STA 3100 Programming With Data in R: Shiny Apps

STA 3100 Programming With Data in R - Shiny Apps Lecture Notes

Introduction

Shiny apps are interactive web applications that are built using the R programming language. They allow users to interact with data and create visualizations in a web browser. Shiny apps are a great way to share data and analysis with others, as they can be easily deployed to the web.

Key Concepts

- Shiny apps are interactive web applications that are built using the R programming language.

- Shiny apps allow users to interact with data and create visualizations in a web browser.

- Shiny apps are a great way to share data and analysis with others, as they can be easily deployed to the web.

Building a Shiny App

Building a Shiny app is relatively simple. The basic structure of a Shiny app consists of two parts: the user interface (UI) and the server. The UI is written in HTML and defines the layout of the app. The server is written in R and contains the code that processes the user input and generates the output.

UI

The UI of a Shiny app is written in HTML and defines the layout of the app. It is composed of a set of widgets, such as text boxes, drop-down menus, and buttons, which allow the user to interact with the app. The following code example shows a basic UI for a Shiny app:

```
Start of Code
```
```
ui <- fluidPage(
    titlePanel("My Shiny App"),
    sidebarLayout(
        sidebarPanel(
            textInput("text", "Text Input"),
            selectInput("select", "Select Input",
                                choices = c("A", "B", "C")
        ),
        mainPanel(
            plotOutput("plot")
        )
    )
)
```
```
```

End of Code

Server

The server of a Shiny app is written in R and contains the code that processes the user input and generates the output. It is composed of a set of reactive functions, which take the user input as arguments and return the output. The following code example shows a basic server for a Shiny app:

Start of Code
```
server <- function(input, output) {
    output$plot <- renderPlot({
        plot(input$text, input$select)
    })
}
```
End of Code

Once the UI and server have been written, they can be combined into a single Shiny app object. This object can then be deployed to a web server to make the app available to users.

Practice Multiple Choice Questions

Q1. What is a Shiny app?

A. A web application built using the R programming language

B. A web application built using the Python programming language

C. A web application built using HTML

D. A web application built using JavaScript

Answer: A. A web application built using the R programming language