# dashboard.R

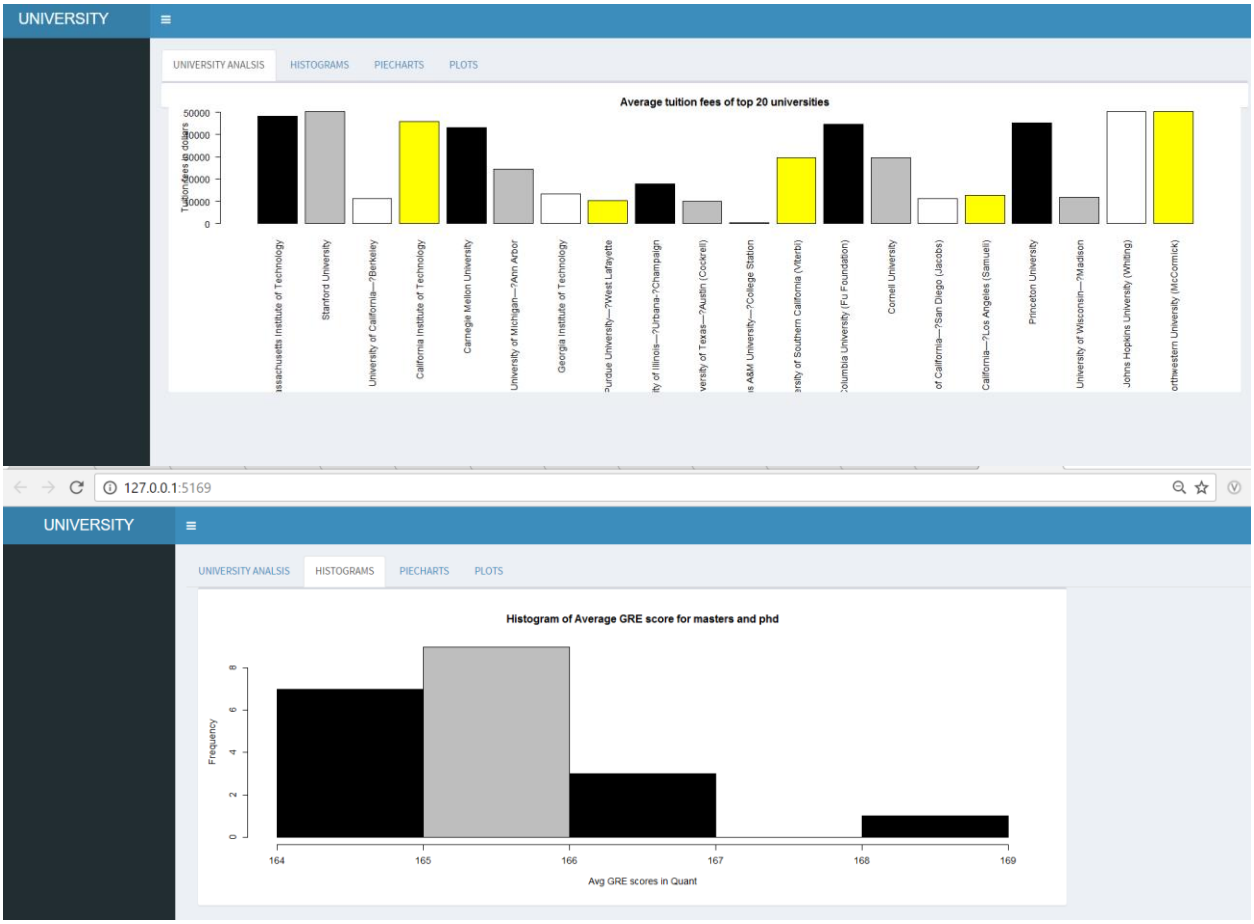
Fri May 05 10:03:01 2017

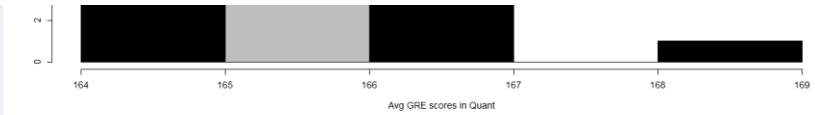
```
## load packages for creating dashboard
library(shiny)
library(shinydashboard)

##
## Attaching package: 'shinydashboard'

## The following object is masked from 'package:graphics':
##
##     box

library(quantmod)

## Loading required package: xts

## Loading required package: zoo

##
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric

## Loading required package: TTR

## Version 0.4-0 included new data defaults. See ?getSymbols.

################## this section decides the layout and front end of the dashbo
ard ###############
ui<-dashboardPage(
  dashboardHeader(title = "UNIVERSITY ANALYSIS AND VISUALIZATION"),
  ########################################################################
  dashboardSidebar(),
  ########################################################################
  dashboardBody(
    tabsetPanel(

      ############ this is the first tab in the dashboard
      tabPanel(title  = "UNIVERSITY ANALSIS",

               box( plotOutput("plot1"),height = 35,width = 25)

      ),
```

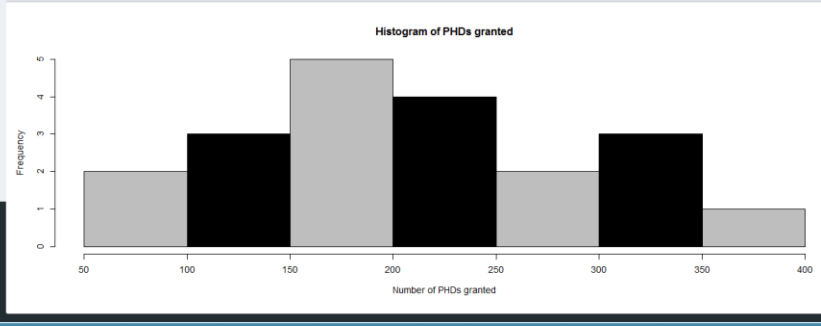
```
      ####### second tab #################
      tabPanel(title  = "HISTOGRAMS",

               box(plotOutput("plot2"),width = 10),
               box(plotOutput("plot3"),width = 10)


      ),

      ########## third tab ##################
      tabPanel(title = "PIECHARTS",
                box(plotOutput("plot4")),
                box(plotOutput("plot5"))

      ),

      ################ fourth tab #################
      tabPanel(title  = "PLOTS",
               fluidRow(
               plotOutput("plot6"),
               plotOutput("plot7")
              )
      )
    )))


######################  this section decides the back end of the dashboard
############################
server <- function(input,output){

  ################ importing the university data file by converting .xslx int
o. csv
  output$plot1<-renderPlot({

    university_ranks <- read.csv("university.csv",colClasses = "character",as
.is = c("Ph.D.s.granted","Rank","School.name","Total.graduate.engineering.enr
ollment","Avg.GRE.Quant.Score.masters.and.PhD."))

    ######################## creating a subset of university data for top 20 u
niversities
    univ_subset <- university_ranks[1:20,]
    xy <- substr(univ_subset$Tuition,2,7)
    xy[11] <- substr(xy[11],1,3)
    str(xy)
    x <- sub(",","",xy)
    y<-as.numeric(x)
    ################## creating the bar plot of tuition fees for top 20 univs
    par(mar=c(16,5,2,1))
```

```
    barplot(y,names.arg =univ_subset$School.name,las=2,col=c("black","grey","
white","yellow"),xpd = TRUE,ylab="Tuition fees in dollars",main = "Average tu
ition fees of top 20 universities")
  #  dotchart(as.numeric(univ_subset$Total.graduate.engineering.enrollment),l
abels = univ_subset$School.name)
    })

  ############ hitsograms on univ data #############
  output$plot2<-renderPlot({
  abc<-  as.numeric(univ_subset$Avg.GRE.Quant.Score.masters.and.PhD.)
  hist(abc,main = "Histogram of Average GRE score for masters and phd",col =
c("black","grey"),xlab = "Avg GRE scores in Quant")
  })


  output$plot3<-renderPlot({

    str(univ_subset)
    abc1<-  as.numeric(univ_subset$Ph.D.s.granted)
    abc1
    hist(abc1,main = "Histogram of PHDs granted",col = c("grey","black"),xlab
="Number of PHDs granted")

  })

  ################### pie charts on univ data
  output$plot4<-renderPlot({

   pie(abs(as.numeric(univ_subset$Peer.assessment.score..out.of.5.)),labels =
univ_subset$School.name,main = "Peer assessment score out of 5 for top 20 uni
versities",col = c("black","grey","white","yellow","cyan"))
  })


  output$plot5<-renderPlot({
    pie(abs(as.numeric(univ_subset$Ph.D.s.granted)),labels = univ_subset$Scho
ol.name,main = "PHDs granted by top 20 universities",col=c("black","grey","wh
ite","yellow","cyan"))
  })


  ############## plotting overall acceptance rate
    output$plot6 <- renderPlot(

            {

              par(mar=c(16,5,2,1))

            plot(factor(univ_subset$School.name),as.numeric(sub("%","",univ_s
```

```
ubset$Overall.acceptance.rate))/100,las=2,main="Overall acceptance rate of to
p 20 universities", ylab="acceptane rate in percentages",xlab="universities",
col=c("red","blue"))
      })


    ############## plotting faculty membership
    output$plot7 <- renderPlot(
      {
        par(mar=c(16,5,2,1))
        plot(factor(univ_subset$School.name),as.numeric(sub("%","",univ_subse
t$Faculty.membership.in.National.Academy.of.Engineering))/100,las=2,main="Fac
ulty membership in National Academy of Engineering from top 20 universities",
ylab="Membership proportion in percentages",xlab="universities")
      })

}

############## function to create app for shiny dashboard
shinyApp(ui,server)




############################### output of dashboard ################
```

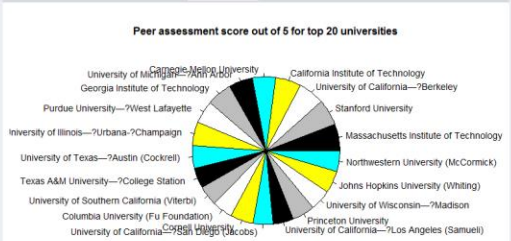

UNIVERSITY
UNIVERSITY ANALSIS
HISTOGRAMS
PIECHARTS
PLOTS
Average tuition fees of top 20 universities
Tuition fees in dollars
50000
40000
30000
20000
10000
0
Stanford University
University of California—?Berkeley
California Institute of Technology
Carnegie Mellon University
University of Michigan—?Ann Arbor
Georgia Institute of Technology
Princeton University
University of Wisconsin—?Madison
Johns Hopkins University (Whiting)
127.0.0.1:5169
UNIVERSITY
UNIVERSITY ANALSIS
HISTOGRAMS
PIECHARTS
PLOTS
Histogram of Average GRE score for masters and phd
Frequency
0
2
4
6
8
164
165
166
167
168
169
Avg GRE scores in Quant

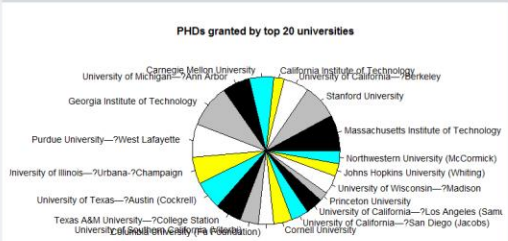


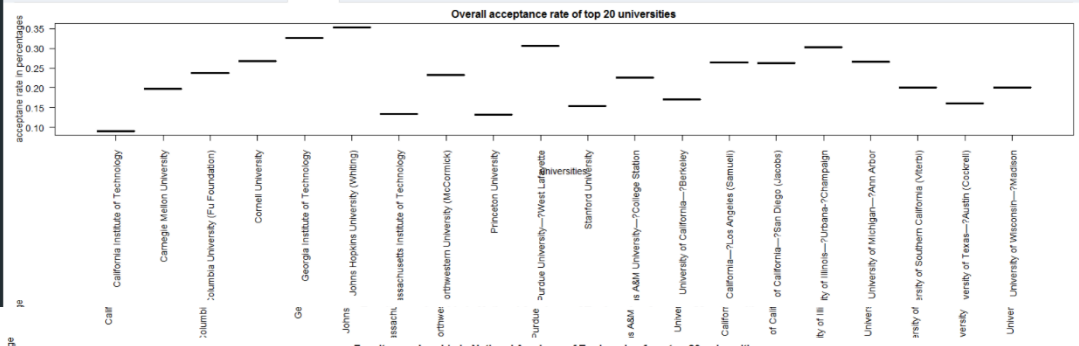
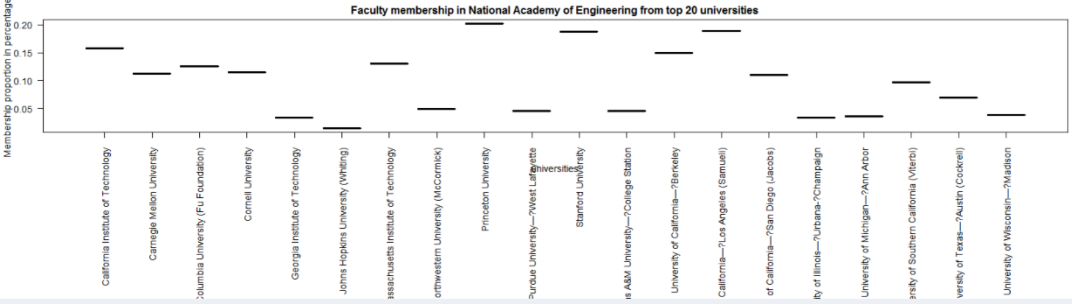




UNIVERSITY

UNIVERSITY ANALSIS | HISTOGRAMS | PIECHARTS | PLOTS




UNIVERSITY

UNIVERSITY ANALSIS | HISTOGRAMS | PIECHARTS | PLOTS