



Center for Evaluation
and Development

Making a Presentation in R Using c4ed theme: Xaringan

Center for Evaluation and Development(C4ED) Using c4ed theme

Yebelay Berehan, ([Survey Manager](#))
October 19, 2023



Outlines

- General introduction to R markdown 
- Making presentation slide using xaringan template 
- Create presentation using C4ED template 





Packages for making presentation in R

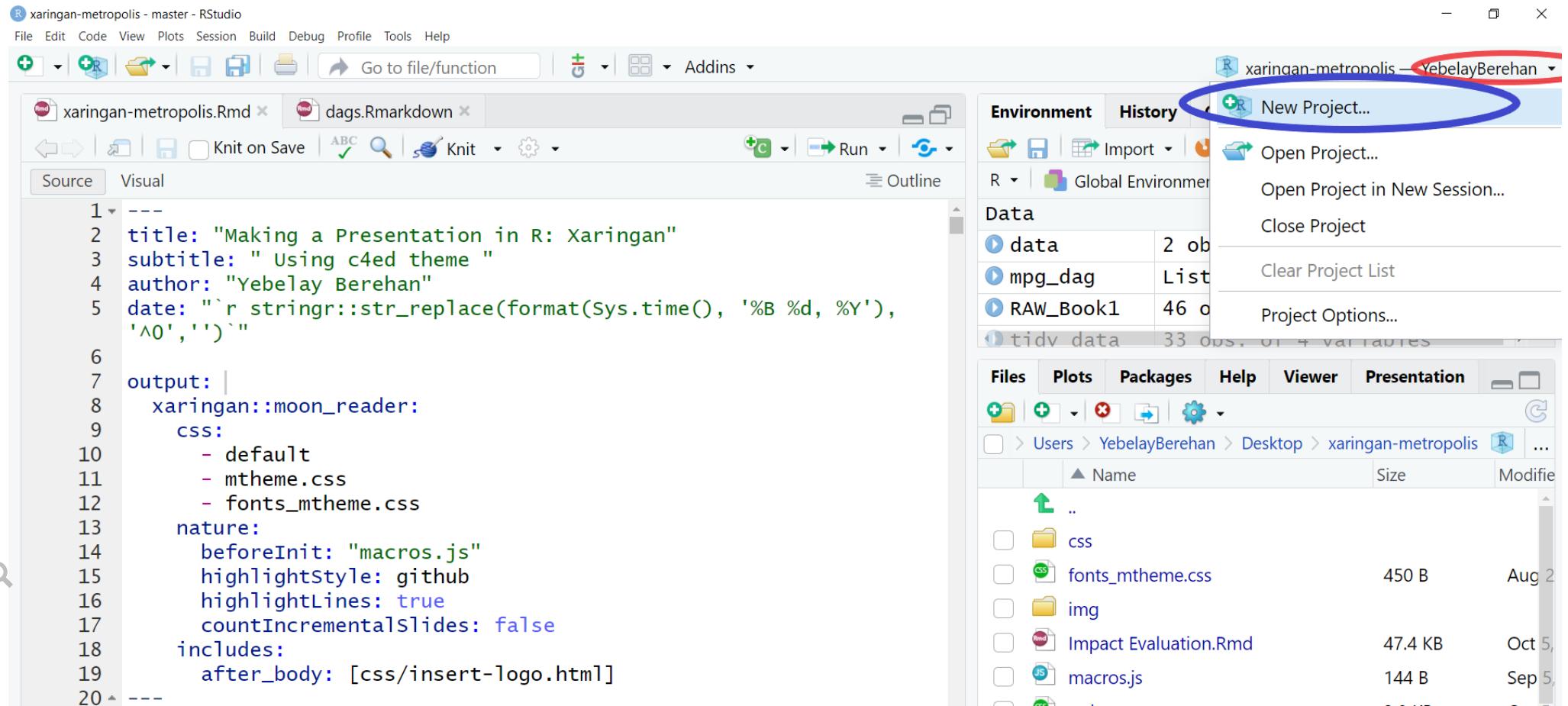
1. **rmarkdown**: Creates dynamic reports and documents by blending code and text.
2. **knitr**: Embeds and executes R code within R Markdown, generating tables and plots.
3. **tinytex**: Simplifies LaTeX package management for high-quality documents.
4. **xaringan**: Builds interactive web-based presentations using R Markdown.
5. **xaringanthemer**: Customizes themes and styles for Xaringan presentations.
6. **xaringanExtra**: Enhances Xaringan presentations with features like slide notes and transitions.

```
packs <- c(rmarkdown, knitr, tinytex, xaringan, xaringanExtra,  
           xaringanthemer)  
install.packages("packs")
```



Creating an R project 🐥

- Create a new R Project from within R Studio

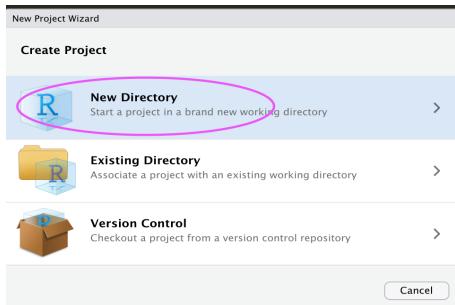


The screenshot shows the R Studio interface with a project titled "xaringan-metropolis" open. The "New Project..." option in the "File" menu is highlighted with a blue oval. The "Files" tab in the bottom navigation bar is selected, showing a list of files and folders in the current project directory:

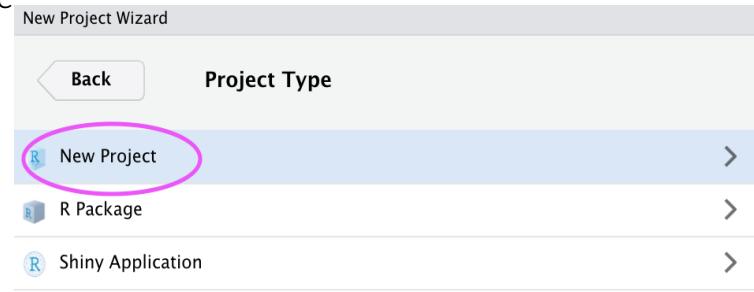
Name	Size	Last Modified
..		
css	450 B	Aug 2
fonts_mtheme.css		
img		
Impact Evaluation.Rmd	47.4 KB	Oct 5,
macros.js	144 B	Sep 5,



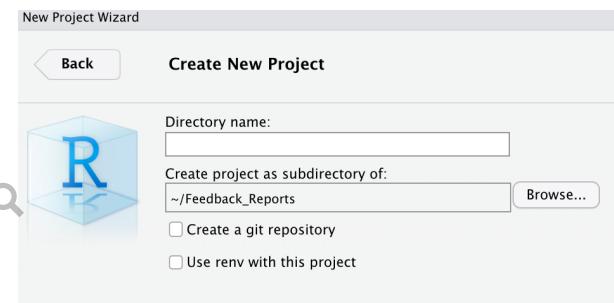
- Save in new directory

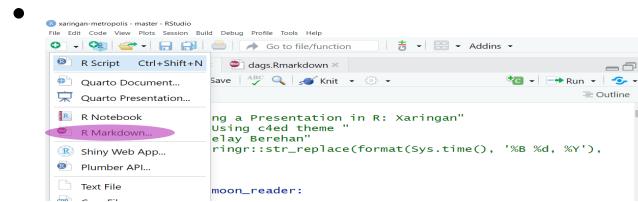


- Choose the folder where you want to store



your R Markdown file





- In that new folder, create an R Markdown file
- When
 - File → New File → R Markdown → Click OK
- you knit, the following happens:



- knit executes the code if there is any, converts the resulting document from **.Rmd (R Markdown)** into **.md (Markdown)**
- pandoc transforms the **.md document** into your preferred output format(s) (e.g., word, pdf, html)



The YAML header

YAML includes the metadata variables

- e.g., title, output format
- written between a pair of three hyphens -

```
---  
title:  
output:  
---
```

- Typical **YAML variables** for any output format:

```
---  
title:  
author:  
date:  
output:  
---
```



YAML – Variables

- Variables can be provided as strings, options, sub-options, and code

```
---
```

```
title: "My very funny first slide"
```

```
output:
```

```
  pdf_document:
```

```
    keep_tex: true
```

```
date: "`r Sys.Date()`"
```

```
---
```

- Documents as output formats include

```
---
```

```
output: html_document
```

```
output: latex_document
```

```
output: pdf_document
```

```
output: word_document
```

```
---
```

- HTML
- LaTeX
- PDF
- Word



Headers

- The number sign # introduces headers; lower levels are created with additional # — up to total four levels

```
# Introduction  
## Introduction  
### Introduction  
#### Introduction
```

Introduction

Introduction

Introduction

Introduction

Emphases

- A pair of single asterisk * or underscores _ introduces italics
- *italics* or italics becomes *italics*
- A pair of double asterisk or underscores introduces bold
- **bold** or bold becomes **bold**



Equations

Inline equations go between a pair of single dollar signs "\$" with no space between the signs and the equation itself

`$E = mc^2$` becomes $E = mc^2$

Block equations go in between a pair of double dollar signs

`$$E = mc^2$$` becomes

$$E = mc^2$$

```
 $$Y=\beta_0+\beta_1x^2+\epsilon$$
 $$\bar{x}=\frac{\sum_{i=1}^n x_i}{n}$$
```

$$Y = \beta_0 + \beta_1 x + \beta_2 x^2 + \epsilon$$

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n}$$



Lists

Lines starting with asterisk * as well as plus + or minus - signs introduce lists

- books
- articles
- reports

- books
- articles
- reports

- Lists can be numbered, nested within each other, with indentation

1. books
2. articles
 - published
 - under review
 - + revised and resubmitted
 - work in progress

1. books
2. articles
 - published
 - under review
 - revised and resubmitted
 - work in progress



Dashes

- Two hyphens grouped together introduce small dash
 - -- becomes --
 - Three hyphens grouped together introduce bigger dash
 - --- becomes ---
-

Subscripts and Superscripts

- underscore ($\underline{}$) introduces subscript
 - $\$ \text{CO}_2 \$$ becomes co_2
- \wedge introduces superscript
 - R^2 becomes R^2



Making presentation slide using xaringan template 📄

- Xaringan = shar-in-gen or [ʃæ.'riŋ.gæn], which is created by Yihui Xie
- Install the package from GitHub

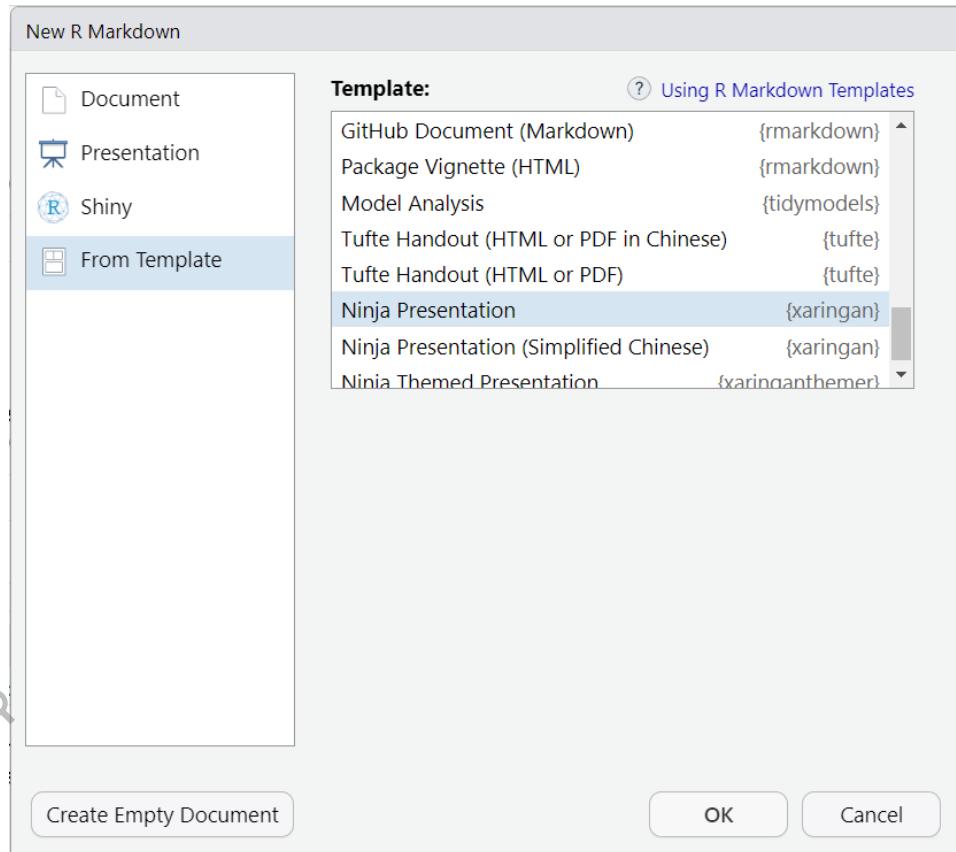
```
remotes::install_github("yihui/xaringan")
```

- In RStudio: Make a new project
- File ➔ New File ➔ R Markdown ➔ From Template ➔ Ninja Presentation
- Delete everything but YAML
- Save. (save, save, save!)



Then the YAML page

```
knitr::include_graphics("img/Ninja.png")
```



```
---
```

```
title: "Presentation Ninja"
subtitle: "※<br/>with xaringan"
author: "Yihui Xie"
institute: "RStudio, PBC"
date: "2016/12/12(updated: `r Sys.Date()`)"
output:
  xaringan::moon_reader: # output format
  nature:
    highlightStyle: # how the code displays
    highlightLines: true
  countIncrementalSlides: false
#ratio "16:9" # or 4:3
---
```



- To view the slides generated by your new Rmd file, you have two options:

Option 1. Run xaringan's infinite moon reader function in the console 

```
xaringan::inf_mr()
```

Option 2. Knit the document 



Familiar from **markdown**

- Headings (#, ##, ###)
- **Bold** and *italic* type
- Links and images with `[]()` and ``
- Bullet points can be added with
`-`, `+`, or `*`
- Numbered lists can be created with `1.`

Not so familiar, from **remark.js**

- First slide starts immediately after YAML, doesn't need to begin with three dashes(`---`)
- Slides are separated by three dashes
(`---`)
- Incremental slides are separated by two dashes (`--`)



How can we make our slides look more interesting?

by adjusting

- Placement of texts
- pretty pictures
- and icons



Make slides look more interesting: Align an entire slide

Horizontally

```
left,  
center,  
right
```

Vertically

```
top,  
middle,  
bottom
```

```
---  
class: center, middle  
This content is also centered and in the middle of the slide  
---
```

- Slide with some text aligned

```
.right[...and finish it on the right.]
```

...and finish it on the right.



Make slides look more interesting: Placement

- Pull content to either side of the slide
- **The `.pull-left[]` class pulls content to the left 47%**

```
.pull-left[

]
```



- And `.pull-right[]` pulls content to the right 47%

```
.pull-right[

]
```



- They don't have to take up the entire slide. Like for this text, you can decide to continue creating content that isn't pulled to either side.



.left-column[] places
content into a column
20% wide

- And text is a little lighter

.right-column[] places content into a column 75% wide

- It also has a *little* bit of padding on the top
- And unlike the .pull content classes, these column classes are fixed for the entire slide
- They are meant to be used together



How to add images to your slides pictures

- Insert image from local or external sources
- Integrate R plots to the slide



insert image from local or external sources

- There are a variety of ways to add images to your slides!

Markdown knitr HTML Full background image

```

```

- simple
- not very flexible
- output size fully dependent on the size of the image,
but scaling can be managed



insert image from local or external sources

- There are a variety of ways to add images to your slides!

Markdown knitr HTML Full background image

```
knitr::include_graphics("img/fig.png")
```

- pretty flexible
- a little bulky



insert image from local or external sources

- There are a variety of ways to add images to your slides!

Markdown

knitr

HTML

Full background image

```

```

- most flexible
- a bit unsightly
- takes time to get used to syntax



insert image from local or external sources

- There are a variety of ways to add images to your slides!

Markdown

knitr

HTML

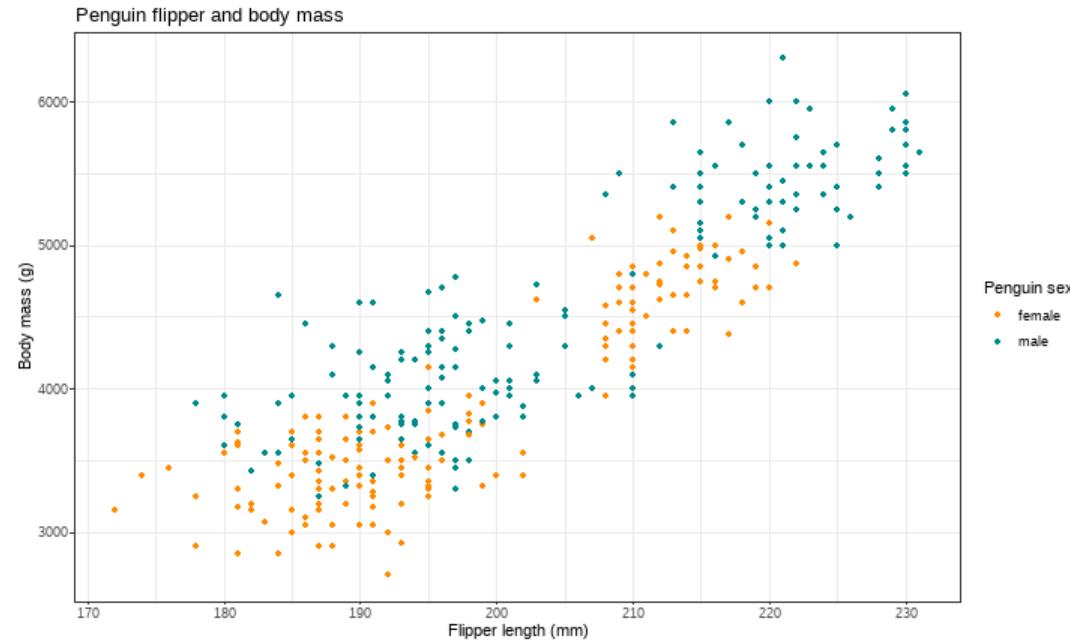
Full background image

- Use the `background-image` `property` right after slide break (`---`):
- `background-image: url("actual url or file path here")`
- `background-size: cover` --> will cover the slide so that there is no white space.
- `background-position:` play with `this`

```
class: inverse  
background-image: url("https://media.giphy.com/media/giphy.gif")  
background-size: cover
```



visualize our data using r code

[plot](#)[R code](#)[Chunk Code](#)

visualize our data using r code

plot R code Chunk Code

```
library(ggplot2)
library(palmerpenguins)
ggplot(penguins, aes(x = flipper_length_mm, y = body_mass_g, color = sex)) +
  geom_point() + theme_bw() +
  scale_color_manual(values = c("darkorange", "cyan4"), na.translate = FALSE) +
  labs(title = "Penguin flipper and body mass") +
  labs(x = "Flipper length (mm)", y = "Body mass (g)",
       color = "Penguin sex") # facet_wrap(~ species)
```



visualize our data using r code

plot R code Chunk Code

```
```{r, fig.showtext = TRUE, fig.align='center', echo=FALSE, warning=FALSE,
message=FALSE, fig.width=6, fig.height=4}
library(ggplot2)
library(palmerpenguins)
ggplot(penguins, aes(x = flipper_length_mm, y = body_mass_g, color = sex)) +
 geom_point() + theme_bw() +
 scale_color_manual(values = c("darkorange", "cyan4"), na.translate = FALSE) +
 labs(title = "Penguin flipper and body mass") +
 labs(x = "Flipper length (mm)", y = "Body mass (g)",
 color = "Penguin sex") # facet_wrap(~ species)
```



# Create presentation using C4ED template



24

[New Rmd File](#)[Directory](#)[YAML 1](#)[YAML 2](#)[c4ed1](#)[c4ed2](#)

## 1. New File

## 2. New R Markdown

```
xaringan-metropolis - master - RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
R Script Ctrl+Shift+N
Quarto Document...
Quarto Presentation...
R Notebook
R Markdown... (highlighted)
Shiny Web App...
Plumber API...
Text File
Ctrl+Shift+N
dags.Rmarkdown x
Save ABC Knit Run Outline
ng a Presentation in R: Xaringan"
Using c4ed theme "
elay Berehan"
ringr::str_replace(format(Sys.time(), '%B %d, %Y'),
,
moon_reader:
```

## 3. From Template

New R Markdown

Template: [Using R Markdown Templates](#)

Template	Description	Template File
GitHub Document (Markdown)	{rmarkdown}	
Package Vignette (HTML)	{rmarkdown}	
Shiny	{tidymodels}	
Model Analysis		
Tufte Handout (HTML or PDF in Chinese)	{tufte}	
Tufte Handout (HTML or PDF)	{tufte}	
Ninja Presentation	{xaringan}	
Ninja Presentation (Simplified Chinese)	{xaringan}	
Ninja Themed Presentation	{xaringanthemer}	

Create Empty Document      OK      Cancel

# Create presentation using C4ED template

New Rmd File

Directory

YAML 1

YAML 2

c4ed1

c4ed2

The new directory in the "Files" pane contains

-  the new Rmd file (i.e. `xaringan slide.Rmd`)
-  the `img` folder containing logo files
-  the `css` folder containing the custom `C4ED` theme files and an HTML file in charge of adding the c4ed logo to each slide.



# Create presentation using C4ED template

[New Rmd File](#)[Directory](#)[YAML 1](#)[YAML 2](#)[c4ed1](#)[c4ed2](#)

```

```

```
title: "Making a Presentation in R Using c4ed theme: Xaringan"
subtitle: "Center for Evaluation and Development(C4ED) Using c4ed theme"
#institution: ""
author: "Yebelay Berehan"
date: "`r stringr::str_replace(format(Sys.time(), '%B %d, %Y'), '^0','')`"
output:
 xaringan::moon_reader:
 css:
 - default
 - c4ed_theme.css
 - css/fonts_c4ed.css
```



# Create presentation using C4ED template



New Rmd File    Directory    YAML 1    YAML 2    c4ed1    c4ed2

More options for output `xaringan::moon_reader`

```
nature:
 highlightStyle: github # highlighting syntax for code
 highlightLines: true # true: enables code line highlighting
 countIncrementalSlides: false # increment not counted as page
 highlightLanguage: ["r"] # languages to highlight
 countdown: 60000 # add time count for each slide
 ratio: "16:10" # or 16:9 # size of slide
includes:
 after_body: [css/insert-logo.html] # include logos to each page
```

---





New Rmd File

Directory

YAML 1

YAML 2

c4ed1

c4ed2

```
.remark-slide-content {
 background-color: #FFFFFF;
 border-top: 70px solid #006D6B;
 font-size: 24px;
 font-weight: 200;
 line-height: 1.5;
 padding: 1em 2em 1em 2em;
}
.title-slide {
 background-image: url(img/logo-title-slide.png),
 url(img/fig.png);
 background-size: 200px auto, 100% 200px;
 background-position: 90% 5%, bottom;
 background-repeat: no-repeat;
}
```



```
/* colored to white for slides that have both
 the .title-slide and .inverse classes. */
.title-slide .inverse .remark-slide-content {
 background-color: #ffffff;
 color: #ffffff; /* Set the text color to white */
}
/* --Make color the inverse slide -- */
.inverse {
 background-color: #006D6B;
 text-shadow: none;
}
```

# Create presentation using C4ED template

[New Rmd File](#)[Directory](#)[YAML 1](#)[YAML 2](#)[c4ed1](#)[c4ed2](#)

- The customized CSS to c4ed theme is found in the following link [c4ed\\_theme.css](#)



# Table

```
library(DT) # Create an interactive data table
datatable(iris, options = list(pageLength = 10))
```

Show  entries

Search:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa

Showing 1 to 10 of 150 entries

Previous

1

2

3

4

5

...

15

Next



## Keyboard shortcuts

- **k** Go to previous slide
- **j** Go to next slide
- **b** Toggle blackout
- **m** Toggle mirrored
- **f** Toggle fullscreen mode
- **c** Clone slideshow
- **p** Toggle presenter mode
- **t** Restart the presentation timer
- **?, h** Toggle this help
- **o** Tile View: Overview of Slides
- **f** Fit Slides to Screen
- **s** Toggle scribble toolbox
- **w** open webcam



