

DSC640_Exercise4_2_Asumbaraju_R

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Exercise4.2: 1 heat map, 1 spatial chart and 1 contour chart using R

Import libraries

```
library("ggplot2")
library("ggmap")

## Warning: package 'ggmap' was built under R version 4.0.5
## Google's Terms of Service: https://cloud.google.com/maps-platform/terms/.
## Please cite ggmap if you use it! See citation("ggmap") for details.

library("plotly")

## Warning: package 'plotly' was built under R version 4.0.5
##
## Attaching package: 'plotly'

## The following object is masked from 'package:ggmap':
##
##     wind

## The following object is masked from 'package:ggplot2':
##
##     last_plot

## The following object is masked from 'package:stats':
##
##     filter

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

library("orca")

library(rmarkdown)
.libPaths()
```

```
## [1] "\\area51/Users/aditya.sumbaraju/R/win-library/4.0"
## [2] "C:/Program Files/R/R-4.0.3/library"

.First <- function(){
  .libPaths(c("Z:/R/win-library/4.0", "C:/Program Files/R/R-4.0.3/library"))
}
```

Data Import

```
nba_df <- read.csv('C:/BU/DSC640/wk7-8/data/ppg2008.csv')
head(nba_df)
```

```
##           Name  G  MIN  PTS  FGM  FGA  FGP  FTM  FTA  FTP  X3PM  X3PA
X3PP ORB
## 1  Dwyane Wade  79 38.6 30.2 10.8 22.0 0.491 7.5 9.8 0.765 1.1 3.5
0.317 1.1
## 2  LeBron James  81 37.7 28.4 9.7 19.9 0.489 7.3 9.4 0.780 1.6 4.7
0.344 1.3
## 3  Kobe Bryant  82 36.2 26.8 9.8 20.9 0.467 5.9 6.9 0.856 1.4 4.1
0.351 1.1
## 4 Dirk Nowitzki  81 37.7 25.9 9.6 20.0 0.479 6.0 6.7 0.890 0.8 2.1
0.359 1.1
## 5 Danny Granger  67 36.2 25.8 8.5 19.1 0.447 6.0 6.9 0.878 2.7 6.7
0.404 0.7
## 6 Kevin Durant  74 39.0 25.3 8.9 18.8 0.476 6.1 7.1 0.863 1.3 3.1
0.422 1.0
##   DRB TRB AST STL BLK  TO  PF
## 1 3.9 5.0 7.5 2.2 1.3 3.4 2.3
## 2 6.3 7.6 7.2 1.7 1.1 3.0 1.7
## 3 4.1 5.2 4.9 1.5 0.5 2.6 2.3
## 4 7.3 8.4 2.4 0.8 0.8 1.9 2.2
## 5 4.4 5.1 2.7 1.0 1.4 2.5 3.1
## 6 5.5 6.5 2.8 1.3 0.7 3.0 1.8
```

```
costco_df <- read.csv('C:/BU/DSC640/wk7-8/data/costcos-geocoded.csv')
head(costco_df)
```

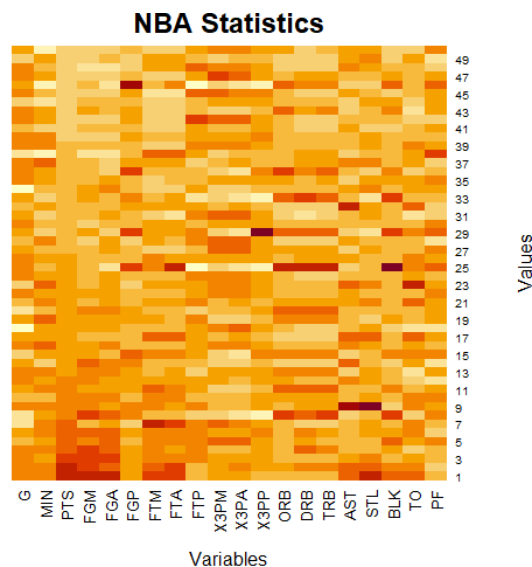
```
##           Address           City  State  Zip.Code Latitude
Longitude
## 1 1205 N. Memorial Parkway Huntsville Alabama 35801-5930 34.74309 -
86.60096
## 2 3650 Galleria Circle Hoover Alabama 35244-2346 33.37765 -
86.81242
## 3 8251 Eastchase Parkway Montgomery Alabama 36117 32.36389 -
86.15088
## 4 5225 Commercial Boulevard Juneau Alaska 99801-7210 58.35920 -
134.48300
## 5 330 West Dimond Blvd Anchorage Alaska 99515-1950 61.14327 -
149.88422
## 6 4125 DeBarr Road Anchorage Alaska 99508-3115 61.21081 -
149.80434
```

```
Sys.getenv("RSTUDIO_PANDOC")
## [1] "C:/Program Files/RStudio/bin/pandoc"
```

Heatmap

```
set.seed(123) # Set seed
for reproducibility
mat =as.matrix(nba_df[, -1])

heatmap(mat, Colv = NA, Rowv = NA, scale='column',xlab="Variables",
ylab="Values", main="NBA Statistics")
```



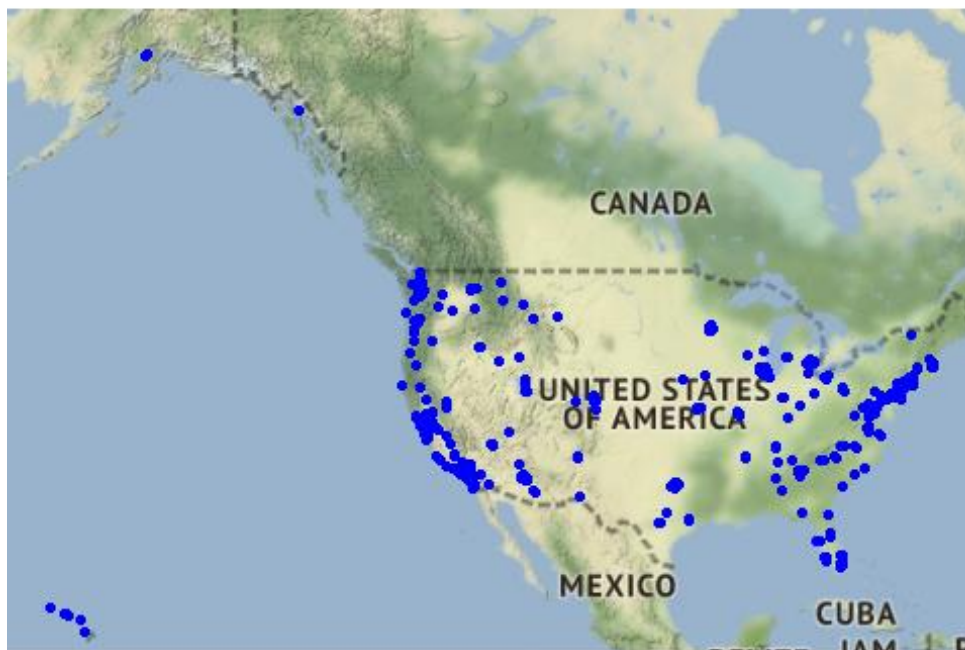
reference: <https://jcoliver.github.io/learn-r/006-heatmaps.html>

spatial chart

```
qmapplot(Longitude, Latitude, data = costco_df, maptype = "toner-lite", color =
I("blue"))

## Using zoom = 3...

## Source : http://tile.stamen.com/terrain/3/0/2.png
## Source : http://tile.stamen.com/terrain/3/1/2.png
## Source : http://tile.stamen.com/terrain/3/2/2.png
## Source : http://tile.stamen.com/terrain/3/0/3.png
## Source : http://tile.stamen.com/terrain/3/1/3.png
## Source : http://tile.stamen.com/terrain/3/2/3.png
```



reference: <https://cran.r-project.org/web/packages/ggmap/ggmap.pdf>

contour chart

```
library(png)

fname = "C:/BU/DSC640/wk7-8/Contour.png"

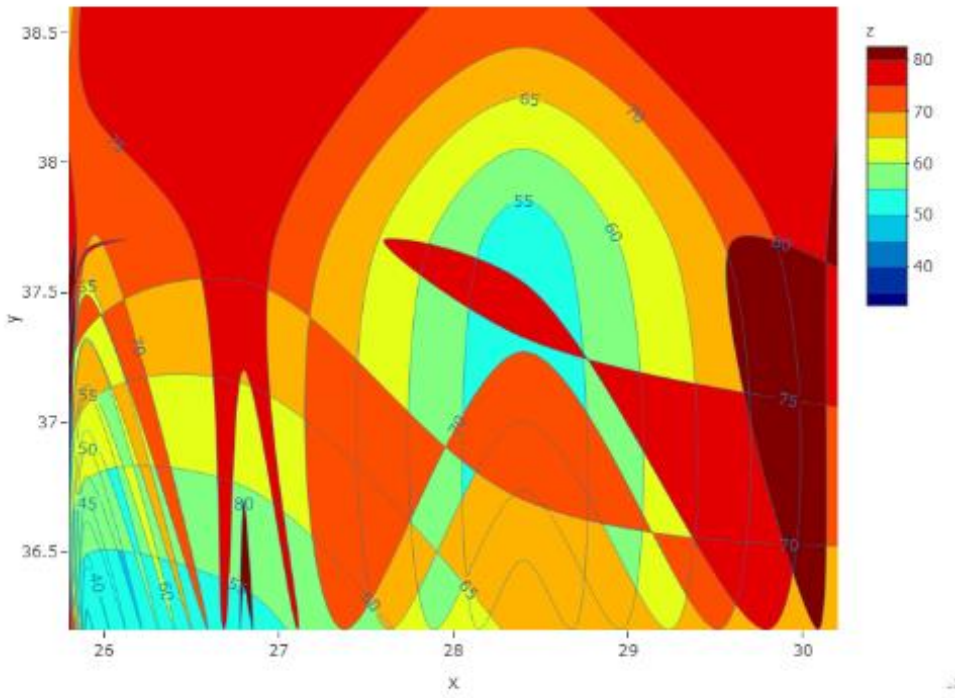
x=nba_df$PTS
y=nba_df$MIN
z=matrix(c(nba_df$G), nrow = 5, ncol = 5)
df <- data.frame(x=x,y=y,z=z)
p <- plotly::plot_ly(data = nba_df, x=~x,y=~y, z=~z, type = "contour",
  colorscale='Jet', autocontour = T,
  contours = list( start = 0,end = 8,size = 2,showlabels =
TRUE,filename=fname, image='png', image_filename=fname))

library(EBImage)

##
## Attaching package: 'EBImage'

## The following object is masked from 'package:plotly':
##
##      toRGB
```

```
img = readImage("C:/BU/DSC640/wk7-8/Contour.png")  
display(img, method = "raster")
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.