21BDS0340

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Programming for Data Science Lab

Digital Assignment – V

Code

```
install.packages("shiny")
install.packages("ggplot2")
install.packages("magrittr")
library(shiny)
library(ggplot2)
library(magrittr)

ui <- fluidPage(
  titlePanel("21BDS0340"),
  sidebarLayout(
    sidebarPanel(
      sliderInput("num_points", "Number of Points:", min = 10, max = 100, value =
50),
      actionButton("generate", "Generate Plot")
    ),
    mainPanel(
      plotOutput("scatterPlot")
    )
  )
)

server <- function(input, output) {
  generate_data <- function(num_points) {
    data.frame(
      x = rnorm(num_points),
      y = rnorm(num_points)
    )
  }

  output$scatterPlot <- renderPlot({
    generate_data(input$num_points) %>%
      ggplot(aes(x = x, y = y)) +
      geom_point() +
      labs(title = "Random Scatter Plot", x = "X axis", y = "Y axis")
  })

  observeEvent(input$generate, {
    output$scatterPlot <- renderPlot({
      generate_data(input$num_points) %>%
        ggplot(aes(x = x, y = y)) +
        geom_point() +
```

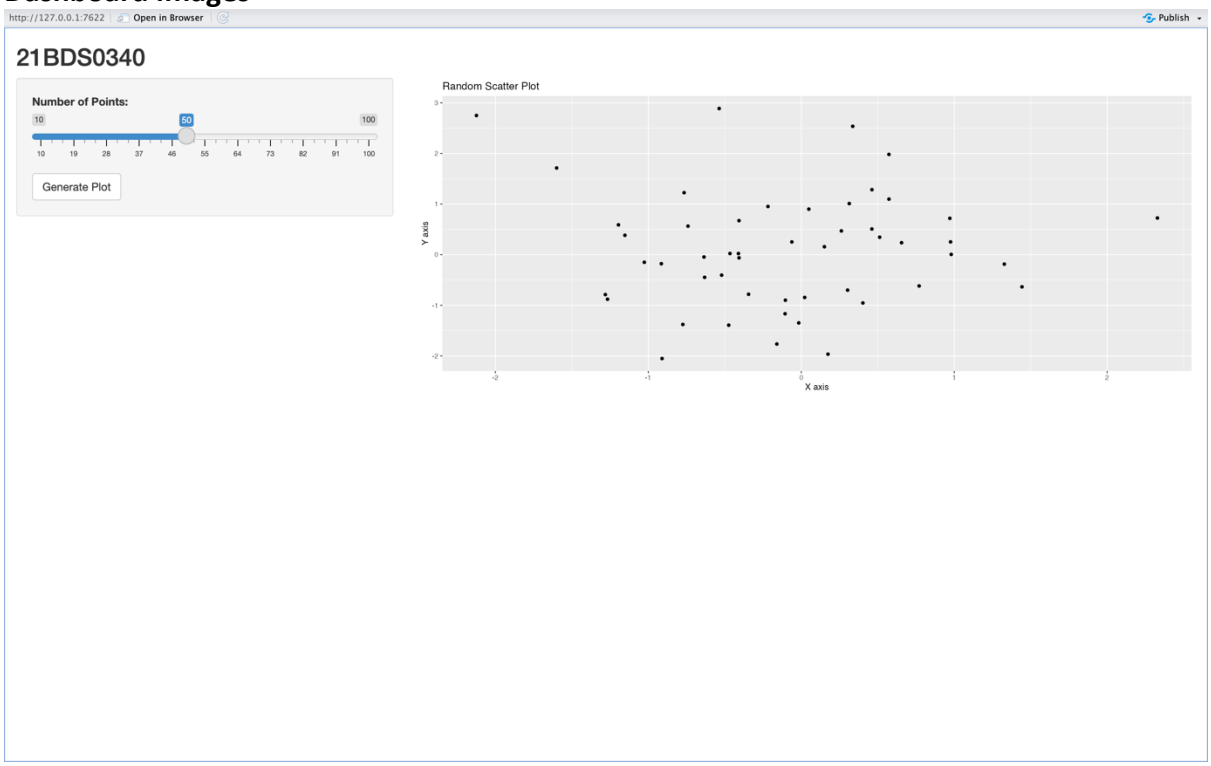
```
        labs(title = "Random Scatter Plot", x = "X axis", y = "Y axis")
    })
  })
}

shinyApp(ui = ui, server = server)
```

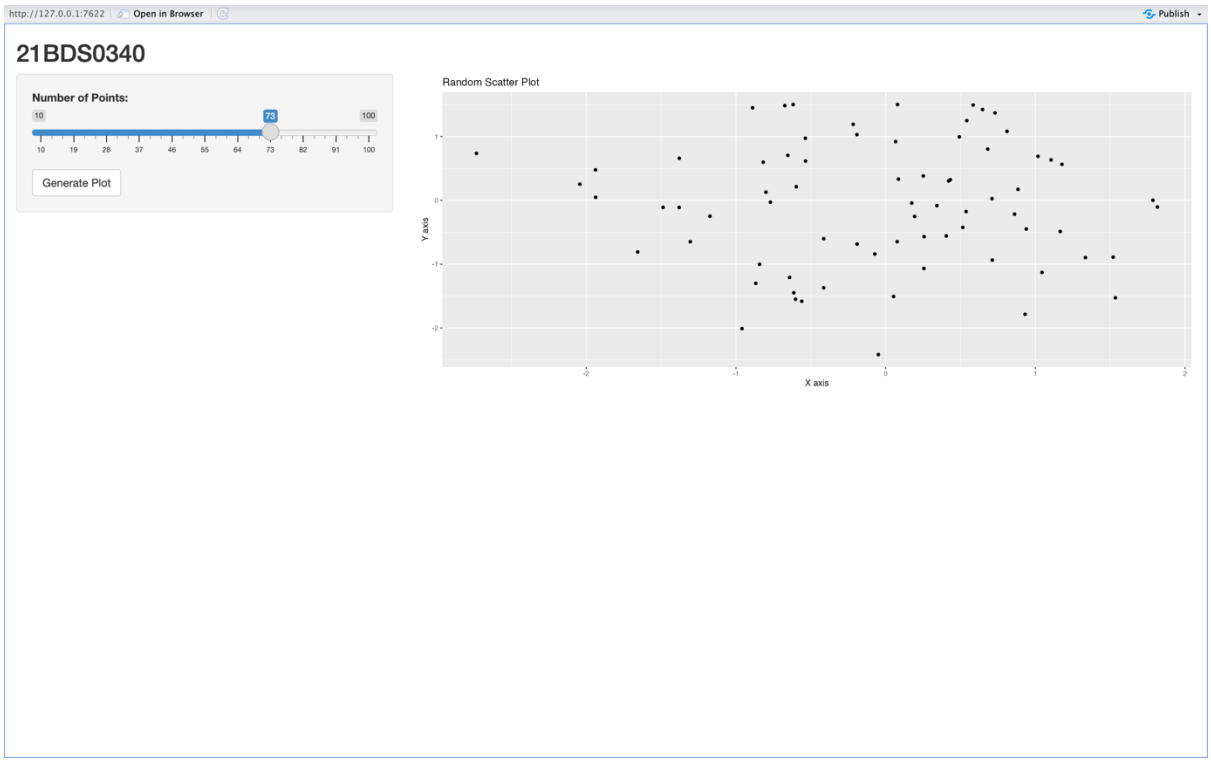
Output

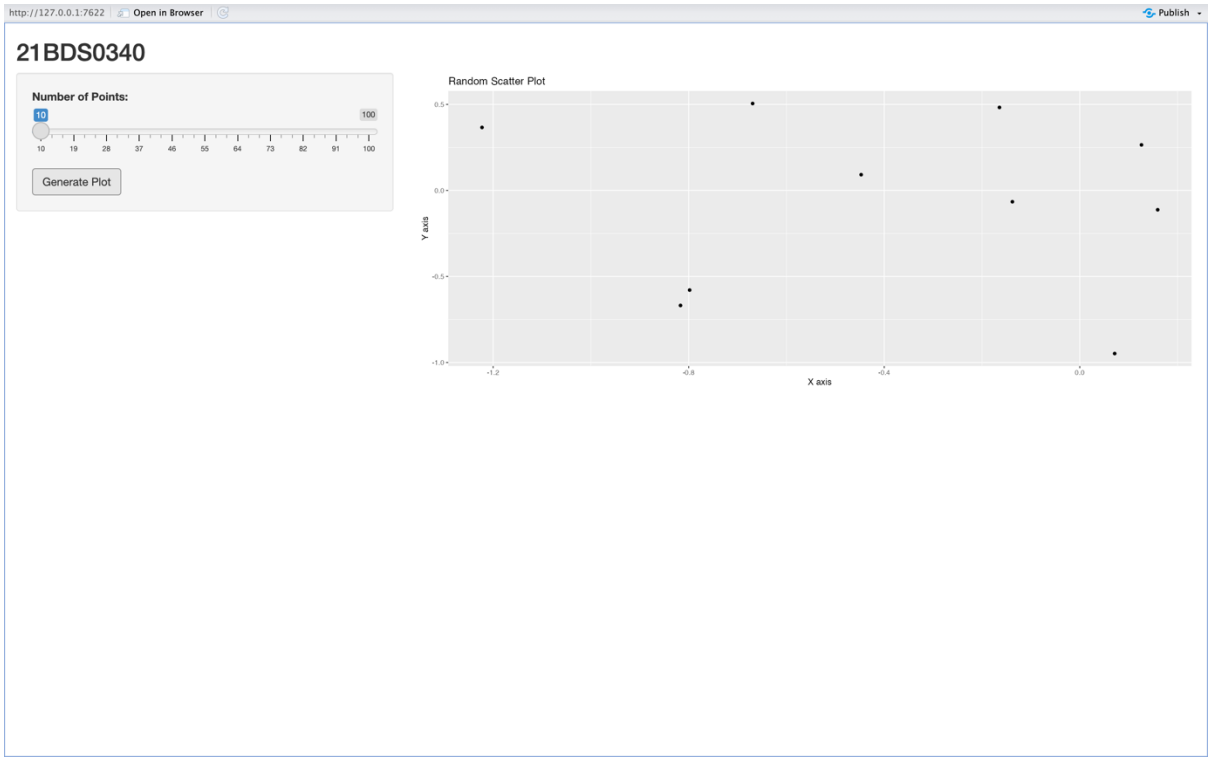
```
> install.packages("shiny")
trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-
arm64/contrib/4.2/shiny_1.8.1.1.tgz'
Content type 'application/x-gzip' length 4764151 bytes (4.5 MB)
==================================================
downloaded 4.5 MB


The downloaded binary packages are in
  /var/folders/2f/9fz2wbqj7vlcygt681kl2k0m0000gn/T//RtmpQWcJD8/downloaded_packages
> install.packages("ggplot2")
trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-
arm64/contrib/4.2/ggplot2_3.5.0.tgz'
Content type 'application/x-gzip' length 4830392 bytes (4.6 MB)
==================================================
downloaded 4.6 MB


The downloaded binary packages are in
  /var/folders/2f/9fz2wbqj7vlcygt681kl2k0m0000gn/T//RtmpQWcJD8/downloaded_packages
> install.packages("magrittr")
trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-
arm64/contrib/4.2/magrittr_2.0.3.tgz'
Content type 'application/x-gzip' length 231132 bytes (225 KB)
==================================================
downloaded 225 KB


The downloaded binary packages are in
  /var/folders/2f/9fz2wbqj7vlcygt681kl2k0m0000gn/T//RtmpQWcJD8/downloaded_packages
> library(shiny)
> library(ggplot2)
> library(magrittr)
> ui <- fluidPage(
+   titlePanel("21BDS0340"),
+   sidebarLayout(
+     sidebarPanel(
+       sliderInput("num_points", "Number of Points:", min = 10, max = 100, value =
50),
+       actionButton("generate", "Generate Plot")
+     ),
+     mainPanel(
+       plotOutput("scatterPlot")
```

```
+     )
+   )
+ )
> server <- function(input, output) {
+   generate_data <- function(num_points) {
+     data.frame(
+       x = rnorm(num_points),
+       y = rnorm(num_points)
+     )
+   }
+
+   output$scatterPlot <- renderPlot({
+     generate_data(input$num_points) %>%
+       ggplot(aes(x = x, y = y)) +
+       geom_point() +
+       labs(title = "Random Scatter Plot", x = "X axis", y = "Y axis")
+   })
+
+   observeEvent(input$generate, {
+     output$scatterPlot <- renderPlot({
+       generate_data(input$num_points) %>%
+         ggplot(aes(x = x, y = y)) +
+         geom_point() +
+         labs(title = "Random Scatter Plot", x = "X axis", y = "Y axis")
+     })
+   })
+ }
> shinyApp(ui = ui, server = server)

Listening on http://127.0.0.1:7622
```

Dashboard Images






http://127.0.0.1:7622
Open in Browser
Publish
21BDS0340
Number of Points:
10
100
10 19 28 37 46 55 64 73 82 91 100
Generate Plot
Random Scatter Plot
0.5
0.0
-0.5
-1.0
Y axis
-1.2
-0.8
-0.4
0.0
X axis