**Class Project**

1. Write a shiny application with associated supporting documentation. The documentation should be thought of as whatever a user will need to get started using your application.
2. Deploy the application on Rstudio's shiny server
3. Share the application link by pasting it into the text box below
4. Share your server.R and ui.R code on github
5. The application must include the following:
6. Some form of input (widget: textbox, radio button, checkbox, ...)
7. Some operation on the ui input in sever.R
8. Some reactive output displayed as a result of server calculations
9. You must also include enough documentation so that a novice user could use your application.

The documentation should be at the Shiny website itself. Do not post to an external link.

OK, you've made your shiny app, now it's time to make your pitch. You get 5 slides (inclusive of the title slide) to pitch a your app. You're going to create a web page using Slidify or Rstudio Presenter with an html5 slide deck.

Here's what you need:

1. 5 slides to pitch our idea done in Slidify or Rstudio Presenter
2. Your presentation pushed to github or Rpubs
3. A link to your github or Rpubs presentation pasted into the text box below

Your presentation must satisfy the following:

1. It must be done in Slidify or Rstudio Presenter
2. It must be 5 pages
3. It must be hosted on github or Rpubs
4. It must contained some embedded R code that gets run when slidifying the document

Fibonacci sequence:

Server.R

fib <- function(n) ifelse(n<3, 1, fib(n-1)+fib(n-2))

shinyServer(function (input, output) {

output$Value <- renderText({ fib(input$n) })

}

)

ui.R

setwd("/Users/nicklukianoff/Desktop/Data Products/Project")

library(manipulate)

library(shiny)

shinyUI(pageWithSidebar(

headerPanel("Fun with Fibonacci"),

sidebarPanel(

h3('A Fibonacci sequence is a great way to watch numbers grow'),

h5('Try it out now ! Use the slider below to select a value'),

sliderInput("n", "Select a value", value = 3 , min = 3 , max = 30 , step = 1)

),

mainPanel(

h2('Fibonacci output'),

h5('The Fibonacci number is'),

textOutput("Value")

)

))

Next you have to run some code that you can copy from the shinyapps.io site. It looks like this:

shinyapps:: setAccountInfo(name='<ACCOUNT NAME>' ,

token='<TOKEN>' ,

secret='<SECRET>' )

This tells RStudio how to submit your code to shinyapps.io and gives it the permissions to do so.

Now, change to the directory where your server.R and ui.R files are at and you can submit your

code with:

deployApp(appName = "Fibonacci\_App" )

Slidify:

To run it type: slidify("index.Rmd" )

Start out with: Author(“Promote\_Fibonacci”)

Framework: io2012

Hitheme: tomorrow

Mode: selfcontained

``` Rmd

## Fun with Fibonacci !

Project for Data Products

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## Background Information

Leonardo Bonacci was an Italian mathematician, considered to be "the most talented Western mathematician of the Middle Ages". He worked in the early part of the 1200’s.

He was one of the first people to introduce the Hindu-Arabic number system into Europe - the positional system we use today - based on ten digits with its decimal point and a symbol for zero. Before this, the Roman system was used.

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## Fibonacci’s Problem

Fibonacci’s book introduced this numerical series as a problem of breeding rabbits. Here’s what he had to say:

**How Many Pairs of Rabbits Are Created by One Pair in One Year**

A certain man had one pair of rabbits together in a certain enclosed place, and one wishes to know how many are created from the pair in one year when it is the nature of them in a single month to bear another pair, and in the second month those born to bear also.

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## Fibonacci’s Solution

Because the above written pair in the first month bore, you will double it; there will be two pairs in one month.   
One of these, namely the first, bears in the second month, and thus there are in the second month 3 pairs;  
of these in one month two are pregnant and in the third month 2 pairs of rabbits are born, and thus there are 5 pairs in the month;  
...  
there will be 144 pairs in this [the tenth] month;  
to these are added again the 89 pairs that are born in the eleventh month; there will be 233 pairs in this month.  
To these are still added the 144 pairs that are born in the last month; there will be 377 pairs, and this many pairs are produced from the above written pair in the mentioned place at the end of the one year.

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## Fibonacci’s Algorithm

While Fibonacci didn’t invent the algorithm that bears his name, he is credited with its use, and his name became associated with it.

The algorithm itself is deceptively simple.

```{r}

fib <- function(n) ifelse(n<3, 1, fib(n-1)+fib(n-2))

```

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```