December 16, 2023

The results below are generated from an R script.

```
library(ggplot2)
communitySurvey <- read.csv("2014 American Community Survey.csv")
communitySurvey
```

```
##                 Id   Id2                                 Geography PopGroupID
## 1   0500000US01073  1073                 Jefferson County, Alabama          1
## 2   0500000US04013  4013                  Maricopa County, Arizona          1
## 3   0500000US04019  4019                      Pima County, Arizona          1
## 4   0500000US06001  6001                Alameda County, California          1
## 5   0500000US06013  6013            Contra Costa County, California          1
## 6   0500000US06019  6019                 Fresno County, California          1
## 7   0500000US06029  6029                  Kern County, California          1
## 8   0500000US06037  6037             Los Angeles County, California          1
## 9   0500000US06059  6059                 Orange County, California          1
## 10  0500000US06065  6065               Riverside County, California          1
## 11  0500000US06067  6067             Sacramento County, California          1
## 12  0500000US06071  6071          San Bernardino County, California          1
## 13  0500000US06073  6073               San Diego County, California          1
## 14  0500000US06075  6075            San Francisco County, California          1
## 15  0500000US06077  6077              San Joaquin County, California          1
## 16  0500000US06081  6081               San Mateo County, California          1
## 17  0500000US06085  6085             Santa Clara County, California          1
## 18  0500000US06097  6097                 Sonoma County, California          1
## 19  0500000US06099  6099              Stanislaus County, California          1
## 20  0500000US06111  6111                 Ventura County, California          1
## 21  0500000US08005  8005                 Arapahoe County, Colorado          1
## 22  0500000US08031  8031                   Denver County, Colorado          1
## 23  0500000US08041  8041                 El Paso County, Colorado          1
## 24  0500000US08059  8059                Jefferson County, Colorado          1
## 25  0500000US09001  9001              Fairfield County, Connecticut          1
## 26  0500000US09003  9003               Hartford County, Connecticut          1
## 27  0500000US09009  9009              New Haven County, Connecticut          1
## 28  0500000US10003 10003                New Castle County, Delaware          1
## 29  0500000US11001 11001 District of Columbia, District of Columbia          1
## 30  0500000US12009 12009                    Brevard County, Florida          1
## 31  0500000US12011 12011                    Broward County, Florida          1
## 32  0500000US12031 12031                      Duval County, Florida          1
## 33  0500000US12057 12057               Hillsborough County, Florida          1
## 34  0500000US12071 12071                        Lee County, Florida          1
## 35  0500000US12086 12086                 Miami-Dade County, Florida          1
## 36  0500000US12095 12095                    Orange County, Florida          1
## 37  0500000US12099 12099                 Palm Beach County, Florida          1
## 38  0500000US12103 12103                   Pinellas County, Florida          1
```

```
## 39  0500000US12105 12105                    Polk County, Florida          1
## 40  0500000US12127 12127                  Volusia County, Florida         1
## 41  0500000US13067 13067                     Cobb County, Georgia         1
## 42  0500000US13089 13089                   DeKalb County, Georgia         1
## 43  0500000US13121 13121                   Fulton County, Georgia         1
## 44  0500000US13135 13135                  Gwinnett County, Georgia        1
## 45  0500000US15003 15003                   Honolulu County, Hawaii        1
## 46  0500000US17031 17031                     Cook County, Illinois        1
## 47  0500000US17043 17043                   DuPage County, Illinois        1
## 48  0500000US17089 17089                     Kane County, Illinois        1
## 49  0500000US17097 17097                     Lake County, Illinois        1
## 50  0500000US17197 17197                     Will County, Illinois        1
## 51  0500000US18097 18097                   Marion County, Indiana         1
## 52  0500000US20091 20091                   Johnson County, Kansas         1
## 53  0500000US20173 20173                  Sedgwick County, Kansas         1
## 54  0500000US21111 21111                Jefferson County, Kentucky        1
## 55  0500000US24003 24003              Anne Arundel County, Maryland       1
## 56  0500000US24005 24005                 Baltimore County, Maryland       1
## 57  0500000US24031 24031               Montgomery County, Maryland       1
## 58  0500000US24033 24033          Prince George's County, Maryland       1
## 59  0500000US24510 24510                  Baltimore city, Maryland        1
## 60  0500000US25005 25005              Bristol County, Massachusetts       1
## 61  0500000US25009 25009                Essex County, Massachusetts       1
## 62  0500000US25017 25017             Middlesex County, Massachusetts      1
## 63  0500000US25021 25021              Norfolk County, Massachusetts       1
## 64  0500000US25023 25023             Plymouth County, Massachusetts       1
## 65  0500000US25025 25025              Suffolk County, Massachusetts       1
## 66  0500000US25027 25027             Worcester County, Massachusetts      1
## 67  0500000US26081 26081                     Kent County, Michigan        1
## 68  0500000US26099 26099                   Macomb County, Michigan        1
## 69  0500000US26125 26125                  Oakland County, Michigan        1
## 70  0500000US26163 26163                    Wayne County, Michigan        1
## 71  0500000US27053 27053                 Hennepin County, Minnesota       1
## 72  0500000US27123 27123                   Ramsey County, Minnesota       1
## 73  0500000US29095 29095                   Jackson County, Missouri       1
## 74  0500000US29189 29189                 St. Louis County, Missouri       1
## 75  0500000US31055 31055                   Douglas County, Nebraska       1
## 76  0500000US32003 32003                       Clark County, Nevada       1
## 77  0500000US34003 34003                  Bergen County, New Jersey       1
## 78  0500000US34007 34007                  Camden County, New Jersey       1
## 79  0500000US34013 34013                   Essex County, New Jersey       1
## 80  0500000US34017 34017                  Hudson County, New Jersey       1
## 81  0500000US34023 34023                Middlesex County, New Jersey      1
## 82  0500000US34025 34025                Monmouth County, New Jersey       1
## 83  0500000US34029 34029                   Ocean County, New Jersey       1
## 84  0500000US34031 34031                  Passaic County, New Jersey      1
## 85  0500000US34039 34039                   Union County, New Jersey       1
## 86  0500000US35001 35001              Bernalillo County, New Mexico       1
## 87  0500000US36005 36005                    Bronx County, New York        1
## 88  0500000US36029 36029                     Erie County, New York        1
## 89  0500000US36047 36047                    Kings County, New York        1
## 90  0500000US36055 36055                   Monroe County, New York        1
## 91  0500000US36059 36059                   Nassau County, New York        1
## 92  0500000US36061 36061                 New York County, New York        1
```

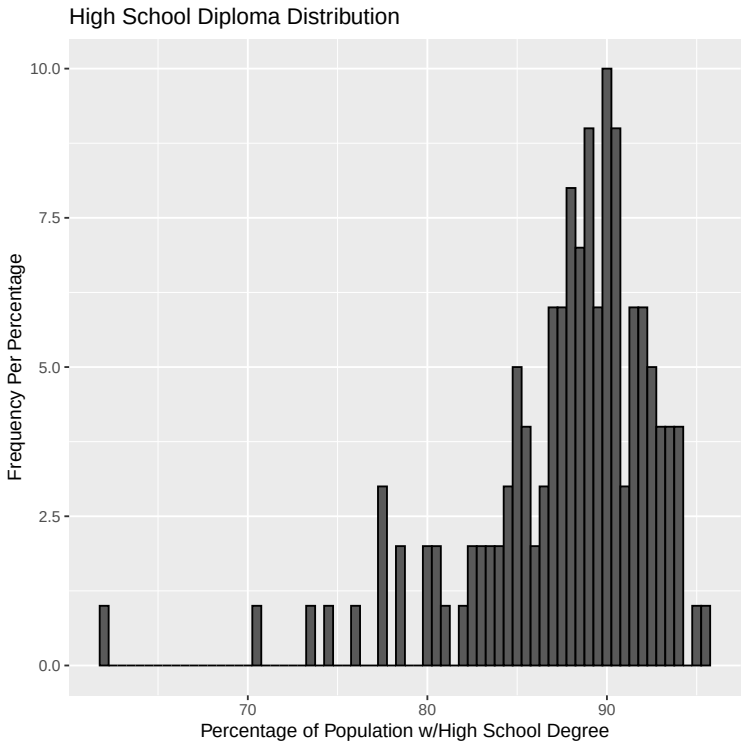
```
## 93  0500000US36081 36081                  Queens County, New York          1
## 94  0500000US36103 36103                 Suffolk County, New York          1
## 95  0500000US36119 36119              Westchester County, New York          1
## 96  0500000US37081 37081           Guilford County, North Carolina          1
## 97  0500000US37119 37119        Mecklenburg County, North Carolina          1
## 98  0500000US37183 37183              Wake County, North Carolina          1
## 99  0500000US39035 39035                    Cuyahoga County, Ohio          1
## 100 0500000US39049 39049                    Franklin County, Ohio          1
## 101 0500000US39061 39061                    Hamilton County, Ohio          1
## 102 0500000US39113 39113                  Montgomery County, Ohio          1
## 103 0500000US39153 39153                      Summit County, Ohio          1
## 104 0500000US40109 40109                 Oklahoma County, Oklahoma          1
## 105 0500000US40143 40143                    Tulsa County, Oklahoma          1
## 106 0500000US41051 41051                 Multnomah County, Oregon          1
## 107 0500000US41067 41067                Washington County, Oregon          1
## 108 0500000US42003 42003            Allegheny County, Pennsylvania          1
## 109 0500000US42017 42017                Bucks County, Pennsylvania          1
## 110 0500000US42029 42029              Chester County, Pennsylvania          1
## 111 0500000US42045 42045             Delaware County, Pennsylvania          1
## 112 0500000US42071 42071            Lancaster County, Pennsylvania          1
## 113 0500000US42091 42091           Montgomery County, Pennsylvania          1
## 114 0500000US42101 42101         Philadelphia County, Pennsylvania          1
## 115 0500000US44007 44007           Providence County, Rhode Island          1
## 116 0500000US47037 47037                Davidson County, Tennessee          1
## 117 0500000US47157 47157                  Shelby County, Tennessee          1
## 118 0500000US48029 48029                      Bexar County, Texas          1
## 119 0500000US48085 48085                     Collin County, Texas          1
## 120 0500000US48113 48113                     Dallas County, Texas          1
## 121 0500000US48121 48121                     Denton County, Texas          1
## 122 0500000US48141 48141                   El Paso County, Texas          1
## 123 0500000US48157 48157                  Fort Bend County, Texas          1
## 124 0500000US48201 48201                     Harris County, Texas          1
## 125 0500000US48215 48215                    Hidalgo County, Texas          1
##     POPGROUP.display.label RacesReported HSDegree BachDegree
## 1          Total population        660793     89.1       30.5
## 2          Total population       4087191     86.8       30.2
## 3          Total population       1004516     88.0       30.8
## 4          Total population       1610921     86.9       42.8
## 5          Total population       1111339     88.8       39.7
## 6          Total population        965974     73.6       19.7
## 7          Total population        874589     74.5       15.4
## 8          Total population      10116705     77.5       30.3
## 9          Total population       3145515     84.6       38.0
## 10         Total population       2329271     80.6       20.7
## 11         Total population       1482026     86.8       28.9
## 12         Total population       2112619     78.6       18.9
## 13         Total population       3263431     86.6       37.1
## 14         Total population        852469     88.1       54.2
## 15         Total population        715597     77.6       18.3
## 16         Total population        758581     88.1       47.5
## 17         Total population       1894605     87.4       48.4
## 18         Total population        500292     87.6       34.8
## 19         Total population        531997     78.4       17.0
## 20         Total population        846178     83.6       31.6
```

```
## 21        Total population        618821     91.9       40.9
## 22        Total population        663862     85.5       44.3
## 23        Total population        663519     92.8       36.5
## 24        Total population        558503     94.1       42.0
## 25        Total population        945438     89.8       46.7
## 26        Total population        897985     89.3       36.8
## 27        Total population        861277     89.5       34.5
## 28        Total population        552778     90.1       35.8
## 29        Total population        658893     90.2       55.0
## 30        Total population        556885     91.6       27.2
## 31        Total population       1869235     88.4       30.5
## 32        Total population        897698     89.0       26.1
## 33        Total population       1316298     87.3       29.8
## 34        Total population        679513     86.3       26.5
## 35        Total population       2662874     80.9       26.6
## 36        Total population       1253001     87.9       31.4
## 37        Total population       1397710     87.7       33.0
## 38        Total population        938098     90.1       29.5
## 39        Total population        634638     84.9       19.7
## 40        Total population        507531     88.9       22.5
## 41        Total population        730981     90.3       43.7
## 42        Total population        722161     88.4       41.7
## 43        Total population        996319     91.3       49.2
## 44        Total population        877922     88.0       35.4
## 45        Total population        991788     91.8       32.6
## 46        Total population       5246456     85.5       36.2
## 47        Total population        932708     92.3       48.0
## 48        Total population        527306     82.9       32.6
## 49        Total population        705186     90.3       44.0
## 50        Total population        685419     90.7       33.1
## 51        Total population        934243     85.0       28.8
## 52        Total population        574272     95.5       52.8
## 53        Total population        508803     88.8       30.7
## 54        Total population        760026     88.5       31.6
## 55        Total population        560133     91.9       38.8
## 56        Total population        826925     90.4       37.2
## 57        Total population       1030447     90.9       58.5
## 58        Total population        904430     85.5       31.0
## 59        Total population        622793     84.4       30.0
## 60        Total population        554194     82.5       25.7
## 61        Total population        769091     89.1       38.9
## 62        Total population       1570315     92.3       52.3
## 63        Total population        692254     94.1       51.9
## 64        Total population        507022     92.2       34.1
## 65        Total population        767254     83.9       42.3
## 66        Total population        813475     90.1       34.6
## 67        Total population        629237     89.1       33.7
## 68        Total population        860112     89.3       23.9
## 69        Total population       1237868     93.6       44.8
## 70        Total population       1764804     84.9       22.1
## 71        Total population       1212064     93.2       47.3
## 72        Total population        532655     89.9       40.9
## 73        Total population        683191     90.0       29.5
## 74        Total population       1001876     93.2       42.8
```

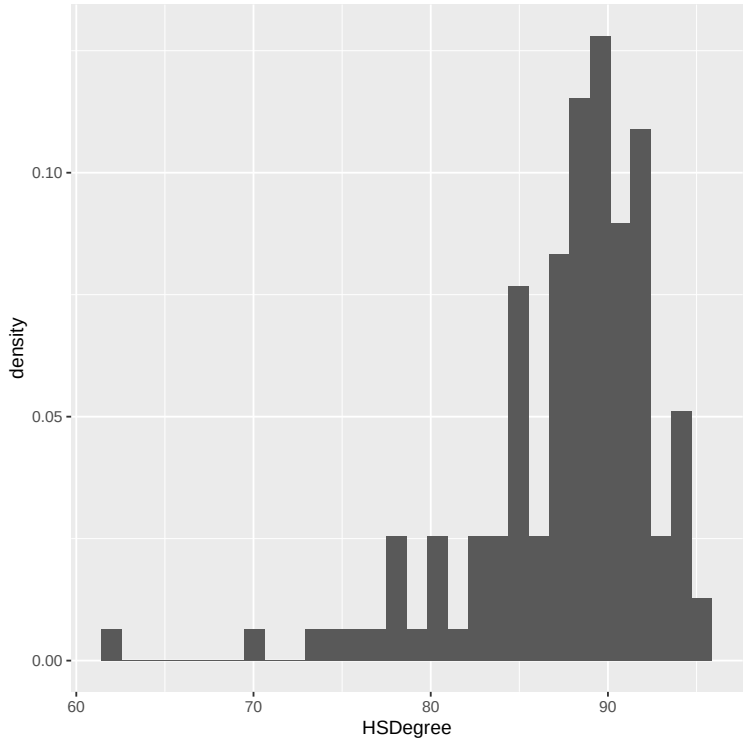
```
## 75        Total population        543244     88.2       36.3
## 76        Total population       2069681     84.5       22.7
## 77        Total population        933572     91.5       46.2
## 78        Total population        511038     88.3       31.3
## 79        Total population        795723     85.5       32.7
## 80        Total population        669115     83.4       38.2
## 81        Total population        836297     89.1       41.0
## 82        Total population        629279     93.1       43.7
## 83        Total population        586301     91.7       28.6
## 84        Total population        508856     83.8       28.6
## 85        Total population        552939     86.2       33.0
## 86        Total population        675551     88.0       32.7
## 87        Total population       1438159     70.5       19.3
## 88        Total population        922835     90.6       31.3
## 89        Total population       2621793     80.0       34.3
## 90        Total population        749857     90.3       35.9
## 91        Total population       1358627     90.7       43.2
## 92        Total population       1636268     86.8       59.9
## 93        Total population       2321580     80.4       29.8
## 94        Total population       1502968     89.8       34.0
## 95        Total population        972634     87.4       47.1
## 96        Total population        512119     89.0       33.3
## 97        Total population       1012539     89.5       43.0
## 98        Total population        998691     92.4       49.2
## 99        Total population       1259828     88.1       31.0
## 100       Total population       1231393     90.0       38.0
## 101       Total population        806631     90.5       35.6
## 102       Total population        533116     89.7       25.7
## 103       Total population        541943     91.1       30.3
## 104       Total population        766215     86.8       30.6
## 105       Total population        629598     88.6       30.7
## 106       Total population        776712     91.1       41.6
## 107       Total population        562998     90.2       39.7
## 108       Total population       1231255     93.9       37.7
## 109       Total population        626685     93.9       37.7
## 110       Total population        512784     92.3       49.3
## 111       Total population        562960     91.5       36.3
## 112       Total population        533320     84.9       26.0
## 113       Total population        816857     93.7       47.3
## 114       Total population       1560297     82.6       26.0
## 115       Total population        631974     82.0       25.2
## 116       Total population        668347     86.7       37.3
## 117       Total population        938803     87.4       29.9
## 118       Total population       1855866     83.0       26.3
## 119       Total population        885241     93.7       50.0
## 120       Total population       2518638     77.6       29.1
## 121       Total population        753363     91.9       41.5
## 122       Total population        833487     75.8       21.1
## 123       Total population        685345     88.6       44.1
## 124       Total population       4441370     79.8       29.7
## 125       Total population        831073     62.2       17.9
##  [ reached 'max' / getOption("max.print") -- omitted 11 rows ]

lapply(communitySurvey, class)
```

```
## $Id
## [1] "character"
##
## $Id2
## [1] "integer"
##
## $Geography
## [1] "character"
##
## $PopGroupID
## [1] "integer"
##
## $POPGROUP.display.label
## [1] "character"
##
## $RacesReported
## [1] "integer"
##
## $HSDegree
## [1] "numeric"
##
## $BachDegree
## [1] "numeric"

# ID is a character. It is a unique alpha/numeric character used to identify the city and state being st
# ID2 is an integer. It is a shortened version of ID which only included the last 5 digits of the ID cha
# Geography is a character. It shows the city and state in written form.
# PopGroupID is an integer. It is an identified for the population group.
# POP.GROUP.display.label is a character. This labels what population we are talking about. All of these
# RacesReported is an integer. This shows the number of races reported in the city/state.
# HSDegree is numeric. It shows the percentage of the population that acquired a high school degree.
# BachDegree is numeric. It shows the percentage of the population that acquired a bachelor's degree.

# Run the following functions and provide the results: str(); nrow(); ncol()
str(communitySurvey)

## 'data.frame': 136 obs. of  8 variables:
##  $ Id                    : chr  "0500000US01073" "0500000US04013" "0500000US04019" "0500000US06001" .
##  $ Id2                   : int  1073 4013 4019 6001 6013 6019 6029 6037 6059 6065 ...
##  $ Geography             : chr  "Jefferson County, Alabama" "Maricopa County, Arizona" "Pima County,
##  $ PopGroupID            : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ POPGROUP.display.label: chr  "Total population" "Total population" "Total population" "Total popul
##  $ RacesReported         : int  660793 4087191 1004516 1610921 1111339 965974 874589 10116705 3145515
##  $ HSDegree              : num  89.1 86.8 88 86.9 88.8 73.6 74.5 77.5 84.6 80.6 ...
##  $ BachDegree            : num  30.5 30.2 30.8 42.8 39.7 19.7 15.4 30.3 38 20.7 ...

nrow(communitySurvey)

## [1] 136

ncol(communitySurvey)

## [1] 8

# Create a Histogram of the HSDegree variable using the ggplot2 package.
```

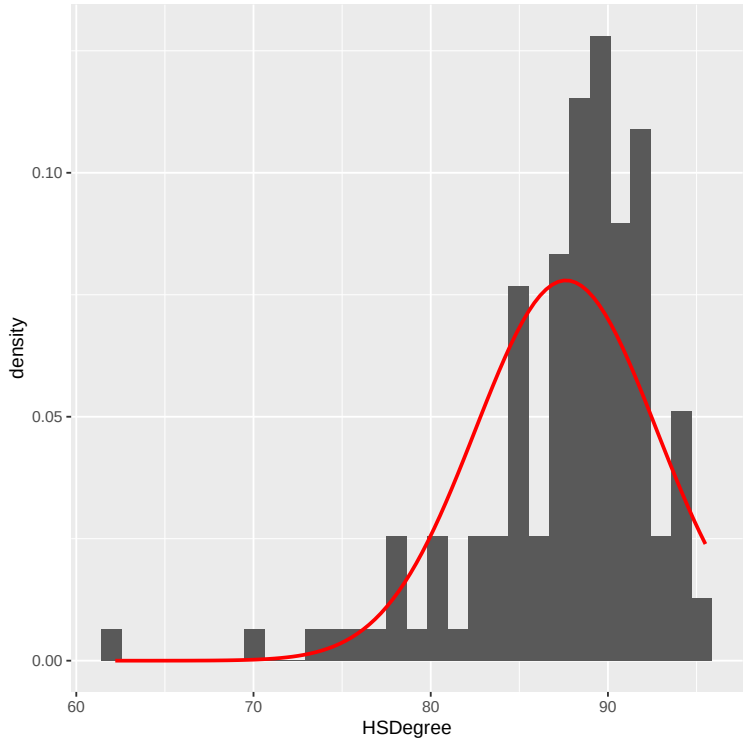
```r
# Set a bin size for the Histogram that you think best visuals the data (the bin size will determine hou
# Include a Title and appropriate X/Y axis labels on your Histogram Plot.
communitySurveyhistogram <- ggplot(communitySurvey, aes(HSDegree))
communitySurveyhistogram + geom_histogram(color = "Black", binwidth = 0.5) + labs(title = "High School D
```



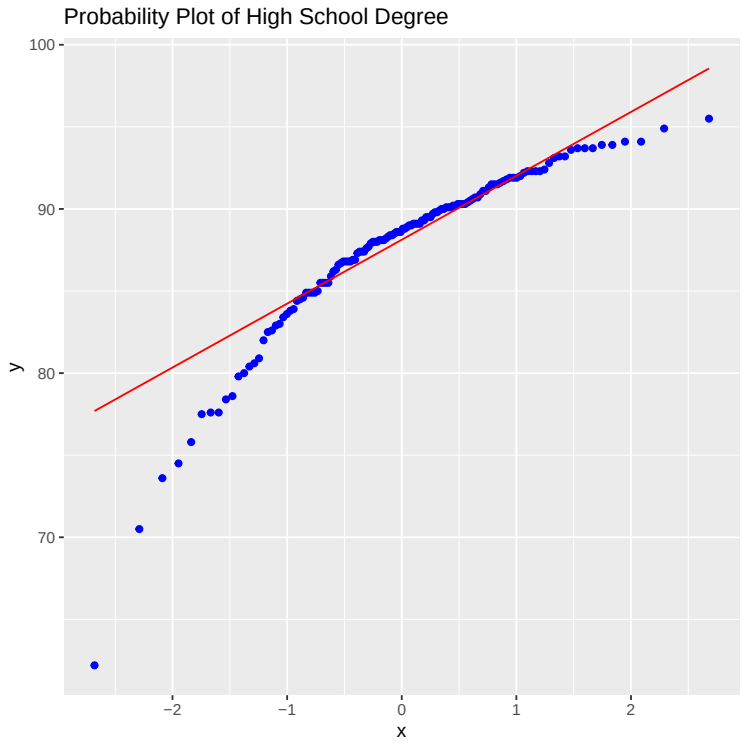

```r
# Answer the following questions based on the Histogram produced.
# 1) Based on what you see in this histogram, is the data distribution unimodal?
# Based on the histogram created, the data distribution is unimodal as there is a distinct peak at about
# 2) Is it approximately symmetrical?
# It is not approximately symmetrical since even though it has a distinct peak, the two tails on either
# 3) Is it approximately bell-shaped?t
# The histogram is not bell-shaped.
# 4) Is it approximately normal?
# The histogram is not normally distributed.
# 5) If not normal, is the distribution skewed? If so, in which direction?
# The distribution is skewed. It presents itself with a left-skew.
# 6) Include a normal curve to the Histogram that you plotted.
ggplot(communitySurvey, aes(HSDegree)) + geom_histogram(aes(y = ..density..))

## `stat_bin()` using `bins = 30`.  Pick better value with `binwidth`.
```




```
ggplot(communitySurvey, aes(HSDegree)) + geom_histogram(aes(y = ..density..)) +
  stat_function(fun = dnorm, args = list(mean = mean(communitySurvey$HSDegree),
                                         sd = sd(communitySurvey$HSDegree)), color = "Red", size = 1)

## `stat_bin()` using `bins = 30`.  Pick better value with `binwidth`.
```



```r
# 7) Explain whether a normal distribution can accurately be used as a model for this data.
# curve(dnorm(communitySurvey$HSDegree, mean(communitySurvey$HSDegree), sd(communitySurvey$HSDegree), ad
# Since the histogram has a negative skew, a normal distribution cannot accurately be used as a model fo

# Create a Probability Plot of the HSDegree variable.
ggplot(communitySurvey, aes(sample = HSDegree)) + geom_qq(color ="Blue") + geom_qq_line(color = "Red") +
```




```r
# Answer the following questions based on the Probability Plot:
# 1) Based on what you see in this probability plot, is the distribution approximately normal? Explain h
# Based on the probability plot, the distribution is not approximately normal since it does not follow a
# 2) If not normal, is the distribution skewed? If so, in which direction? Explain how you know.
# The distribution is skewed to the left since the plotted points bend down and to the right of the norm

# Now that you have looked at this data visually for normality, you will now quantify normality with num
library(pastecs)
stat.desc(communitySurvey$HSDegree)

##      nbr.val     nbr.null       nbr.na          min          max        range
## 1.360000e+02 0.000000e+00 0.000000e+00 6.220000e+01 9.550000e+01 3.330000e+01
##          sum       median         mean      SE.mean CI.mean.0.95          var
## 1.191800e+04 8.870000e+01 8.763235e+01 4.388598e-01 8.679296e-01 2.619332e+01
##      std.dev     coef.var
## 5.117941e+00 5.840241e-02

library(moments)
skewness(communitySurvey$HSDegree)

## [1] -1.69341

kurtosis(communitySurvey$HSDegree)
```

```
## [1] 7.462191

mean <- mean(communitySurvey$HSDegree)
sd <- sd(communitySurvey$HSDegree)
z_scores <- (communitySurvey$HSDegree - mean / sd)
z_scores

##   [1] 71.97742 69.67742 70.87742 69.77742 71.67742 56.47742 57.37742 60.37742 67.47742
##  [10] 63.47742 69.67742 61.47742 69.47742 70.97742 60.47742 70.97742 70.27742 70.47742
##  [19] 61.27742 66.47742 74.77742 68.37742 75.67742 76.97742 72.67742 72.17742 72.37742
##  [28] 72.97742 73.07742 74.47742 71.27742 71.87742 70.17742 69.17742 63.77742 70.77742
##  [37] 70.57742 72.97742 67.77742 71.77742 73.17742 71.27742 74.17742 70.87742 74.67742
##  [46] 68.37742 75.17742 65.77742 73.17742 73.57742 67.87742 78.37742 71.67742 71.37742
##  [55] 74.77742 73.27742 73.77742 68.37742 67.27742 65.37742 71.97742 75.17742 76.97742
##  [64] 75.07742 66.77742 72.97742 71.97742 72.17742 76.47742 67.77742 76.07742 72.77742
##  [73] 72.87742 76.07742 71.07742 67.37742 74.37742 71.17742 68.37742 66.27742 71.97742
##  [82] 75.97742 74.57742 66.67742 69.07742 70.87742 53.37742 73.47742 62.87742 73.17742
##  [91] 73.57742 69.67742 63.27742 72.67742 70.27742 71.87742 72.37742 75.27742 70.97742
## [100] 72.87742 73.37742 72.57742 73.97742 69.67742 71.47742 73.97742 73.07742 76.77742
## [109] 76.77742 75.17742 74.37742 67.77742 76.57742 65.47742 64.87742 69.57742 70.27742
## [118] 65.87742 76.57742 60.47742 74.77742 58.67742 71.47742 62.67742 45.07742 68.77742
## [127] 67.77742 71.47742 72.37742 76.57742 74.37742 75.17742 73.17742 74.87742 77.77742
## [136] 69.77742

# In several sentences provide an explanation of the result produced for skew, kurtosis, and z-scores.
# Skewness is a statistical measure that is used to show whether a distribution is distorted or asymmet
# Kurtosis measures the degree of peakedness in a distribution. A kurtosis value of 7.462191 indicates
# Z-scores are a standardized measure of how far a data point is from the mean, expressed in terms of th
# I attempted to get z-scores but don't believe I returned the correct values as the numbers are too lar
```

The R session information (including the OS info, R version and all packages used):

```
sessionInfo()

## R version 4.3.2 (2023-10-31)
## Platform: x86_64-apple-darwin20 (64-bit)
## Running under: macOS Ventura 13.5.1
##
## Matrix products: default
## BLAS:   /System/Library/Frameworks/Accelerate.framework/Versions/A/Frameworks/vecLib.framework/Versio
## LAPACK: /Library/Frameworks/R.framework/Versions/4.3-x86_64/Resources/lib/libRlapack.dylib;  LAPACK v
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## time zone: America/New_York
## tzcode source: internal
##
## attached base packages:
## [1] splines   stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] moments_0.14.1  pastecs_1.3.21  effects_4.2-2   RcmdrMisc_2.9-1 sandwich_3.1-0
##  [6] car_3.1-2       carData_3.0-5   ggthemes_5.0.0  scales_1.2.1    lubridate_1.9.3
## [11] shiny_1.8.0     DataEditR_0.1.5 ggplot2_3.4.4   jsonlite_1.8.8
```

```
##
## loaded via a namespace (and not attached):
##  [1] DBI_1.1.3           gridExtra_2.3       tcltk_4.3.2         readxl_1.4.3
##  [5] rlang_1.1.2         magrittr_2.0.3      e1071_1.7-14        compiler_4.3.2
##  [9] mgcv_1.9-0          vctrs_0.6.4         stringr_1.5.1       crayon_1.5.2
## [13] pkgconfig_2.0.3     fastmap_1.1.1       backports_1.4.1     ellipsis_0.3.2
## [17] fontawesome_0.5.2   labeling_0.4.3      utf8_1.2.4          promises_1.2.1
## [21] rmarkdown_2.25      haven_2.5.4         nloptr_2.0.3        purrr_1.0.2
## [25] xfun_0.41           cachem_1.0.8        highr_0.10          later_1.3.1
## [29] cluster_2.1.4       R6_2.5.1            bslib_0.6.0         stringi_1.8.2
## [33] boot_1.3-28.1       rpart_4.1.21        jquerylib_0.1.4     cellranger_1.1.0
## [37] Rcpp_1.0.11         knitr_1.45          zoo_1.8-12          base64enc_0.1-3
## [41] httpuv_1.6.13       Matrix_1.6-1.1      nnet_7.3-19         timechange_0.2.0
## [45] tidyselect_1.2.0    rstudioapi_0.15.0   abind_1.4-5         yaml_2.3.7
## [49] miniUI_0.1.1.1      lattice_0.22-5      tibble_3.2.1        withr_2.5.2
## [53] evaluate_0.23       foreign_0.8-85      survival_3.5-7      proxy_0.4-27
## [57] survey_4.2-1        pillar_1.9.0        checkmate_2.3.1     nortest_1.0-4
## [61] insight_0.19.7      shinyjs_2.1.0       generics_0.1.3      hms_1.1.3
## [65] munsell_0.5.0       minqa_1.2.6         xtable_1.8-4        class_7.3-22
## [69] glue_1.6.2          Hmisc_5.1-1         tools_4.3.2         data.table_1.14.8
## [73] lme4_1.1-35.1       forcats_1.0.0       fs_1.6.3            grid_4.3.2
## [77] mitools_2.4         shinyBS_0.61.1      colorspace_2.1-0    nlme_3.1-163
## [81] htmlTable_2.4.2     Formula_1.2-5       cli_3.6.1           rhandsontable_0.3.8
## [85] fansi_1.0.5         tcltk2_1.2-11       viridisLite_0.4.2   dplyr_1.1.4
## [89] gtable_0.3.4        relimp_1.0-5        sass_0.4.7          digest_0.6.33
## [93] htmlwidgets_1.6.3   farver_2.1.1        memoise_2.0.1       htmltools_0.5.7
## [97] lifecycle_1.0.4     mime_0.12           MASS_7.3-60
```

```
Sys.time()
```

```
## [1] "2023-12-16 21:32:10 EST"
```