A1_Rishabh-Rawat.R

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Shark Tank is an American business really television series. The show features a panel of investors called "sharks," who decide whether to invest as entrepreneurs make business presentations on their company or product. The sharks often find weaknesses and faults in an entrepreneur's valuation of their company, product, or business model.

My purpose in choosing this dataset is to get an overview of what kind of equity deals are brought to venture capitalists.I stumbled upon this dataset from Kaggle and I found it pretty intriguing I thought to gain some understanding of the deals

1. The first ggplot denotes the "Stake for sale" at the X-Axis and "Business Valuation" on the y-axis.
   This plot shows the amount of equity brought by entrepreneurs for sale and at what valuations. I have color-coded the deal, its blue if the deal is done and red for not done.
2. The second ggplot denotes the "location of entrepreneurs" on the X-Axis and the "number of entrepreneurs" on the Y-Axis.
3. The third graph denotes the different "seasons" on the X-Axis and the total "valuations" of all entrepreneurs that came in looking for a deal. The contrast in valuations is shown as the color goes deeper. I have added transitions and animations as well.

Analysis-

1. From the plot, it's visible that most entrepreneurs look for a stake sale of 5 to 25%. Many of these deals are successful. But those who seek money for more than 40% equity sale often return empty-handed. As we move towards the higher equity sale, we see that the no. of entrepreneurs decreases. The highest deal ever made is $30 Million.
2. We see that the greatest number of entrepreneurs seeking investment resides in California (around 180). The lowest number of entrepreneurs are from Arkansas, Alabama, Nebraska, Wisconsin.
3. From the plot, we see that that general trend in valuations is positive as we move from season 1 towards season 6. The lowest amount of valuations was seen in the second season. But in the 6th season, we see that the entrepreneurs are seeking more money as their business valuations are increasing.

```r
options(scipen=999)
library("ggplot2")
library(dplyr)

## Warning: package 'dplyr' was built under R version 4.1.2
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union

library(ggalt)

## Warning: package 'ggalt' was built under R version 4.1.2

## Registered S3 methods overwritten by 'ggalt':
##   method                  from
##   grid.draw.absoluteGrob  ggplot2
##   grobHeight.absoluteGrob ggplot2
##   grobWidth.absoluteGrob  ggplot2
##   grobX.absoluteGrob      ggplot2
##   grobY.absoluteGrob      ggplot2

library(stringr)

## Warning: package 'stringr' was built under R version 4.1.2

library(ggpubr)

## Warning: package 'ggpubr' was built under R version 4.1.2

library(ggcorrplot)

## Warning: package 'ggcorrplot' was built under R version 4.1.2

library(gifski)

## Warning: package 'gifski' was built under R version 4.1.2

library(av)

## Warning: package 'av' was built under R version 4.1.2

library("RColorBrewer")
library("ggthemes")

## Warning: package 'ggthemes' was built under R version 4.1.2

library("gganimate")

## Warning: package 'gganimate' was built under R version 4.1.2

data <- read.csv("Shark Tank Companies.csv")
```

```
names(data)
```

```
##  [1] "deal"                "description"         "episode"
##  [4] "category"            "entrepreneurs"       "location"
##  [7] "website"             "askedFor"            "exchangeForStake"
## [10] "valuation"           "season"              "shark1"
## [13] "shark2"              "shark3"              "shark4"
## [16] "shark5"              "title"               "season.1"
## [19] "MultipleEntreprenuers"
```

```
head(data)
```

```
##    deal
## 1 FALSE
## 2  TRUE
## 3  TRUE
## 4 FALSE
## 5 FALSE
## 6  TRUE
##
##   episode             category              entrepreneurs          location
## 1       1             Novelties             Darrin Johnson      St. Paul, MN
## 2       1        Specialty Food                Tod Wilson       Somerset, NJ
## 3       1 Baby and Child Care           Tiffany Krumins        Atlanta, GA
## 4       1    Consumer Services Nick Friedman, Omar Soliman         Tampa, FL
## 5       1    Consumer Services            Kevin Flannery         Cary, NC
## 6       2        Specialty Food               Susan Knapp Napa Valley, CA
##                                website askedFor exchangeForStake valuation
## 1                                       1000000               15   6666667
## 2                 http://whybake.com/   460000               10   4600000
## 3      http://www.avatheelephant.com/    50000               15    333333
## 4 http://collegehunkshaulingjunk.com/   250000               25   1000000
## 5              http://www.wispots.com/  1200000               10  12000000
## 6          http://www.aperfectpear.com   500000               15   3333333
##   season          shark1          shark2        shark3        shark4
## 1      1 Barbara Corcoran Robert Herjavec Kevin O'Leary Daymond John
## 2      1 Barbara Corcoran Robert Herjavec Kevin O'Leary Daymond John
## 3      1 Barbara Corcoran Robert Herjavec Kevin O'Leary Daymond John
## 4      1 Barbara Corcoran Robert Herjavec Kevin O'Leary Daymond John
## 5      1 Barbara Corcoran Robert Herjavec Kevin O'Leary Daymond John
## 6      1 Barbara Corcoran Robert Herjavec Kevin O'Leary Daymond John
##           shark5                 title season.1
MultipleEntreprenuers
## 1 Kevin Harrington            Ionic Ear    1-Jan
FALSE
## 2 Kevin Harrington   Mr. Tod's Pie Factory    1-Jan
FALSE
## 3 Kevin Harrington      Ava the Elephant    1-Jan
FALSE
```
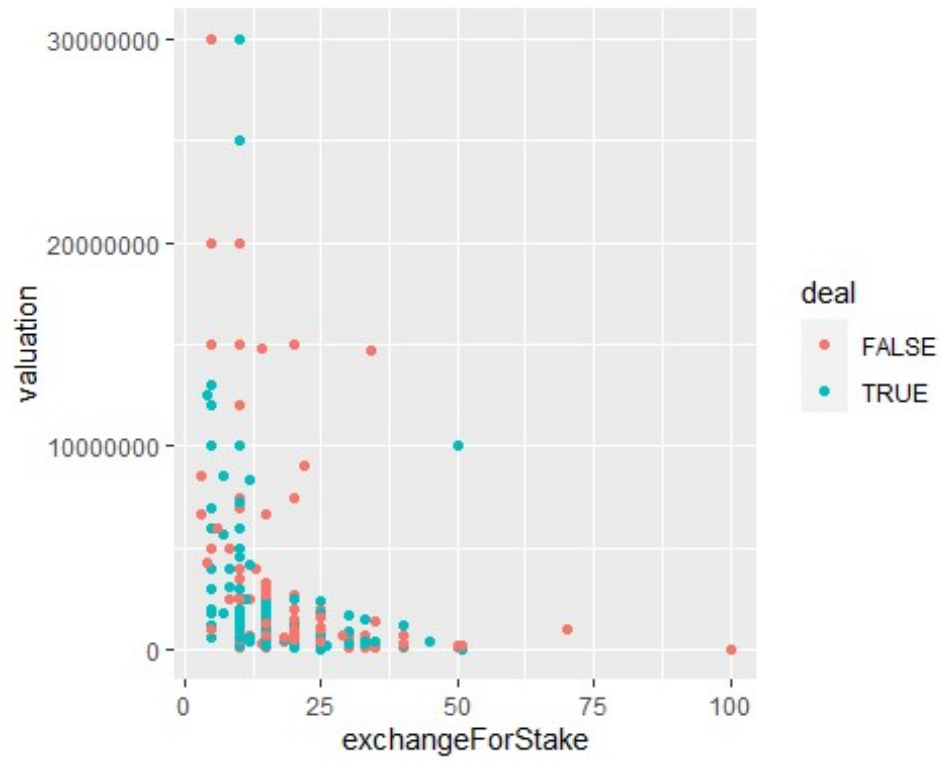
```
## 4 Kevin Harrington College Foxes Packing Boxes     1-Jan
FALSE
## 5 Kevin Harrington                        Wispots     1-Jan
FALSE
## 6 Kevin Harrington              A Perfect Pear     2-Jan
FALSE

summary(data)

##     deal         description          episode        category
##  Mode :logical   Length:495      Min.   : 1.00   Length:495
##  FALSE:244       Class :character  1st Qu.: 5.00   Class :character
##  TRUE :251       Mode  :character  Median :11.00   Mode  :character
##                                    Mean   :12.13
##                                    3rd Qu.:18.00
##                                    Max.   :29.00
##  entrepreneurs       location          website             askedFor
##  Length:495        Length:495       Length:495        Min.   :  10000
##  Class :character  Class :character  Class :character  1st Qu.:  75000
##  Mode  :character  Mode  :character  Mode  :character  Median : 150000
##                                                        Mean   : 258491
##                                                        3rd Qu.: 250000
##                                                        Max.   :5000000
##  exchangeForStake   valuation          season         shark1
##  Min.   :  3.00   Min.   :    40000   Min.   :1.000   Length:495
##  1st Qu.: 10.00   1st Qu.:   440000   1st Qu.:3.000   Class :character
##  Median : 15.00   Median : 1000000   Median :4.000   Mode  :character
##  Mean   : 17.54   Mean   : 2165615   Mean   :4.048
##  3rd Qu.: 20.00   3rd Qu.: 2000000   3rd Qu.:5.000
##  Max.   :100.00   Max.   :30000000   Max.   :6.000
##     shark2            shark3            shark4            shark5
##  Length:495        Length:495       Length:495        Length:495
##  Class :character  Class :character  Class :character  Class :character
##  Mode  :character  Mode  :character  Mode  :character  Mode  :character
##
##
##
##     title            season.1        MultipleEntreprenuers
##  Length:495        Length:495       Mode :logical
##  Class :character  Class :character  FALSE:334
##  Mode  :character  Mode  :character  TRUE :161
##
##
##
```
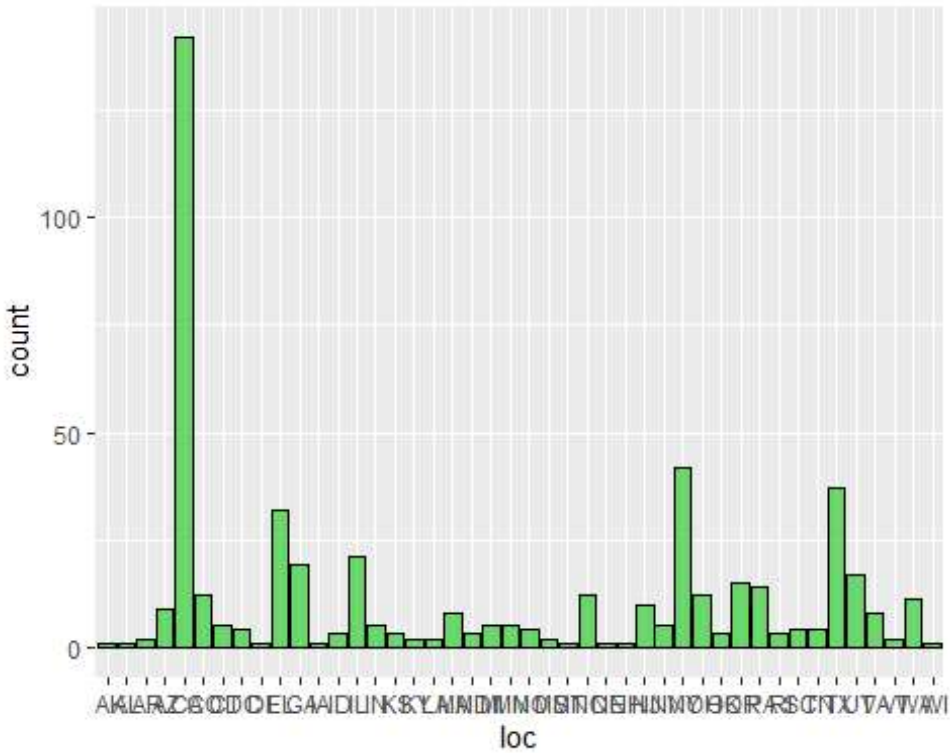
#1st plot--

```
ggplot(data,aes(exchangeForStake, valuation))+geom_point(aes(color=deal))
```

```
data$loc <- substring(data$location, nchar(as.character(data$location)) - 2)

#2nd plot--------------------------------------------------------
ggplot(data,aes(loc))+geom_bar(color="black",fill="limegreen",alpha=0.7)
```

```
#3rd plot----------------------------------------------------------
a <- ggplot(data,aes(season,valuation,fill=valuation))+
geom_col()+
scale_fill_distiller(palette="Reds",direction=1)+theme_minimal()+
  theme(
    panel.grid=element_blank(),
    panel.grid.major.y = element_line(color="white"),
    panel.ontop=TRUE)

a + transition_states(season,wrap=FALSE)+
  shadow_mark()+
  enter_grow()+
  enter_fade()+
  exit_fade()
```