Problem 4

Yufei Yin

Question 4

Modify an app from the Shiny App for data visualization from the gallery here: https://shiny.rstudio.com/gallery/ so that the dataset used is different (5 marks).

Remember to change units and axis labels and titles, where appropriate. You can use your own dataset, or any dataset of your choice. You may choose one of the datasets on the UCI Machine Learning repository: https://archive.ics.uci.edu/ml/index.php

Provide a short description of your app, provide the code, and provide a few screenshots of your app working.

ui.R

```
# k-means only works with numerical variables,
# so don't give the user the option to select
# a categorical variable

poke = read.csv('pokemon_2019.csv')
poke = poke[,c(5:11,20,21)]
vars = names(poke)

pageWithSidebar(
  headerPanel('Pokemon k-means clustering'),
  sidebarPanel(
    selectInput('xcol', 'X Variable', vars),
    selectInput('ycol', 'Y Variable', vars, selected = vars[[2]]),
    numericInput('clusters', 'Cluster count', 3, min = 1, max = 9)
  ),
  mainPanel(
    plotOutput('plot1')
  )
)
```

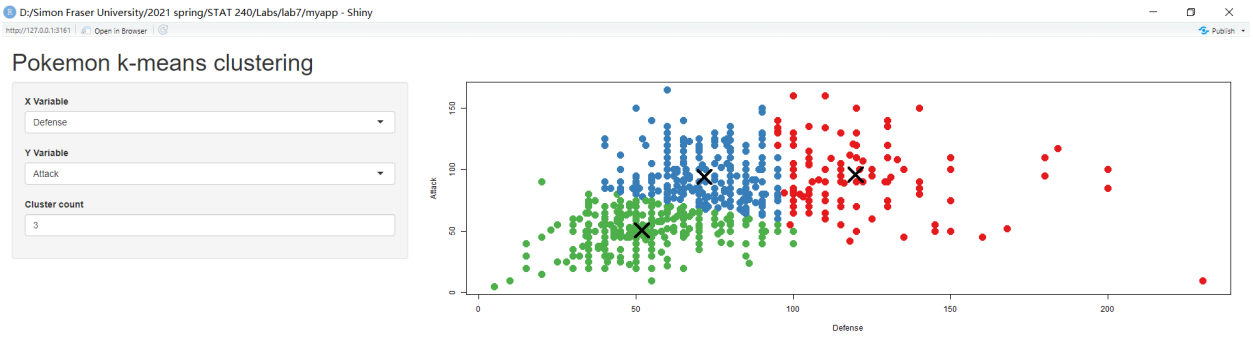
server.R

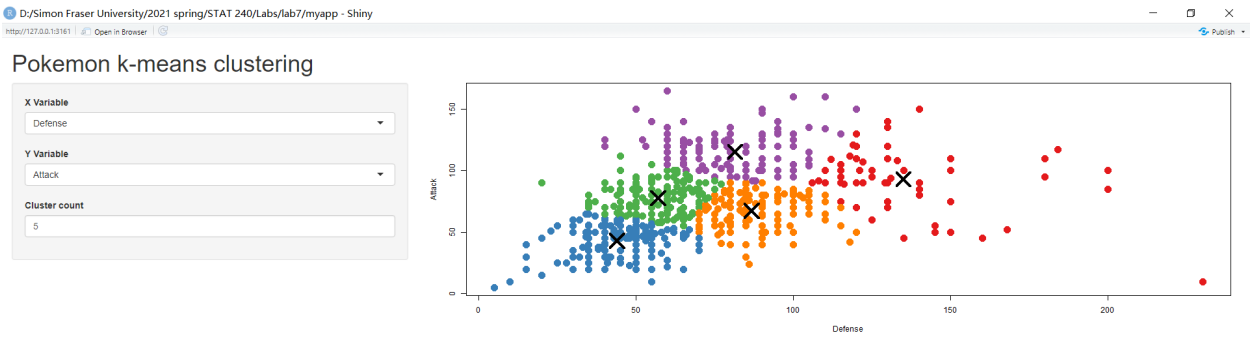
```
function(input, output, session) {

  poke = read.csv('pokemon_2019.csv')

  # Combine the selected variables into a new data frame
  selectedData <- reactive({
    poke[, c(input$xcol, input$ycol)]
  })
```

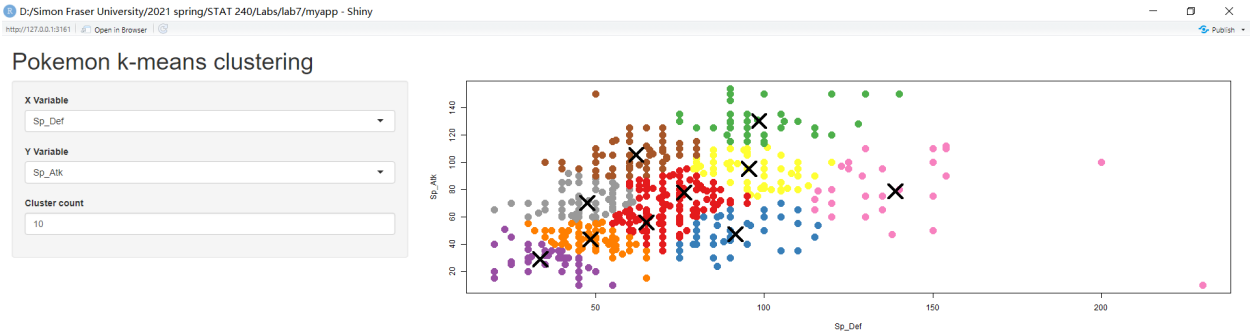
```
  clusters <- reactive({
    kmeans(selectedData(), input$clusters)
  })

  output$plot1 <- renderPlot({
    palette(c("#E41A1C", "#377EB8", "#4DAF4A", "#984EA3",
              "#FF7F00", "#FFFF33", "#A65628", "#F781BF", "#999999"))

    par(mar = c(5.1, 4.1, 0, 1))
    plot(selectedData(),
         col = clusters()$cluster,
         pch = 20, cex = 3)
    points(clusters()$centers, pch = 4, cex = 4, lwd = 4)
  })

}
```

This app demonstrates the cluster analysis of pokemon dataset we used in previous labs. The method of cluster analysis we applied in this app is kmeans.

output screenshots







Browser

https://shiny.rcg.sfu.ca/u/yya175/myapp