A Second Example

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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:

```
# only need to run the below command once on your machine only need to run the below command once on yo
# install.packages("tidyverse")

# load the tidyverse package
# tidyverse is a package of packages that
# are useful for data science
# packages are collections of functions
# that have been written by other people
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
# read in some company data
# this is some basic financial data
# from companies that have been in the S&P 500
# at some point in time since the year 2000.
companyData <- read.csv("../../dd_specific_files/companyData.csv")
head(companyData)
```

```
##   gvkey   cik                        conm   datadate fyear    revt      at
## 1  1013 61478  ADC TELECOMMUNICATIONS INC 2010-09-30  2010  1156.6  1474.5
## 2  1045  6201 AMERICAN AIRLINES GROUP INC 2010-12-31  2010 22170.0 25088.0
## 3  1045  6201 AMERICAN AIRLINES GROUP INC 2011-12-31  2011 24022.0 23848.0
## 4  1045  6201 AMERICAN AIRLINES GROUP INC 2012-12-31  2012 24855.0 23510.0
## 5  1045  6201 AMERICAN AIRLINES GROUP INC 2013-12-31  2013 26712.0 42278.0
## 6  1045  6201 AMERICAN AIRLINES GROUP INC 2014-12-31  2014 42650.0 43771.0
##        lt    dltt    dlc    sale     act     lct working_capital_ratio
## 1  1040.1   650.8    0.3  1156.6  1107.7   288.7             3.8368549
```

```
## 2 29033.0  9253.0 1883.0 22170.0  6838.0  8780.0             0.7788155
## 3 30959.0  6702.0 1518.0 24022.0  6757.0  8630.0             0.7829664
## 4 31497.0  7116.0 1419.0 24855.0  7072.0  9304.0             0.7601032
## 5 45009.0 15353.0 1446.0 26712.0 14323.0 13806.0             1.0374475
## 6 41750.0 16196.0 1708.0 42650.0 12112.0 13435.0             0.9015259
##   revtBillions atBillions
## 1       1.1566     1.4745
## 2      22.1700    25.0880
## 3      24.0220    23.8480
## 4      24.8550    23.5100
## 5      26.7120    42.2780
## 6      42.6500    43.7710
```

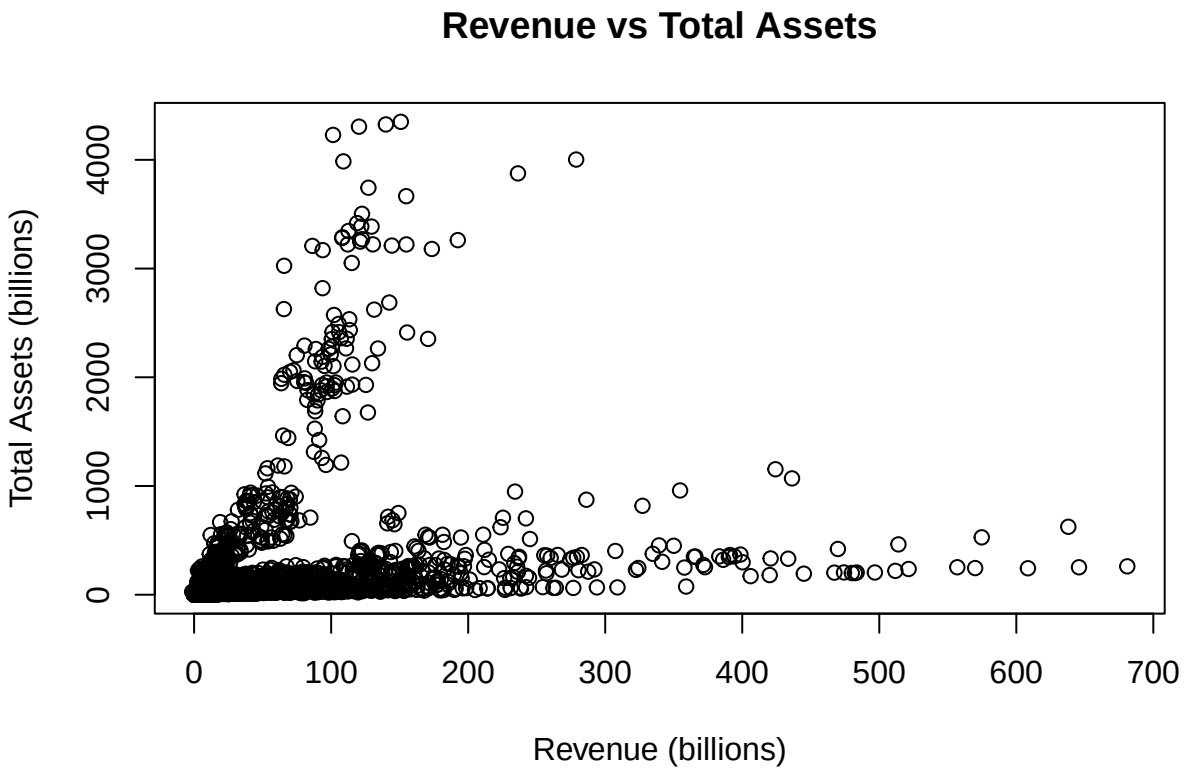
```
summary(companyData)
```

```
##      gvkey             cik              conm             datadate
##  Min.   :  1013   Min.   :   1800   Length:10543       Length:10543
##  1st Qu.:  6649   1st Qu.: 100517   Class :character   Class :character
##  Median : 12689   Median : 877212   Mode  :character   Mode  :character
##  Mean   : 43539   Mean   : 778736
##  3rd Qu.: 61567   3rd Qu.:1123360
##  Max.   :316056   Max.   :1915657
##
##      fyear           revt              at                lt
##  Min.   :2009   Min.   : -1408   Min.   :      4   Min.   :      2
##  1st Qu.:2013   1st Qu.:  3189   1st Qu.:   5672   1st Qu.:   3298
##  Median :2016   Median :  7002   Median :  13552   Median :   8620
##  Mean   :2017   Mean   : 19545   Mean   :  63220   Mean   :  51177
##  3rd Qu.:2020   3rd Qu.: 16375   3rd Qu.:  36811   3rd Qu.:  24756
##  Max.   :2024   Max.   :680985   Max.   :4349731   Max.   :4255074
##                 NA's   :30       NA's   :29        NA's   :50
##       dltt              dlc               sale             act
##  Min.   :      0   Min.   :     0.0   Min.   : -1408   Min.   :     3.74
##  1st Qu.:   1229   1st Qu.:    25.5   1st Qu.:  3189   1st Qu.:  1536.47
##  Median :   3598   Median :   249.0   Median :  7002   Median :  3132.01
##  Mean   :  18249   Mean   :  3993.6   Mean   : 19545   Mean   :  7843.24
##  3rd Qu.:   9221   3rd Qu.:   978.2   3rd Qu.: 16375   3rd Qu.:  7093.10
##  Max.   :4216909   Max.   :492579.0   Max.   :680985   Max.   :190867.00
##  NA's   :53        NA's   :29         NA's   :30       NA's   :1681
##       lct            working_capital_ratio  revtBillions       atBillions
##  Min.   :     1.89   Min.   : 0.1027       Min.   : -1.408   Min.   :   0.004
##  1st Qu.:   900.17   1st Qu.: 1.0495       1st Qu.:  3.189   1st Qu.:   5.672
##  Median :  2154.39   Median : 1.4580       Median :  7.002   Median :  13.552
##  Mean   :  6070.43   Mean   : 1.8106       Mean   : 19.545   Mean   :  63.220
##  3rd Qu.:  5267.27   3rd Qu.: 2.1251       3rd Qu.: 16.375   3rd Qu.:  36.811
##  Max.   :179431.00   Max.   :54.9049       Max.   :680.985   Max.   :4349.731
##  NA's   :1677        NA's   :1681          NA's   :30        NA's   :29
```

Plots

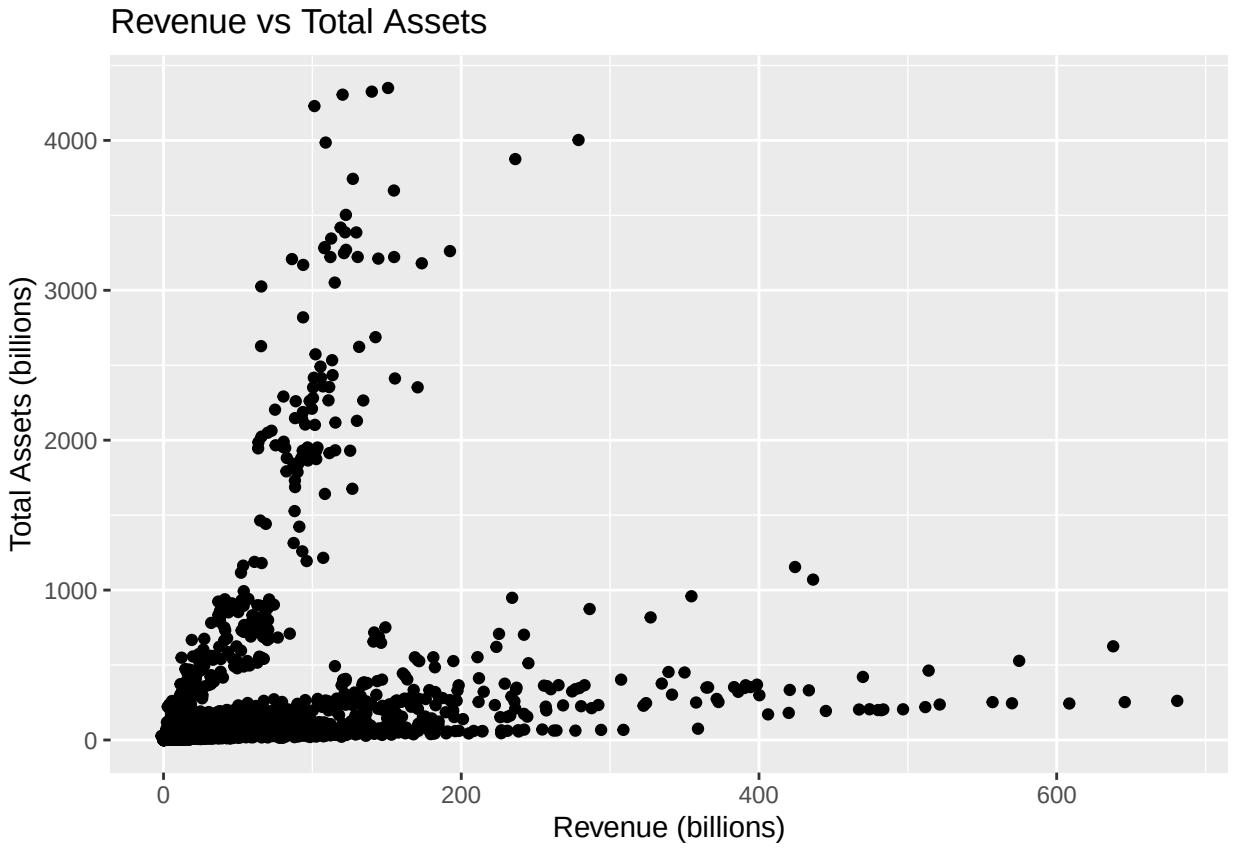
You can embed plots in your RMarkdown file. There's more than one way to create plots in R. For example, you can use the base R `plot()` function, or you can use the ggplot2 package. These are not the only ways to create plots in R, but they are two of the most common.

```r
plot(companyData$revtBillions, companyData$atBillions,
     xlab = "Revenue (billions)",
     ylab = "Total Assets (billions)",
     main = "Revenue vs Total Assets")
```




```r
ggplot(companyData, aes(x = revtBillions, y = atBillions)) +
  geom_point() +
  labs(x = "Revenue (billions)",
       y = "Total Assets (billions)",
       title = "Revenue vs Total Assets")
```

```
## Warning: Removed 30 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

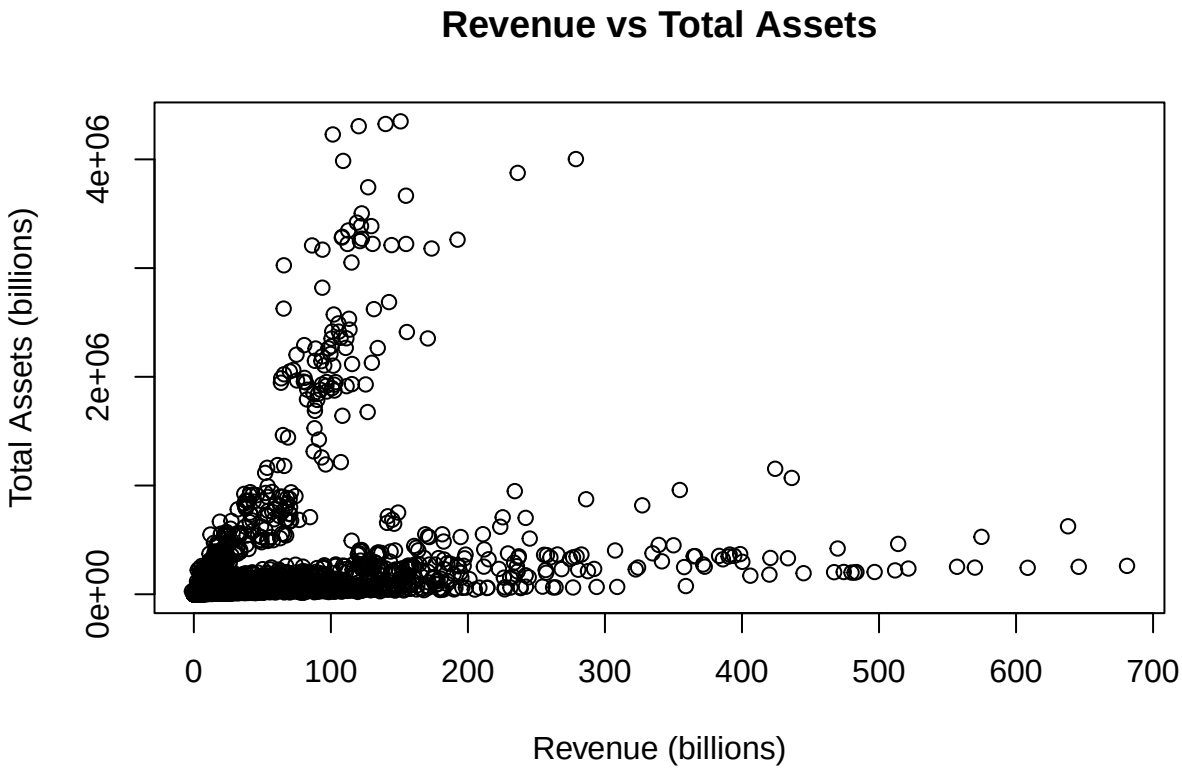


Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

echo = FALSE vs echo = TRUE

Explaining this because the example RMarkdown file uses `echo`.

If we include `{r, echo = False}` in our R code chunk, the final knitted RMarkdown file will not include the code that was run, only the output.

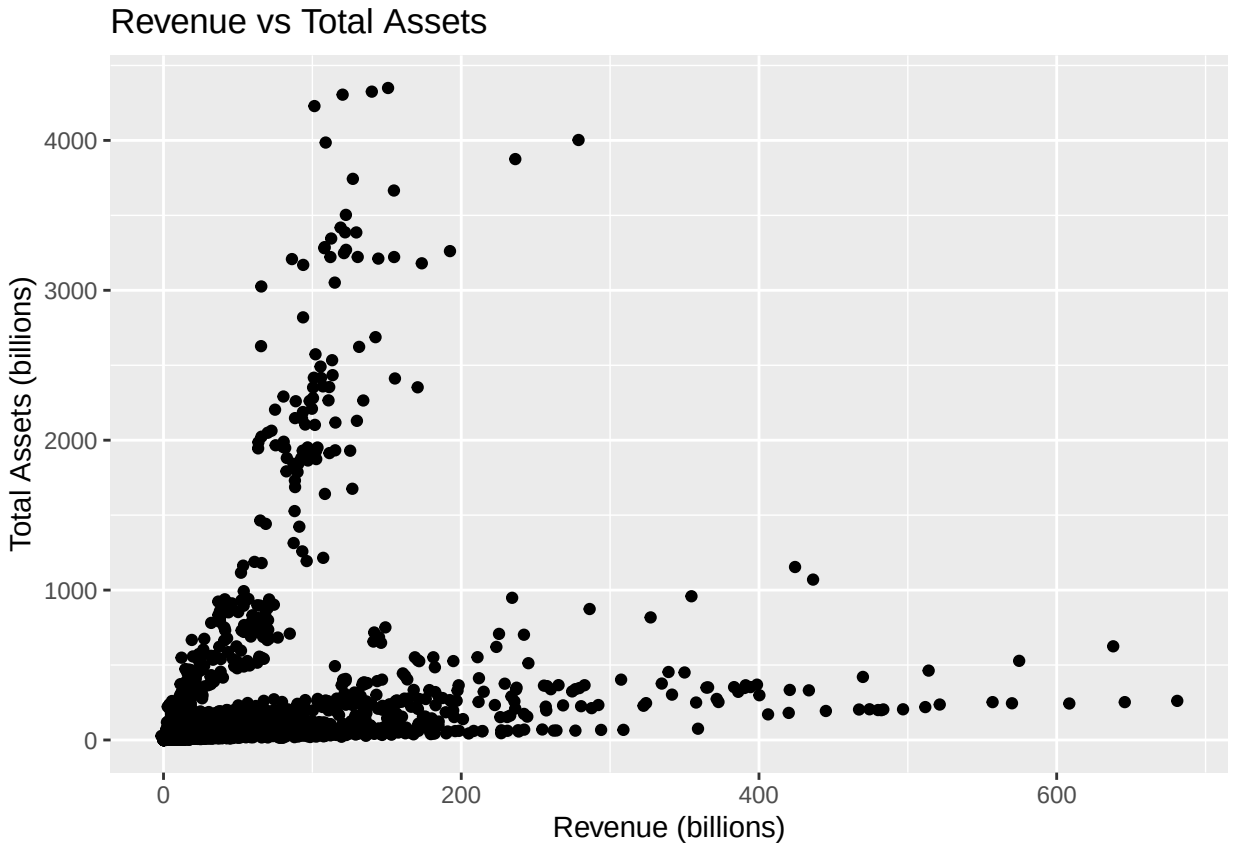


An example:

If instead we include `{r, echo = TRUE}`, the final knitted RMarkdown file will include the code that was run, as well as the output.

```
ggplot(companyData, aes(x = revtBillions, y = atBillions)) +
  geom_point() +
  labs(x = "Revenue (billions)",
       y = "Total Assets (billions)",
       title = "Revenue vs Total Assets")
```

```
## Warning: Removed 30 rows containing missing values or values outside the scale range
## (`geom_point()`).
```


Revenue vs Total Assets
Total Assets (billions)
4000
3000
2000
1000
0
0
200
400
600
Revenue (billions)