RMarkdown Demo

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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:

summary(cars)

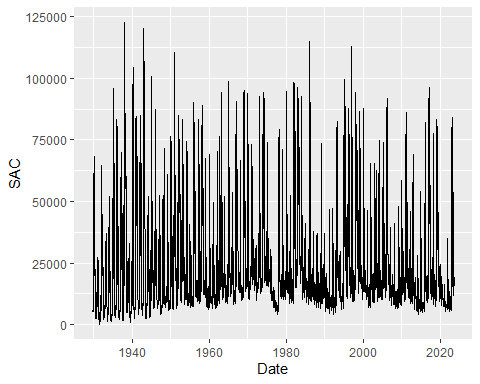
## speed dist   
## Min. : 4.0 Min. : 2.00   
## 1st Qu.:12.0 1st Qu.: 26.00   
## Median :15.0 Median : 36.00   
## Mean :15.4 Mean : 42.98   
## 3rd Qu.:19.0 3rd Qu.: 56.00   
## Max. :25.0 Max. :120.00

## Code chunk options

Your R Markdown is broken up into ‘code’ chunks and text or ‘markdown’ chunks. Making nice looking R Markdown documents means understanding how to format your code chunks and markdown chunks appropriately.

<https://yihui.org/knitr/options/>

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ dplyr 1.1.4 ✔ readr 2.1.4  
## ✔ forcats 1.0.0 ✔ stringr 1.5.1  
## ✔ ggplot2 3.4.4 ✔ tibble 3.2.1  
## ✔ lubridate 1.9.3 ✔ tidyr 1.3.0  
## ✔ purrr 1.0.2   
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()  
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors



## Formatting Markdown chunks

A few hints for the markdown chunks:

* You need two carriage returns to start a new line.
* Asterisks or dashes make bullets
* Hash tag indicate headings
* You can use html for fancy formatting
* css sheets are used for very fancy formatting (not covered here)
* Use backticks to put code in text blocks function(x)

R Markdown is an easy-to-write plain text format for creating dynamic documents and reports. See [Using R Markdown](https://rmarkdown.rstudio.com/) to learn more.

## Figures

You can include figures in a text chunk

image: Alt text

Or you can include them in code chunks.

|  |
| --- |
| Alt text here |

Alt text here

Default tables aren’t bad, but aren’t great either

test = data.frame(Year = c(2000:2023), X =c(0:23), Y = c("Apple", "banana", "cheese"),  
 Z = c(exp(1), pi, exp(2)))  
  
print(test)

## Year X Y Z  
## 1 2000 0 Apple 2.718282  
## 2 2001 1 banana 3.141593  
## 3 2002 2 cheese 7.389056  
## 4 2003 3 Apple 2.718282  
## 5 2004 4 banana 3.141593  
## 6 2005 5 cheese 7.389056  
## 7 2006 6 Apple 2.718282  
## 8 2007 7 banana 3.141593  
## 9 2008 8 cheese 7.389056  
## 10 2009 9 Apple 2.718282  
## 11 2010 10 banana 3.141593  
## 12 2011 11 cheese 7.389056  
## 13 2012 12 Apple 2.718282  
## 14 2013 13 banana 3.141593  
## 15 2014 14 cheese 7.389056  
## 16 2015 15 Apple 2.718282  
## 17 2016 16 banana 3.141593  
## 18 2017 17 cheese 7.389056  
## 19 2018 18 Apple 2.718282  
## 20 2019 19 banana 3.141593  
## 21 2020 20 cheese 7.389056  
## 22 2021 21 Apple 2.718282  
## 23 2022 22 banana 3.141593  
## 24 2023 23 cheese 7.389056

You can do better with the kable function in the knitr package

kable(test, caption = "A prettier table")

A prettier table

| Year | X | Y | Z |
| --- | --- | --- | --- |
| 2000 | 0 | Apple | 2.718282 |
| 2001 | 1 | banana | 3.141593 |
| 2002 | 2 | cheese | 7.389056 |
| 2003 | 3 | Apple | 2.718282 |
| 2004 | 4 | banana | 3.141593 |
| 2005 | 5 | cheese | 7.389056 |
| 2006 | 6 | Apple | 2.718282 |
| 2007 | 7 | banana | 3.141593 |
| 2008 | 8 | cheese | 7.389056 |
| 2009 | 9 | Apple | 2.718282 |
| 2010 | 10 | banana | 3.141593 |
| 2011 | 11 | cheese | 7.389056 |
| 2012 | 12 | Apple | 2.718282 |
| 2013 | 13 | banana | 3.141593 |
| 2014 | 14 | cheese | 7.389056 |
| 2015 | 15 | Apple | 2.718282 |
| 2016 | 16 | banana | 3.141593 |
| 2017 | 17 | cheese | 7.389056 |
| 2018 | 18 | Apple | 2.718282 |
| 2019 | 19 | banana | 3.141593 |
| 2020 | 20 | cheese | 7.389056 |
| 2021 | 21 | Apple | 2.718282 |
| 2022 | 22 | banana | 3.141593 |
| 2023 | 23 | cheese | 7.389056 |

kable(test, format = "pipe", caption = "A prettier table", digits =2)

A prettier table

| Year | X | Y | Z |
| --- | --- | --- | --- |
| 2000 | 0 | Apple | 2.72 |
| 2001 | 1 | banana | 3.14 |
| 2002 | 2 | cheese | 7.39 |
| 2003 | 3 | Apple | 2.72 |
| 2004 | 4 | banana | 3.14 |
| 2005 | 5 | cheese | 7.39 |
| 2006 | 6 | Apple | 2.72 |
| 2007 | 7 | banana | 3.14 |
| 2008 | 8 | cheese | 7.39 |
| 2009 | 9 | Apple | 2.72 |
| 2010 | 10 | banana | 3.14 |
| 2011 | 11 | cheese | 7.39 |
| 2012 | 12 | Apple | 2.72 |
| 2013 | 13 | banana | 3.14 |
| 2014 | 14 | cheese | 7.39 |
| 2015 | 15 | Apple | 2.72 |
| 2016 | 16 | banana | 3.14 |
| 2017 | 17 | cheese | 7.39 |
| 2018 | 18 | Apple | 2.72 |
| 2019 | 19 | banana | 3.14 |
| 2020 | 20 | cheese | 7.39 |
| 2021 | 21 | Apple | 2.72 |
| 2022 | 22 | banana | 3.14 |
| 2023 | 23 | cheese | 7.39 |