

# R Products



Benjamin Ackerman  
JHSPH Advanced Data Science  
October 1, 2018

# What can you make in R?

- .R scripts
- [R Markdown](#): reports/documents/[notebooks](#) (html/pdf/.doc)
- [R packages](#)
- [Shiny apps](#)
- [blogdown](#): blogs & websites
- [bookdown](#): books
  
- [Holiday cards!](#)

# Today we will focus on...

- .R scripts
- R Markdown: reports/documents/notebooks (html/pdf/.doc)
- **R packages**
- **Shiny apps**
- blogdown: blogs & websites
- bookdown: books
- Holiday cards!

# R Packages

# R Packages: Why Make Them?

“It is about saving yourself time.” - [Hilary Parker](#)

“Anything that can be automated, should be automated. Do as little as possible by hand. Do as much possible with functions.” - [Hadley Wickham](#)

# script.R

```
print("hi Ben")  
  
print("bye Ben")  
  
print("hi Sophie")  
  
print("bye Sophie")  
  
print("hi Jacob")  
  
...
```

## script.R

```
print("hi Ben")  
  
print("bye Ben")  
  
print("hi Sophie")  
  
print("bye Sophie")  
  
print("hi Jacob")  
  
...
```



## my\_functions.R

```
hi <- function(name) {  
    return(paste0("hi ", name))  
}  
  
bye <- function(name) {  
    return(paste0("bye ", name))  
}
```

## script.R

```
print("hi Ben")  
  
print("bye Ben")  
  
print("hi Sophie")  
  
print("bye Sophie")  
  
print("hi Jacob")  
  
...
```

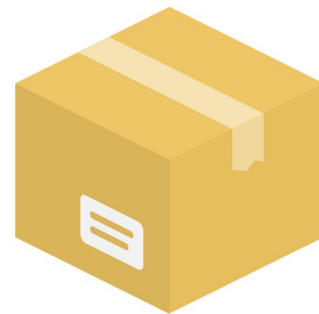


## my\_functions.R

```
hi <- function(name) {  
    return(paste0("hi ", name))  
}  
  
bye <- function(name) {  
    return(paste0("bye ", name))  
}
```



## gReetings

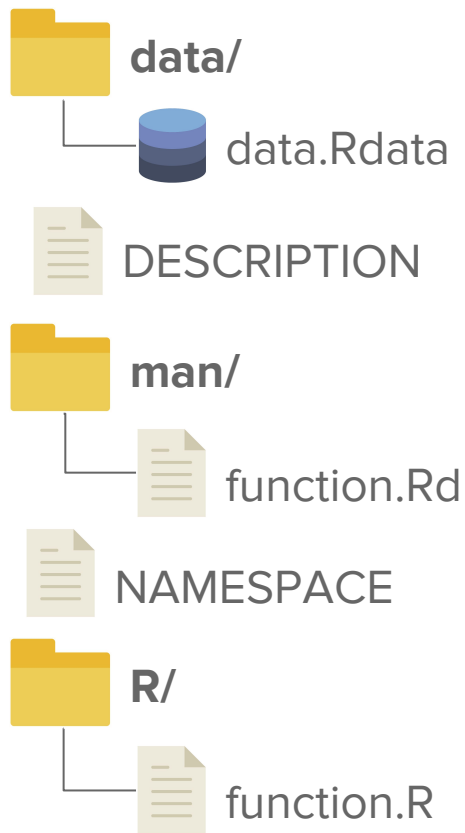


```
gReetings::hi()
```

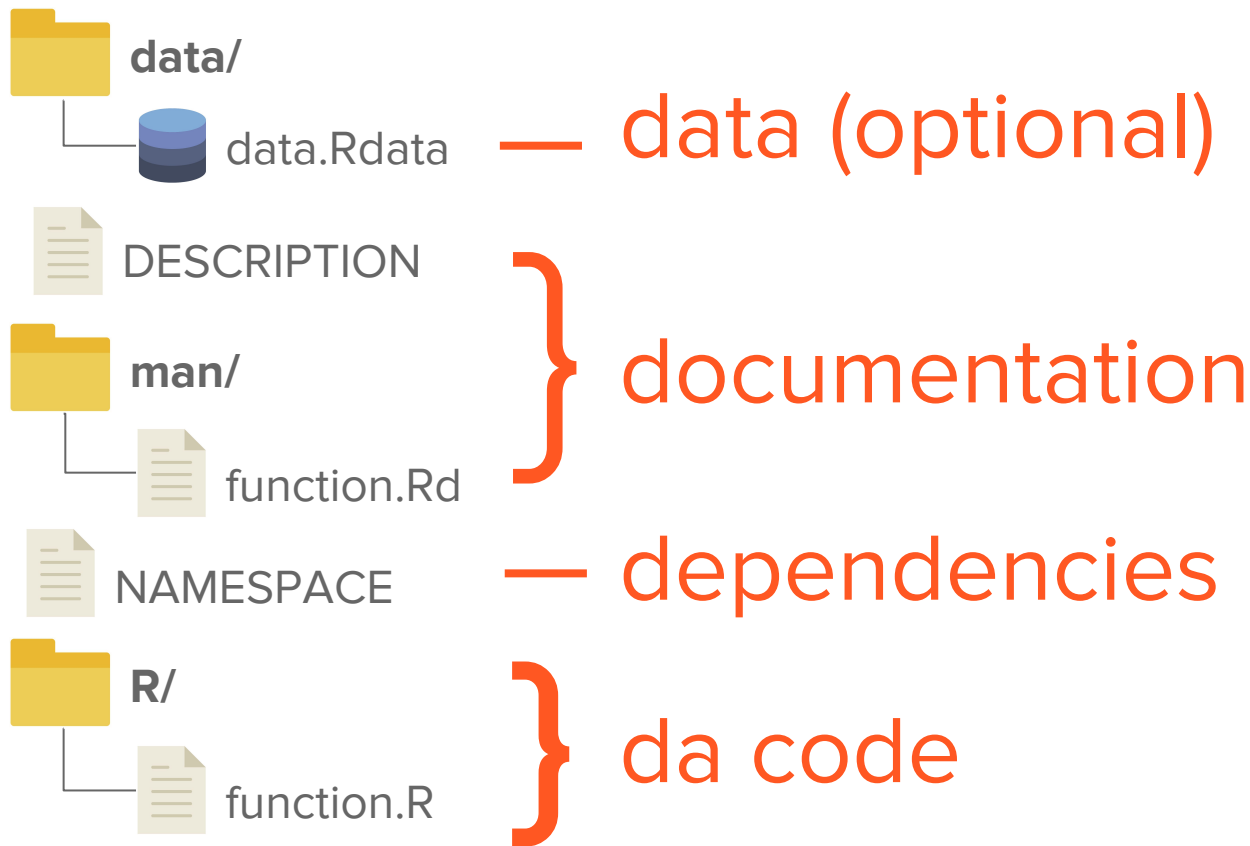
```
gReetings::bye()
```



# R Packages: Structure



# R Packages: Structure (the 4 d's)



# You can host R packages on...

- CRAN
- Bioconductor/Neuroconductor
- R-Forge
- GitHub

# You can host R packages *\*most easily\** on...

- CRAN
- Bioconductor/Neuroconductor
- R-Forge
- GitHub

 **Shiny Apps** 

# Shiny Apps: What Are They?



**candy vis app**

## ui.R

```
.....  
sidebarPanel(  
  checkboxInput(  
    "check",  
    "Select this",  
    FALSE)  
  ),  
  
mainPanel(  
  textOutput("response")  
)  
.....
```

## server.R

```
.....  
  
output$response = renderText({  
  if(input$check == TRUE){ "Yes"  
  if(input$check == FALSE){ "No"  
  })  
  
.....
```



## ui.R

```
.....  
sidebarPanel(  
  checkboxInput(  
    "check",  
    "Select this",  
    FALSE)  
  ),  
  
mainPanel(  
  textOutput("response")  
)  
.....
```

## server.R


```
.....  
  
output$response = renderText({  
  if(input$check == TRUE) {"Yes"}  
  if(input$check == FALSE) {"No"}  
})  
  
.....
```

## ui.R

```
.....  
sidebarPanel(  
  checkboxInput(  
    "check",  
    "Select this",  
    FALSE)  
  ),  
  
mainPanel(  
  textOutput("response")  
)  
.....
```

## server.R

```
.....  
  
{  
  output$response = renderText({  
    if(input$check == TRUE) {"Yes"}  
    if(input$check == FALSE) {"No"}  
  })  
}  
  
.....
```



# Some examples...

- [2017 GOP Tax Plan: “Grad Student” Tax](#)
- [Salaries of Stat/Biostat Professors](#)
- More in the [Shiny Gallery](#)

**Let's learn  
by doing!**

[\(Start R Products Tutorial\)](#)