

Practical R: R Markdown

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BIOF 339

RMarkdown

R Markdown

- There are some choices you might need to make
 - Document is like a paper
 - Presentation is like PowerPoint
 - Shiny is an interactive web app developed in R. May talk about it towards the end
 - Various packages also provide templates for RMarkdown documents

- Elements on the right are output formats
 - Documents produce Word, PDF or HTML
 - Presentations produce PowerPoint, PDF, or HTML

New R Markdown

Document

Presentation

Shiny

From Template

Title:

Author:

Default Output Format:

HTML
Recommended format for authoring (you can switch to PDF or Word output anytime).

PDF
PDF output requires TeX (MiKTeX on Windows, MacTeX 2013+ on OS X, TeX Live 2013+ on Linux).

Word
Previewing Word documents requires an installation of MS Word (or Libre/Open Office on Linux).

```
---  
title: "Untitled"  
author: "Abhijit Dasgupta"  
date: "9/11/2019"  
output: html_document  
---
```

This determines the title and author, and the output type. Typically don't modify the entry in output for now

```
```${r cars}  
summary(cars)
```
```

This is a code chunk. RMarkdown evaluates this chunk of code and replaces the code with the results. This code chunk happens to be named "cars". The naming is optional but useful.

RMarkdown

```
```{r cars}  
summary(cars)
```

## Results

```
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

## RMarkdown

```
```${r}
library(tableone) # Use a package
kableone(CreateTableOne(data=airquality),
          format='html')
```
```

## Results

```
library(tableone) # Use a package
kableone(CreateTableOne(data=airquality),
 format='html')
```

|                     | Overall        |
|---------------------|----------------|
| n                   | 153            |
| Ozone (mean (SD))   | 42.13 (32.99)  |
| Solar.R (mean (SD)) | 185.93 (90.06) |
| Wind (mean (SD))    | 9.96 (3.52)    |
| Temp (mean (SD))    | 77.88 (9.47)   |
| Month (mean (SD))   | 6.99 (1.42)    |
| Day (mean (SD))     | 15.80 (8.86)   |

The code chunk on the left gets **replaced** by the table on the right in your document





# Inline code evaluation

## RMarkdown

The airquality data set has  
``r nrow(airquality)`` observations

The average ozone level is ``r  
mean(airquality$ozone)`` parts per billion

## Results

The airquality data set has 153 observations

The average ozone level is  
42.1293103 parts per billion