

Untitled

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10/30/2016

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   :  2.00
##  1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##  Mean   :15.4    Mean   : 42.98
##  3rd Qu.:19.0    3rd Qu.: 56.00
##  Max.   :25.0    Max.   :120.00
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

```
maunaloa <- read.csv("http://pages.pomona.edu/~mw104747/Mauna_Loa.csv")
head(maunaloa)
```

```
##   year month decimal.date average
## 1 1958     3    1958.208  315.71
## 2 1958     4    1958.292  317.45
## 3 1958     5    1958.375  317.50
## 4 1958     6    1958.458     NA
## 5 1958     7    1958.542  315.86
## 6 1958     8    1958.625  314.93
```

```
str(maunaloa)
```

```
## 'data.frame':   706 obs. of  4 variables:
##  $ year      : int  1958 1958 1958 1958 1958 1958 1958 1958 1958 1958 ...
##  $ month     : int   3  4  5  6  7  8  9 10 11 12 ...
##  $ decimal.date: num  1958 1958 1958 1958 1959 ...
##  $ average   : num  316 317 318 NA 316 ...
```

```
plot(maunaloa$average ~ maunaloa$decimal.date, ty="l")
maunaloa.lm <- lm(average ~ decimal.date, data=maunaloa)
summary(maunaloa.lm)
```

```
##
## Call:
## lm(formula = average ~ decimal.date, data = maunaloa)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -7.3694 -2.7806 -0.3529  2.4347 11.7068
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -2.685e+03  1.718e+01  -156.3  <2e-16 ***
## decimal.date  1.528e+00  8.641e-03   176.8  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.866 on 697 degrees of freedom
## (7 observations deleted due to missingness)
## Multiple R-squared:  0.9782, Adjusted R-squared:  0.9782
## F-statistic: 3.126e+04 on 1 and 697 DF,  p-value: < 2.2e-16
abline(coef(maunaloa.lm), col="red")
```

