How to perform a Student's t-test in R

The t-test can be used to determine if two sets of data are significantly different from each other. One of the outputs of a t-test is a p value. A typical p value that is considered significant is $p<0.05$. What this means is that you have a 5% risk of concluding that a difference exists when there is no actual difference.

Example:

I ran a t-test to determine if the trmB_glucose results from the morning and afternoon groups are significantly different. See "How to Make a Boxplot in R" to see how I organized the data.

```
> t.test(data2$Length~data2$Group, var.equal = TRUE)
```

The output looks like this:

```
        Two Sample t-test

data:  data2$Length by data2$Group
t = -0.44811, df = 194, p-value = 0.6546
alternative hypothesis: true difference in means is not equal to
0
95 percent confidence interval:
 -0.4678940  0.2946418
sample estimates:
mean in group TrmB_glucose_AM mean in group TrmB_glucose_PM
                     3.421501                      3.508127
```

My p value is greater than 0.05 (see red box), so I conclude that these groups are not significantly different. The output also gives me the means of each group.