Question 6: Shiny App

Number of telephones by region and year

Code

Below is the raw code used to generate the Shiny app.

```r
# Shiny Web App
# Number of telephones by region and year

library(shiny)
library(datasets)

# Define UI for application, including sidebar and placeholder for barplot
ui <- shinyUI(fluidPage(

  # Application title
  titlePanel("Number of telephones by region and year"),

  # Sidebar with checkboxes for region and year and dropdown selections
  sidebarLayout(
    sidebarPanel(

       # Checkboxes
      checkboxInput("region_check", "Region", TRUE),
      checkboxInput("year_check", "Year", FALSE),

      # Dropdown options
      selectInput("region", "Region:",
                  choices=colnames(WorldPhones)),
      selectInput("year", "Year:",
                  choices=rownames(WorldPhones)),

      # Footer
      hr(),
      helpText("Data from AT&T (1961) The World's Telephones.")
    ),

    # Show generated barplot of the phones by region / year
    mainPanel(
      plotOutput("phonePlot")
    )
  )
))
```

```r
# Define server logic required to draw barplot
server <- shinyServer(function(input, output) {

  output$phonePlot <- renderPlot({
    # Select data
    if (input$region_check) {plotdata <- WorldPhones[,input$region]}
    else if (input$year_check) {plotdata <- WorldPhones[input$year,]}
    else {plotdata <- WorldPhones[,input$region]}

    # Set title
    if (input$region_check) {plottitle <- input$region}
    else if (input$year_check) {plottitle <- input$year}
    else {plottitle <- input$region}

    # Set x axis label
    if (input$region_check) {xaxis <- 'Year'}
    else if (input$year_check) {xaxis <- 'Region'}
    else {xaxis <- 'Year'}

    # Draw bar graph
    barplot(plotdata,
            col=c('blue'),
            main=plottitle,
            ylab='Number of Telephones (K)',
            xlab=xaxis)
  })
})

# Run the application
shinyApp(ui = ui, server = server)
```
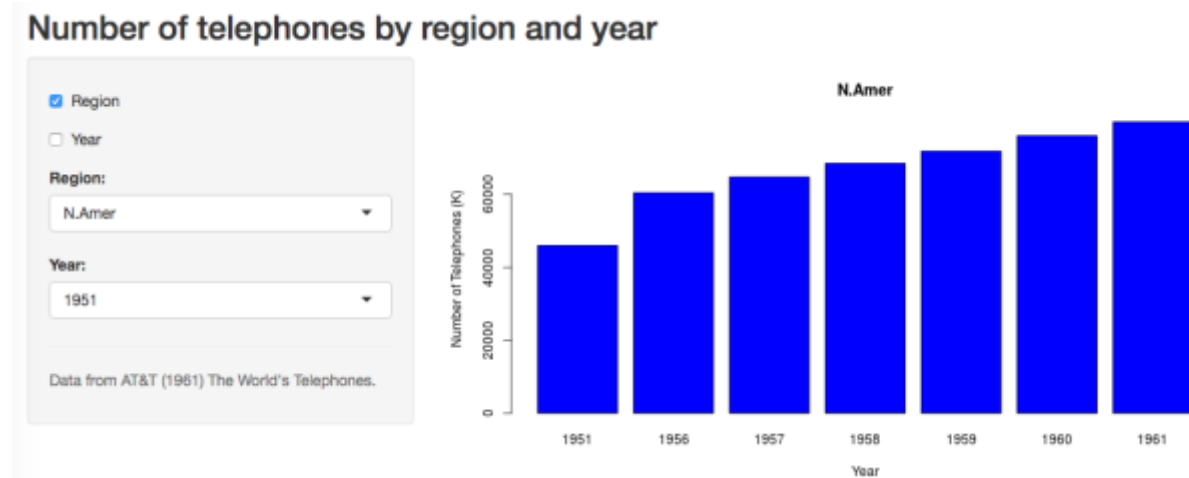
Sample Output

Below are screenshots of different views of the Shiny app, including different input selection.
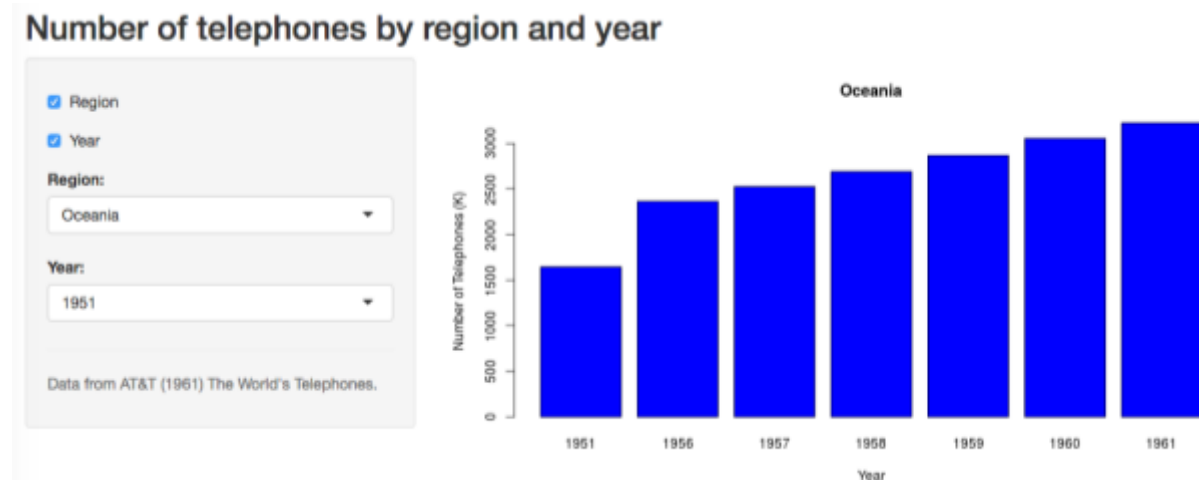
Default view:

Region options:

Select a different region, with both check boxes selected:
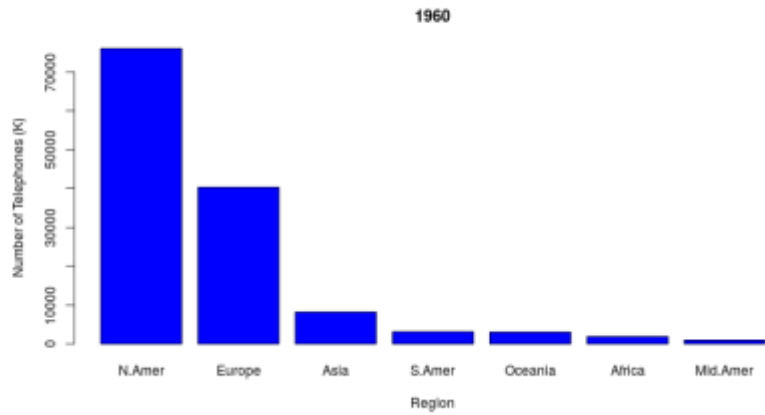
Select only year:

Number of telephones by region and year

☐ Region

☑ Year

Region:

N.Amer ▼

Year:

1960 ▼

Data from AT&T (1961) The World's Telephones.

Year options:

☐ Region

☑ Year

Region:

N.Amer ▼

Year:

1961 ▲

1961
1956
1957
1958
1959
1960
1961