(Tableau)

Oridnary line graph for the closing price vs. the date for the Intel Stock

Conclusion: The line graph plots the closing price of Intel Stock ($) from 1st Jan 1998 to 31st Dec 1998. The trend of the stock price is positive.
On 2nd Jan 1998, the closing price of the stock is around $72. On 31st Dec 1998, the stock price is around $118.
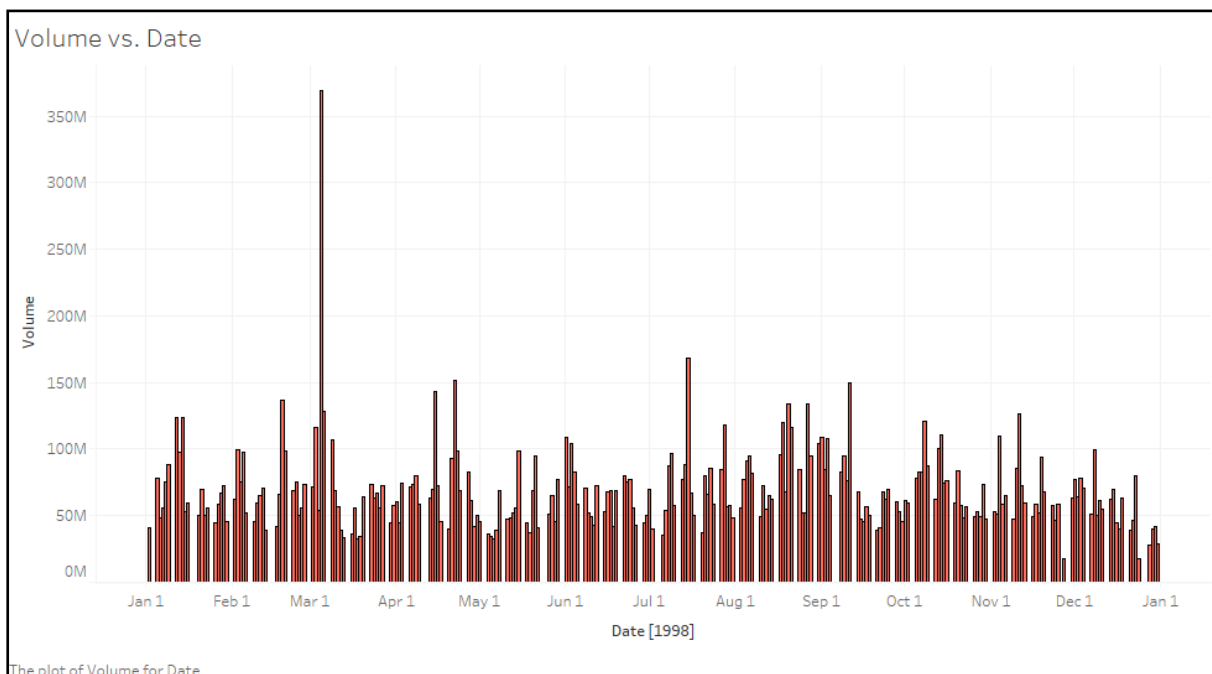The 52 week low of the stock is $65 on 3rd June 1998 while the 52 week high is $125 on 23rd Dec 1998.

(R Studio)

```
> ggplot( data=Intel.1998, aes(x=Trading.Day,y=Close) ) + geom_line(size =
1) + theme_bw()
```
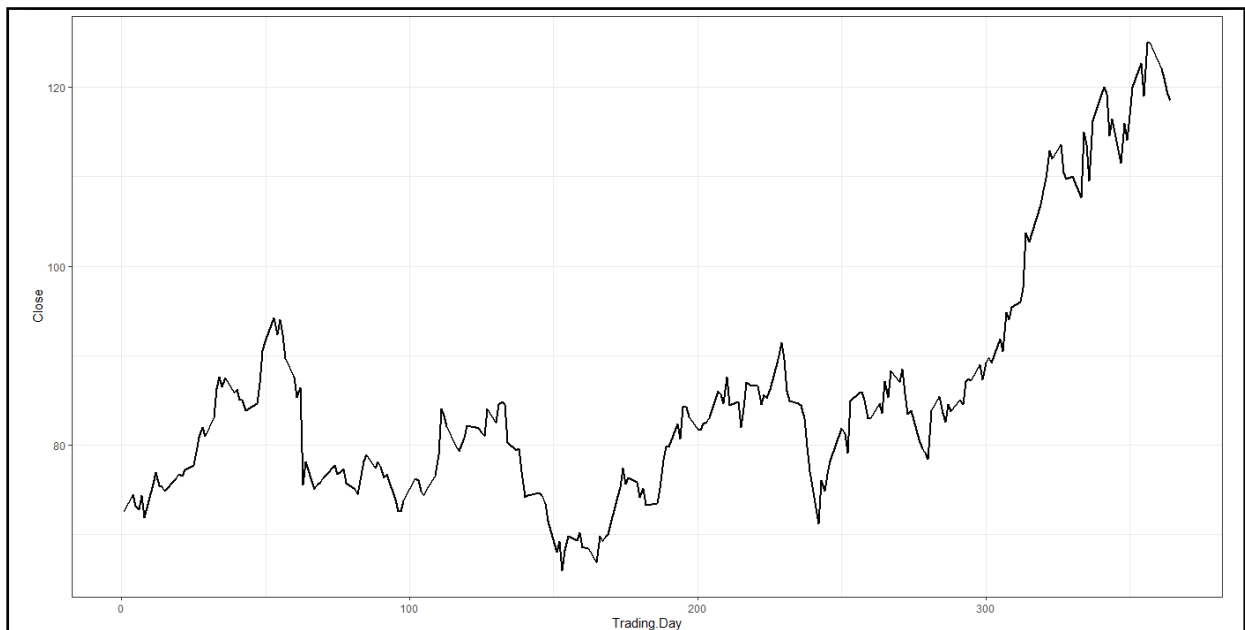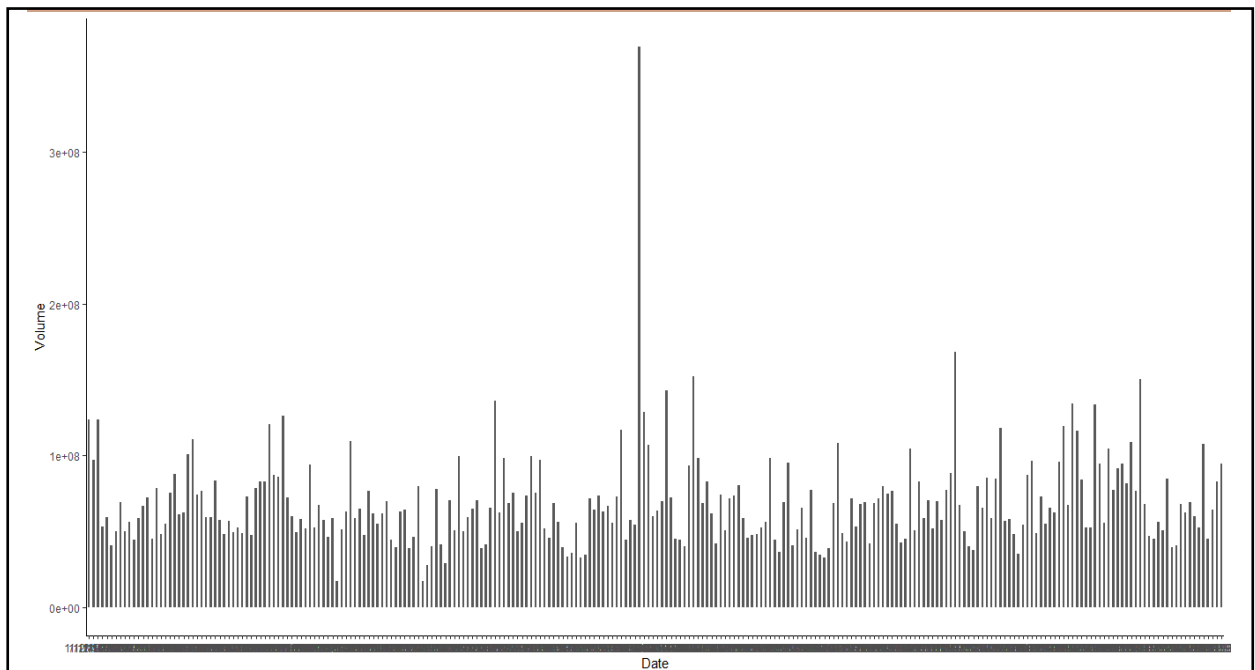

(Tableau)

Following is the bar graph for Volume vs. the exact Date for the Intel Stock

Conclusion: The bar graph shows the volume of Intel Stock ($) from 1st Jan 1998 to 31st Dec 1998.
The highest volume was on 5th March 1998 with a value of 3693,30,400.
The lowest volume was on 27th November 1998 with a value of 172,78,400.

(R Studio)

```
> ggplot( data=Intel.1998, aes(x=Date,y=Volume) ) + geom_col( width = 0.5)
+ theme_classic()
```


(Tableau)

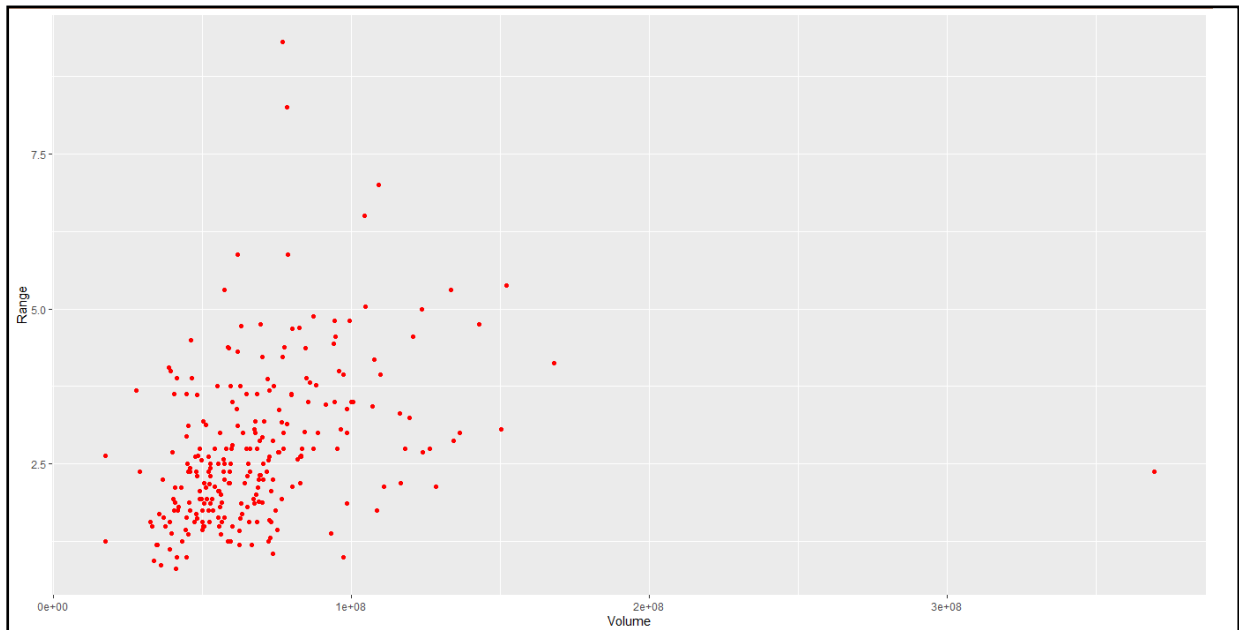Following is the scatter plot for Volume vs. Range (High – Low) for the Intel Stock
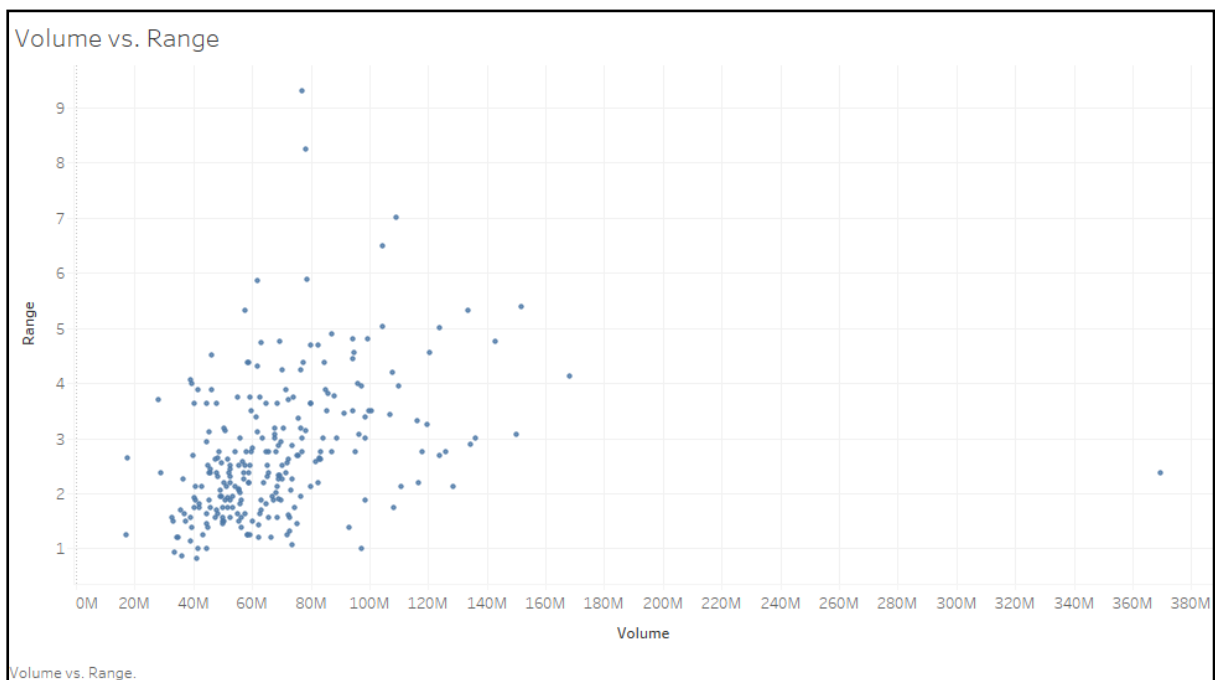
Conclusion: The scatter plot between Volume and Range (High Price – Low Price) shows a positive relationship. The plot doesn't exactly show a linear relationship between the variables. There are a couple of outliers in the plot above.
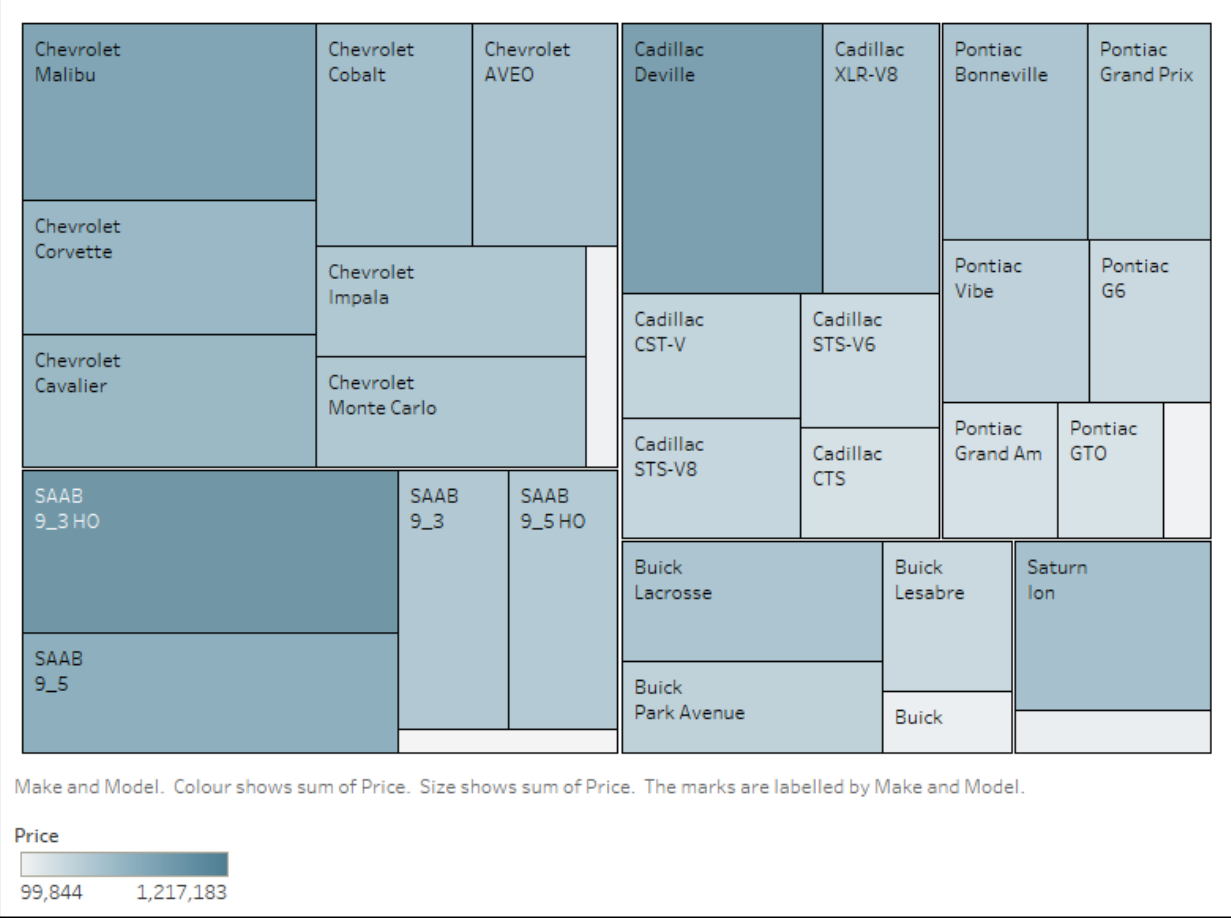
(R Studio)

```
> ggplot( data=Intel.1998, aes(x=Volume,y=Range) ) + geom_point(col="Red")
```

(Tableau)

Tree graph plotting Model, Make and Price of the car

| Chevrolet Malibu | | Chevrolet Cobalt | Chevrolet AVEO | Cadillac Deville | | Cadillac XLR-V8 | Pontiac Bonneville | Pontiac Grand Prix |

Chevrolet Corvette

Chevrolet Impala

Chevrolet Cavalier / Chevrolet Monte Carlo

Cadillac CST-V / Cadillac STS-V6

Pontiac Vibe / Pontiac G6

SAAB 9_3 HO / SAAB 9_3 / SAAB 9_5 HO

Cadillac STS-V8 / Cadillac CTS

Pontiac Grand Am / Pontiac GTO

SAAB 9_5

Buick Lacrosse / Buick Lesabre / Saturn Ion

Buick Park Avenue / Buick

Make and Model. Colour shows sum of Price. Size shows sum of Price. The marks are labelled by Make and Model.

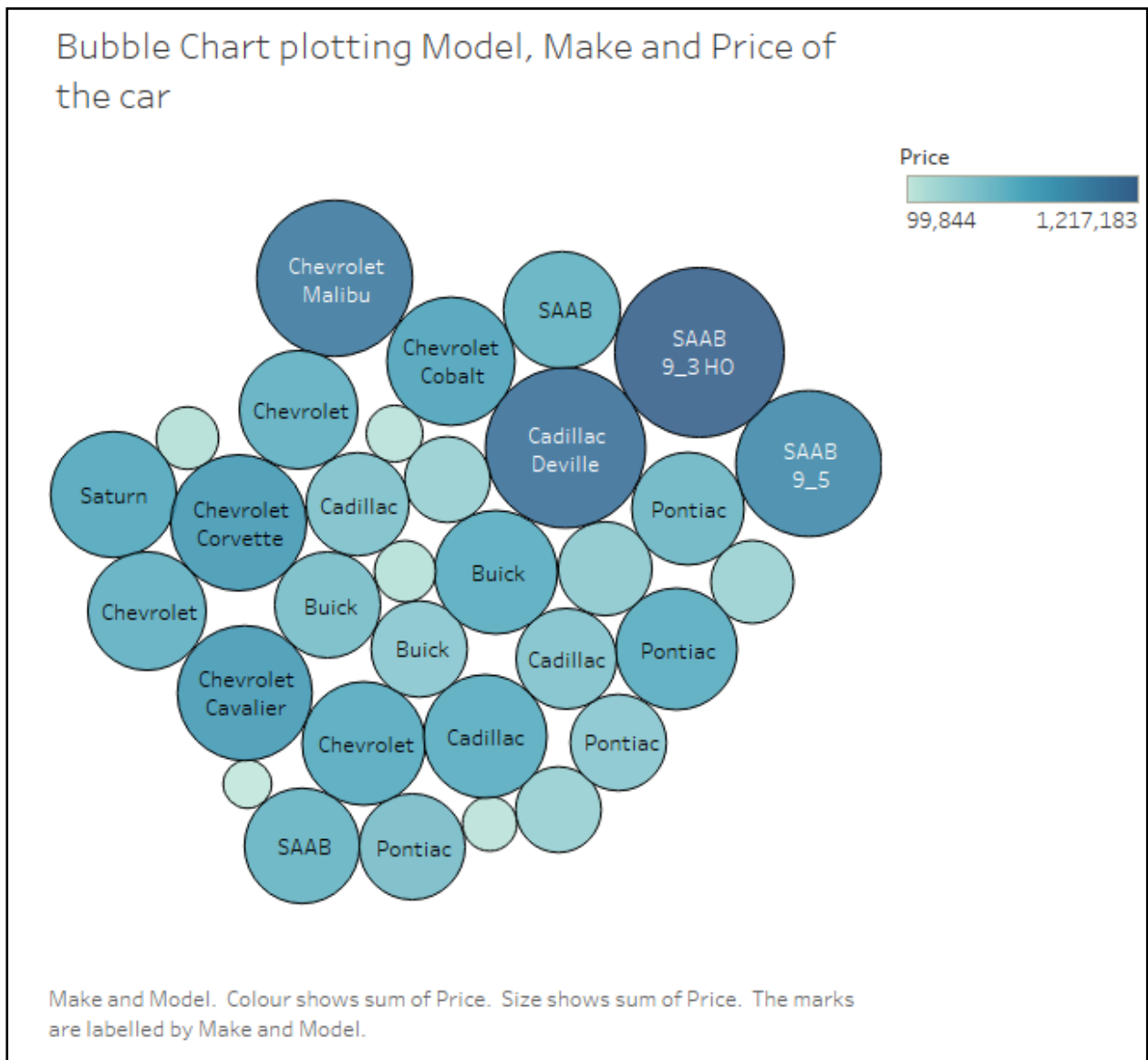Price

99,844   1,217,183

Conclusion: The tree graph shows the divisions and sub divisions based on the make and model of the car.

The luminosity determines the price of the cars. As the price of the car increases, luminosity increases.

As per the graph SAAB 9_3 HO and Cadillac Deville are the most costly cars while SAAB 9-2X AWD and Pontiac Sunfire are the least costly cars in the list.

(Tableau)

Bubble Chart plotting Model, Make and Price of the car

Price
99,844   1,217,183

Chevrolet Malibu
SAAB
SAAB 9_3 HO
Chevrolet Cobalt
Chevrolet
Cadillac Deville
SAAB 9_5
Saturn
Chevrolet Corvette
Cadillac
Pontiac
Buick
Chevrolet
Buick
Buick
Cadillac
Pontiac
Chevrolet Cavalier
Chevrolet
Cadillac
Pontiac
SAAB
Pontiac

Make and Model. Colour shows sum of Price. Size shows sum of Price. The marks are labelled by Make and Model.

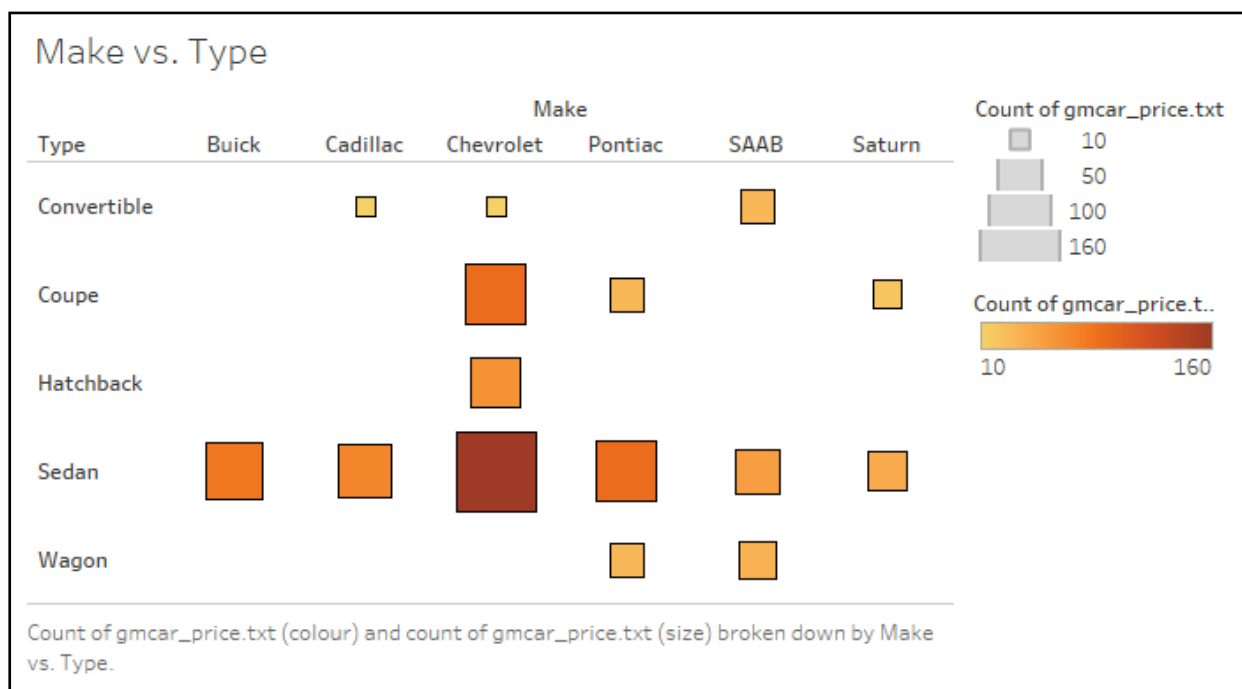**Conclusion:** The bubble chart shows the divisions and sub divisions based on the make and model of the car.
The distinguishing colours and size of the bubble determines the price of the car. As the size of the bubble and the luminosity increases, the price of the car increases.
As per the size and colour of the bubble, SAAB 9_3 HO and Cadillac Deville are the most costly cars while SAAB 9-2X AWD and Pontiac Sunfire are the least costly cars in the list.

The following are the differences between Tree Map and Bubble Chart
- In Tree Map, there are divisions based on the make of the car. The Tree Map has divisions and subdivisions based on the make and the model of the car. The bubble chart doesn't have any such divisions and subdivisions.
- In Tree Map, all the make of the cars are grouped together in the graph. The bubble chart doesn't have any such groupings.
- The price of the car and model is determined by the enclosed block (area) within the graph. In Tree Map the area of the square determines the price of the car while in the Bubble chart the size of the bubble determines the price of the car.
- The brand and model of the car is listed on the Tree Map (most of the blocks except a few with smaller areas) while the Bubble chart has brand and model of the car only listed for some of them (Large bubbles only). Small bubbles do not have the make and the model of the car listed.

(Tableau)

Count of gmcar_price.txt (colour) and count of gmcar_price.txt (size) broken down by Make vs. Type.

Conclusion: The contingency plot shows the Make and Type of the car.
The divisions are based on the Make and Type of the car. The make of car are divided into various columns and the different rows represent the type of car.
The size and the luminosity of the square determine the count of the records.
The rows and columns with no squares specify the manufacturer doesn't manufacture that type of car.
Chevrolet Sedan has the highest number of records while Cadillac Convertible and Chevrolet Convertible have least number of records.
The graph shows Chevrolet has the highest number of cars and Chevrolet manufactures the only Hatchback in the list.
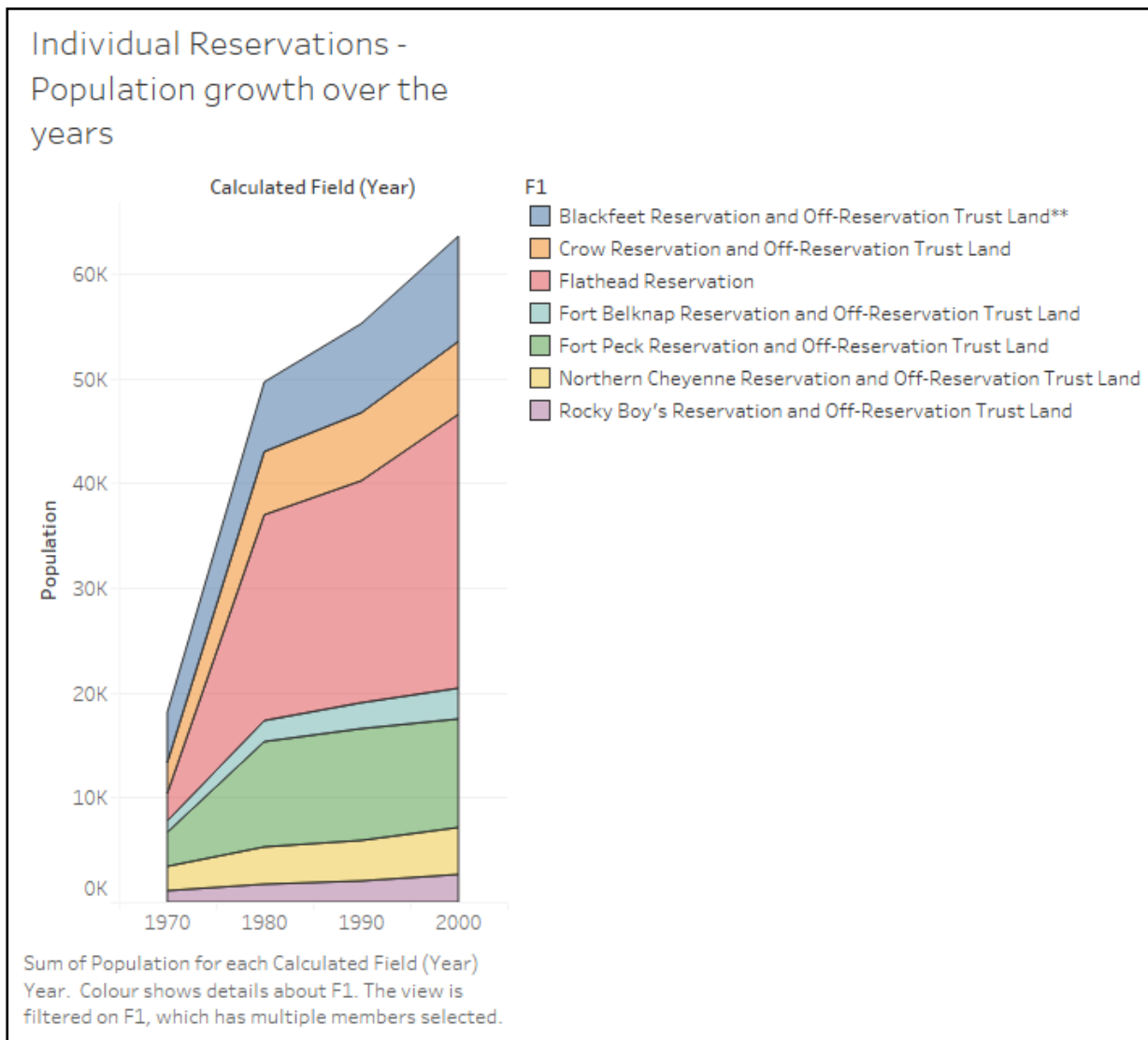All the cars manufacturers manufacture a Sedan type of car.

Pre processing activities

Year	Population	F1	Calculated Field
Pivot	_Pivot_	_Sheet1 A1:F16_	_Calculation_
1980	5,973	Crow Reservation and...	01-01-1980
1990	6,370	Crow Reservation and...	01-01-1990
2000	6,894	Crow Reservation and...	01-01-2000
1970	2,537	Flathead Reservation	01-01-1970
1980	19,628	Flathead Reservation	01-01-1980
1990	21,259	Flathead Reservation	01-01-1990
2000	26,172	Flathead Reservation	01-01-2000
1970	1,111	Fort Belknap Reserva...	01-01-1970
1980	2,060	Fort Belknap Reserva	01-01-1980

(Tableau)

Individual Reservations - Population growth over the years

Calculated Field (Year)

F1
- Blackfeet Reservation and Off-Reservation Trust Land**
- Crow Reservation and Off-Reservation Trust Land
- Flathead Reservation
- Fort Belknap Reservation and Off-Reservation Trust Land
- Fort Peck Reservation and Off-Reservation Trust Land
- Northern Cheyenne Reservation and Off-Reservation Trust Land
- Rocky Boy's Reservation and Off-Reservation Trust Land

Sum of Population for each Calculated Field (Year) Year. Colour shows details about F1. The view is filtered on F1, which has multiple members selected.

Conclusion: The area under the line graph shows the increase in population from 1970 to 2000. Each colour represents individual reservations.
The Rocky Boy reservation (purple), Fort Belknap reservation (sky blue) and Northern Cheyenne reservation (yellow) show a flat population increase 1970 to 2000.
The Flathead reservation (red) shows a sharp spike and highest increase rate from 1970 and 1980.
The Blackfeet reservation (Navy blue) and Crow reservation (orange) show a decent population increase from 1970 to 2000.

(Tableau)
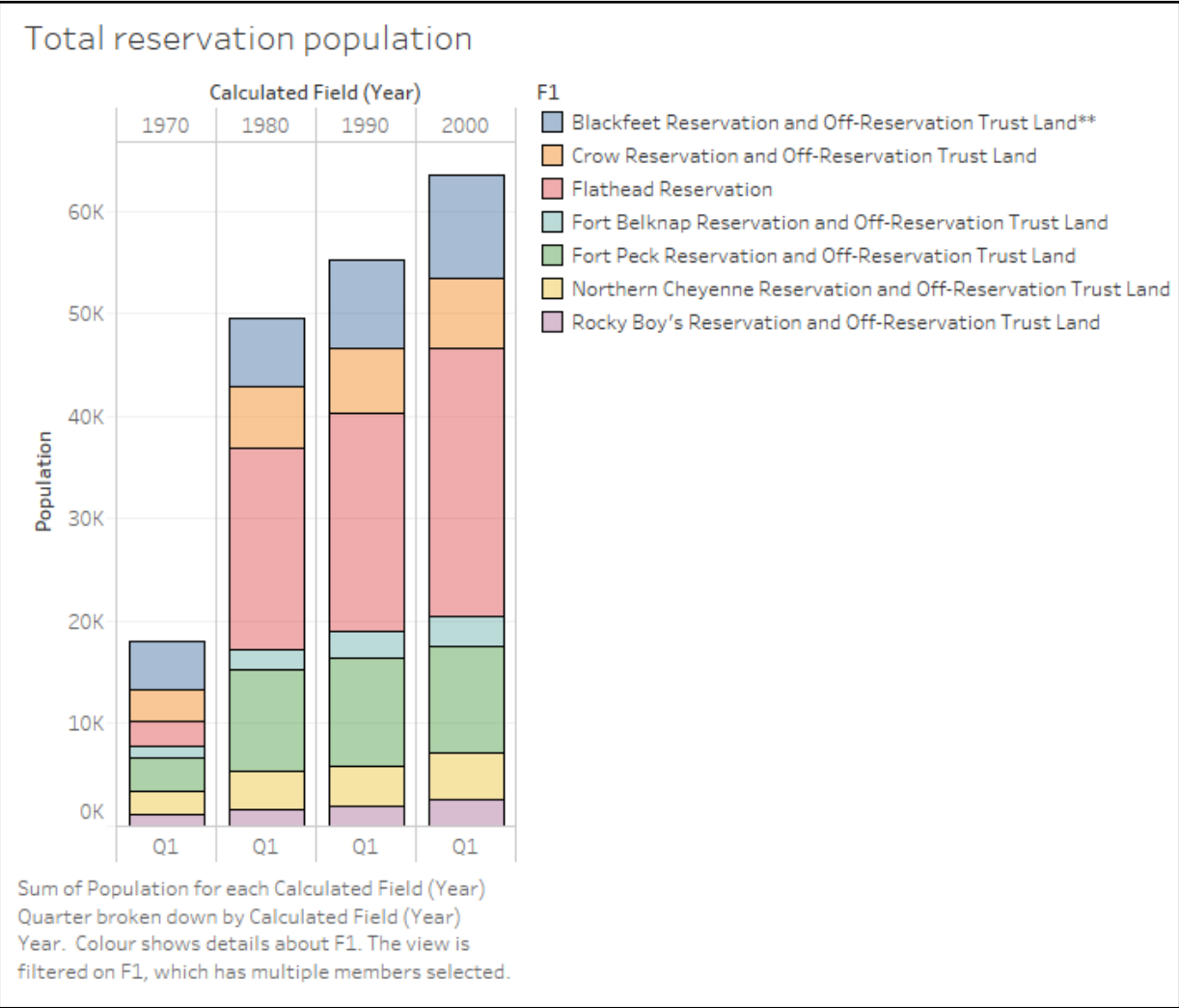
Conclusion: The bar graph shows the total population increase from 1970 to 2000. Different reservations in a bar are split into different segments in distinct colours.
The sharpest spike is from ~18k to ~49k between the year 1970 and 1980.
The population touches the 65k mark in 2000.

R Studio (Line Graph)

```
> ggplot( data=cellPlans, aes(x=DataGB, y=Price, color=Company) ) +
geom_line(size = 1.2) +  geom_point(size = 3) + ggtitle("Line Graph of
DataGB vs. Price") + theme_bw()
```
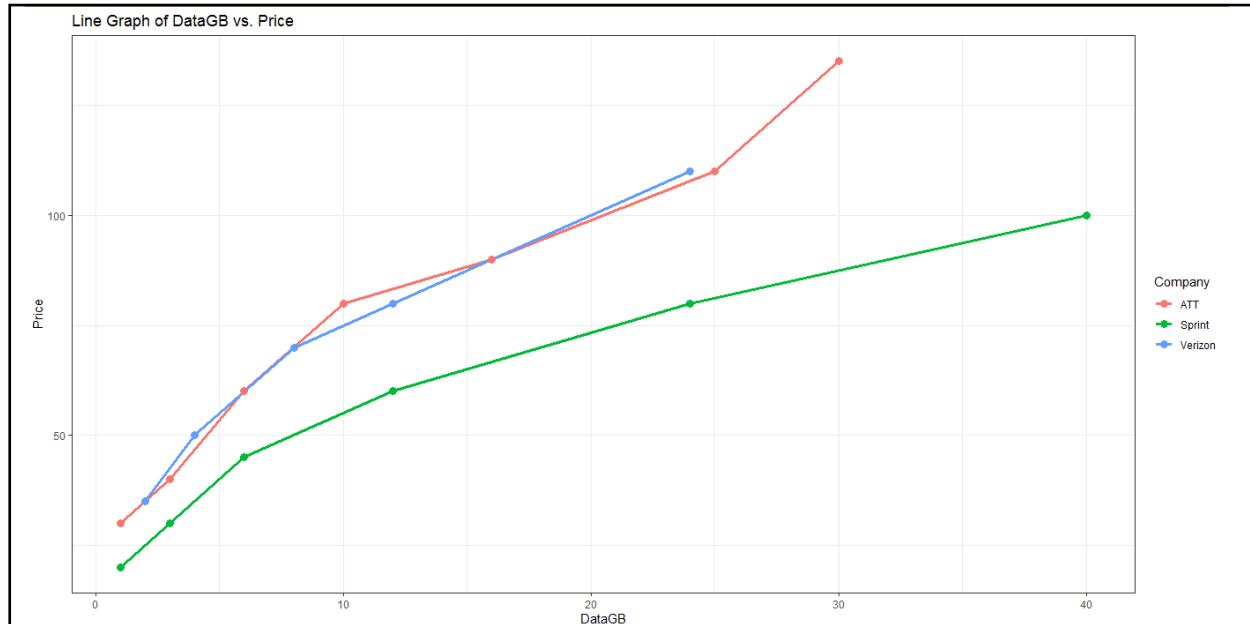

Conclusion: The line graph compares the plans of the three companies ATT (red), Sprint (green) and Verizon (blue).
The plans for Sprint and Verizon start at 1 GB. The Verizon data plan starts at 2 GB.
Verizon has minimum number of plans from 2 GB to 24 GB with a price range from $35 to S110.
ATT follows a similar set of plans like Verizon but extends it plan and price until 30 GB and $135.
Sprint is the least costly amongst all the three carriers with the maximum range of plans from 1 GB to 40 GB and price from $20 to $100.

R Studio (Bubble Chart)

```
> ggplot( data=cellPlans, aes(x=DataGB, y=Price,col=Company) ) +
geom_point(aes(color = Company, size = Price), alpha = 0.7) +
ggtitle("Bubble Plot of DataGB vs. Price") + theme_bw()
```
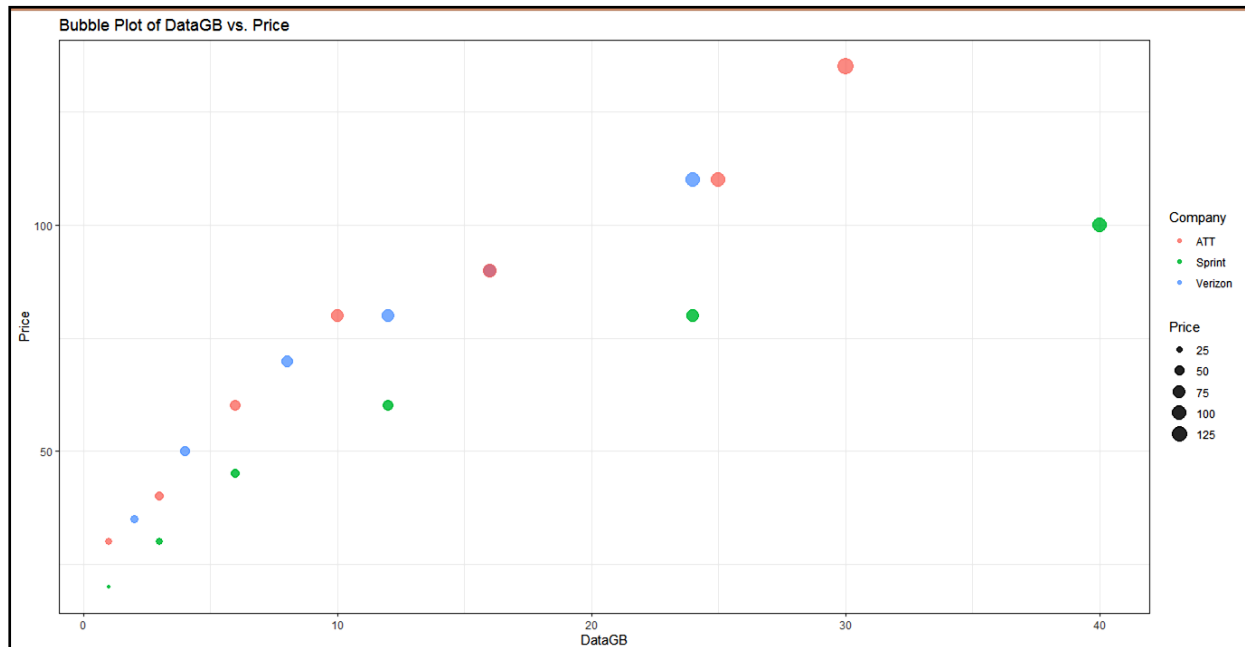

Conclusion: The bubble chart highlights the different points for the three carriers with DataGB on x axis and Price on y axis. The three carriers are differentiated with three different colours ATT (red), Sprint (green) and Verizon (blue).

The size of the bubble determines the price of the plan. Bigger the area of the bubble, higher is the price.

ATT has the bubble with biggest area amongst all the three carriers for 30 GB plan while sprint has the bubble with smallest area for 1 GB plan.

R Studio (Box Plot - DataGB)

```
> ggplot( data=cellPlans, aes(x=Company, y=DataGB, fill=Company) ) +
geom_boxplot(alpha=0.7) + stat_summary( fun = mean, geom="point",
shape=20, size=6 , color="red", fill="red") + ggtitle("Plot of DataGB
Plans by Company") + theme_bw()
```
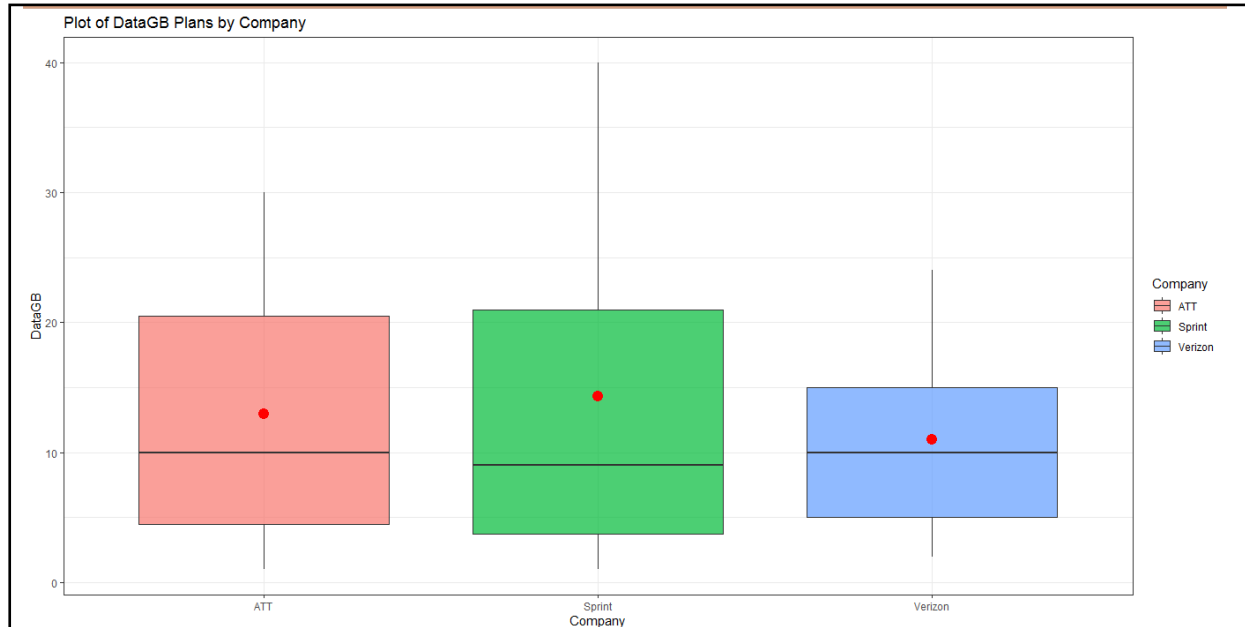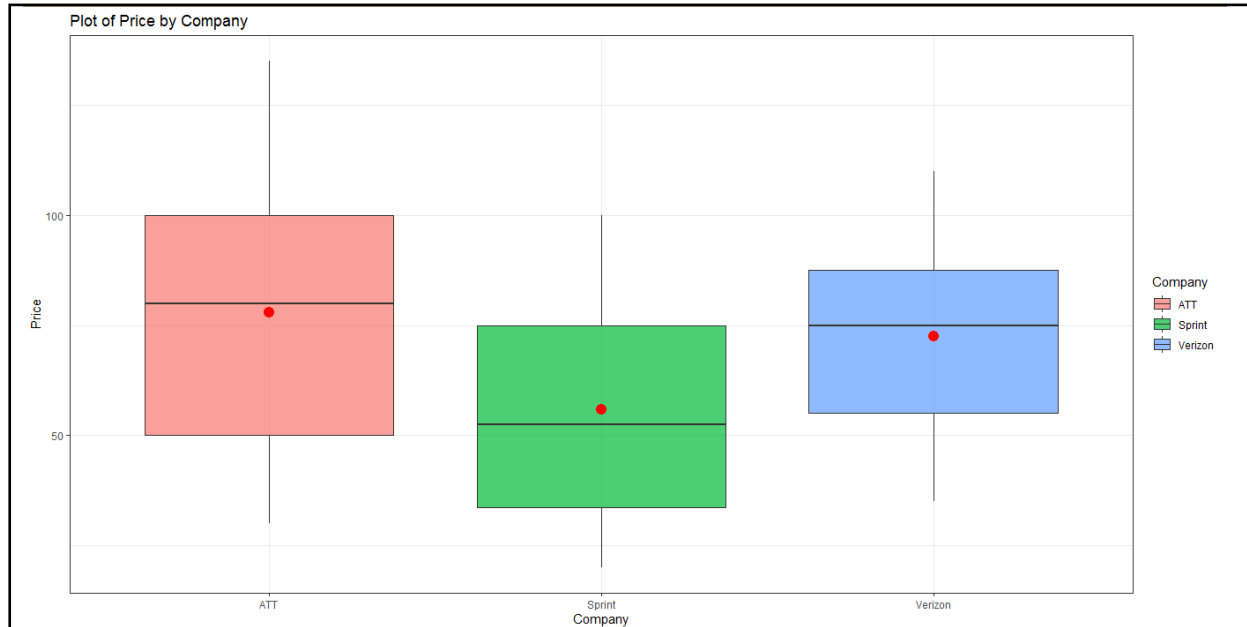

Conclusion: The box plot shows the range of DataGB plan for three different carriers with three different colours ATT (red), Sprint (green) and Verizon (blue). The horizontal line in the box is the median value while the red dot represents the average value.
The DataGB plan for both ATT and Sprint start at 1 GB. The Verizon plan starts at 2 GB.
The box plot shows Sprint has the widest range of plans from 1 GB to 40 GB and Verizon has minimum range of plans from 2 GB to 24 GB.

R Studio (Box Plot - Price)

```
> ggplot( data=cellPlans, aes(x=Company, y=Price, fill=Company) ) +
geom_boxplot(alpha=0.7) + stat_summary( fun = mean, geom="point",
shape=20, size=6, color="red", fill="red") + ggtitle("Plot of Price by
Company") + theme_bw()
```


Conclusion: The box plot shows the range of pricing plan for three different carriers with three different colours ATT (red), Sprint (green) and Verizon (blue). The horizontal line in the box is the median value while the red dot represents the average value.

The box plot compares and shows Sprint is the least costly amongst the three carriers from $20 to $100.

ATT has the most costly plan at $135.