levels), that identifies the group for each score. **User will also input desired variable names in double quotes**

```
levels=factor(c(rep("Built",5),rep("Given",5),rep("Control",5)))
```

We now form a data frame with the dependent variable and the factors, then print the table.

```
data=data.frame(score=score,group=levels)
knitr::kable(xtable(data))
```

score	group
22	Built
17	Built
24	Built
23	Built
24	Built
13	Given
9	Given
14	Given
18	Given
21	Given
9	Control
7	Control
10	Control
13	Control
16	Control

We now generate the ANOVA table based on the linear model

```
aov1=aov(score~levels)
print(model.tables(aov(score~levels),type = "means"),digits=3)

## Tables of means
## Grand mean
```

1

```
## 
## 16
## 
##   levels
## levels
##    Built Control   Given
##       22      11      15
```

```r
summary(aov1)
```

```
##             Df Sum Sq Mean Sq F value  Pr(>F)
## levels       2    310  155.00   10.94 0.00197 **
## Residuals   12    170   14.17
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```