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H Applied Statistics
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#13: An Introduction to the Package ggplot2 For Data Visualization

3).

*data(mtcars)*
*attach(mtcars)*
*library(ggplot2)*
*ggplot(mtcars,aes(x=factor(am),y=qsec,fill=factor(am))) +*
　　*geom_boxplot() +*
　　*labs(x="Transmission Type",*
　　　　*y="1/4 Mile Time",*
　　　　*fill="Transmission Type",*
　　　　*title="1/4 Mile Time Vs. Transmission Type") +*
　　*scale_x_discrete(labels=c("0"="Automatic", "1"="Manual")) +*
　　*scale_fill_discrete(labels=c("0"="Automatic","1"="Manual")) +*
　　*scale_fill_manual(values=c("darkviolet","purple4")) +*
　　*theme(axis.text.y=element_text(angle=90,hjust=.5),*
　　　　*plot.title=element_text(hjust=.5))+*
*coord_flip()*
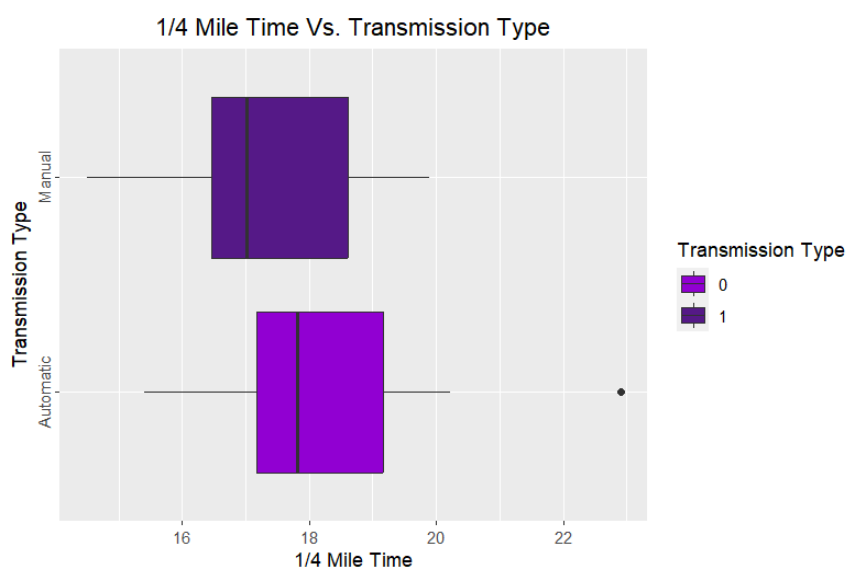
4).

*ggplot(mtcars,aes(x=factor(carb),fill=factor(carb))) +*
    *geom_bar() +*
    *labs(x="Number of Carbs",*
      *y="Frequency",*
      *fill="Number of Carbs",*
      *title="Number of Each Carb Type in Mtcars")+*

*scale_fill_manual(values=c("midnightblue","navyblue","mediumblue","dodgerblue2","deepskyb lue","lightskyblue1"))+*
  *theme(axis.text.y=element_text(angle=90,hjust=.5),*
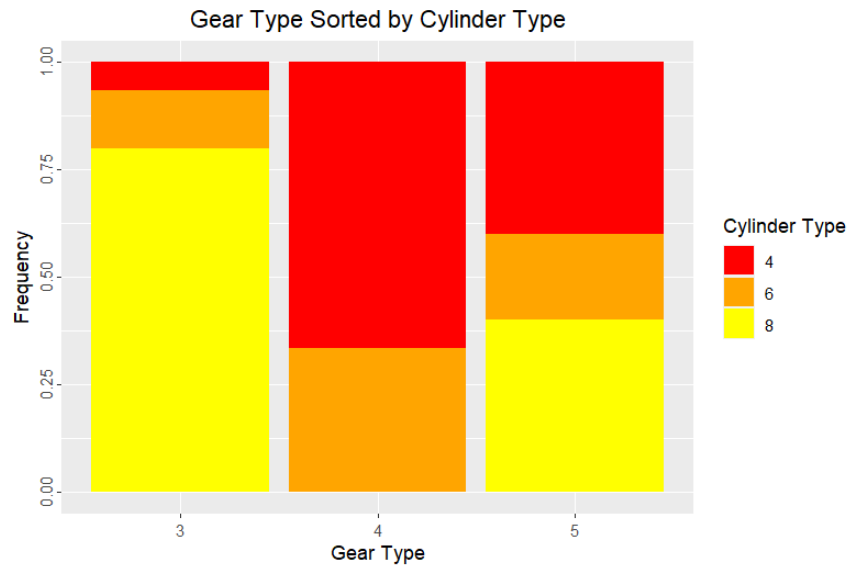    *plot.title=element_text(hjust=.5))*

5).
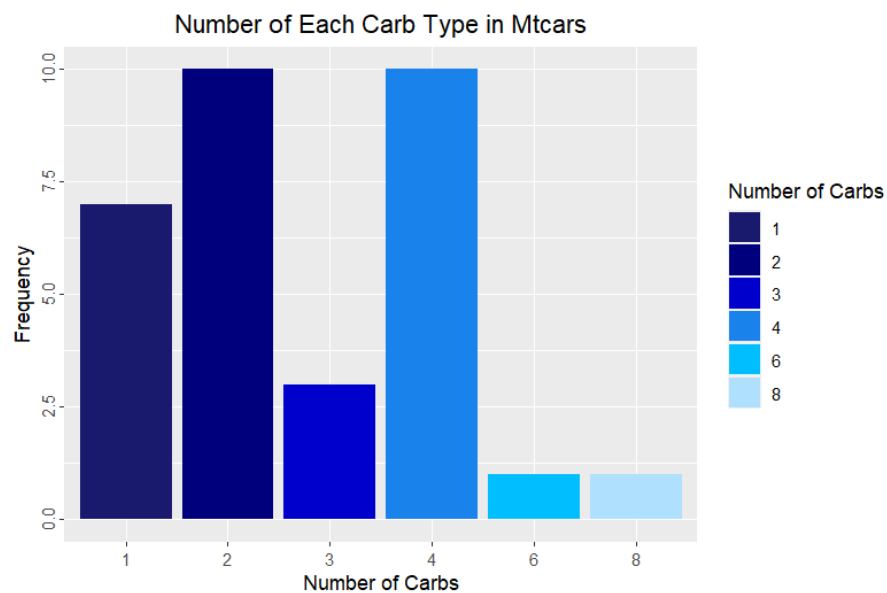
*ggplot(mtcars,aes(x=factor(gear),fill=factor(cyl))) +*
   *geom_bar(position="fill") +*
   *labs(x="Gear Type",*
      *y="Frequency",*
      *fill="Cylinder Type",*
      *title="Gear Type Sorted by Cylinder Type")+*
 *scale_fill_manual(values=c("red","orange","yellow"))+*
 *theme(axis.text.y=element_text(angle=90,hjust=.5),*
    *plot.title=element_text(hjust=.5))*

*ggplot(mtcars,aes(x=factor(gear),fill=factor(cyl))) +*
 *geom_bar() +*
 *labs(x="Gear Type",*
    *y="Frequency",*
    *fill="Cylinder Type",*
    *title="Gear Type Sorted by Cylinder Type")+*
 *scale_fill_manual(values=c("red","orange","yellow"))+*
 *theme(axis.text.y=element_text(angle=90,hjust=.5),*
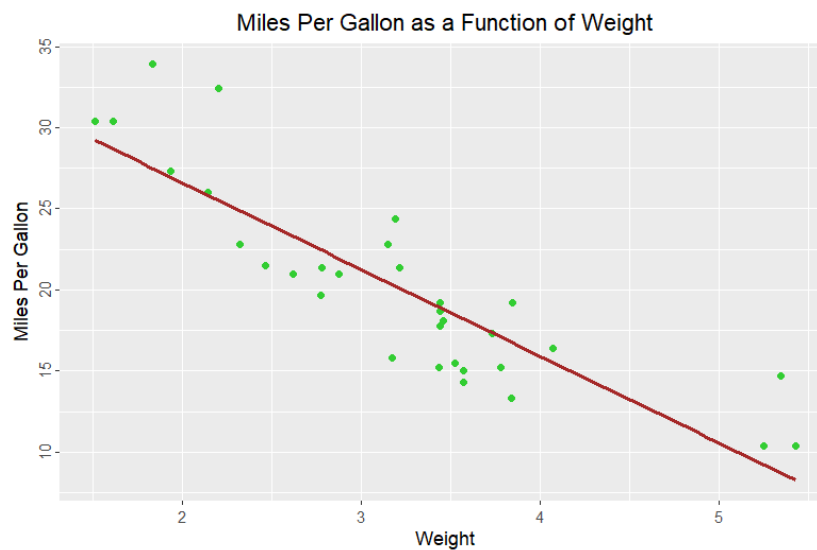    *plot.title=element_text(hjust=.5))*

**Gear Type Sorted by Cylinder Type**
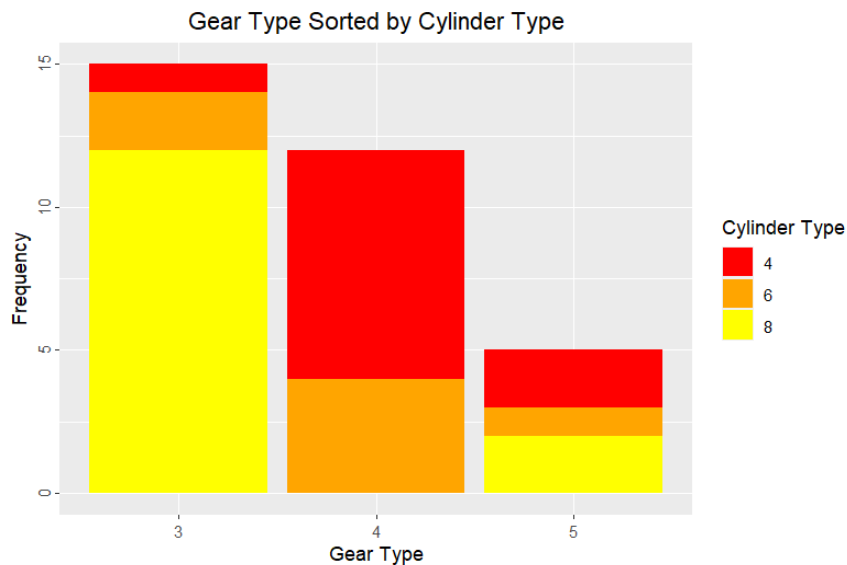


6).

*ggplot(mtcars,aes(x=wt,y=mpg)) +*
  *geom_point(color="limegreen") +*
  *geom_smooth(method=lm,se=FALSE,color="brown")+*
  *labs(x="Weight",*
   *y="Miles Per Gallon",*
   *title="Miles Per Gallon as a Function of Weight")+*
 *theme(axis.text.y=element_text(angle=90,hjust=.5),*
  *plot.title=element_text(hjust=.5))*

**Miles Per Gallon as a Function of Weight**

7).

*ggplot(mtcars,aes(x=hp,fill=factor(carb)))+*
    *geom_histogram() +*
    *labs(x="Horsepower",*
      *y="Frequency",*
      *title="Horsepower as a Function of Number of Carbs",*
      *fill="Number of Carbs")+*
*scale_fill_manual(values=c("black","firebrick4","firebrick3","red1","coral","salmon"))+*
*theme(axis.text.y=element_text(angle=90,hjust=.5),*
    *plot.title=element_text(hjust=.5))*
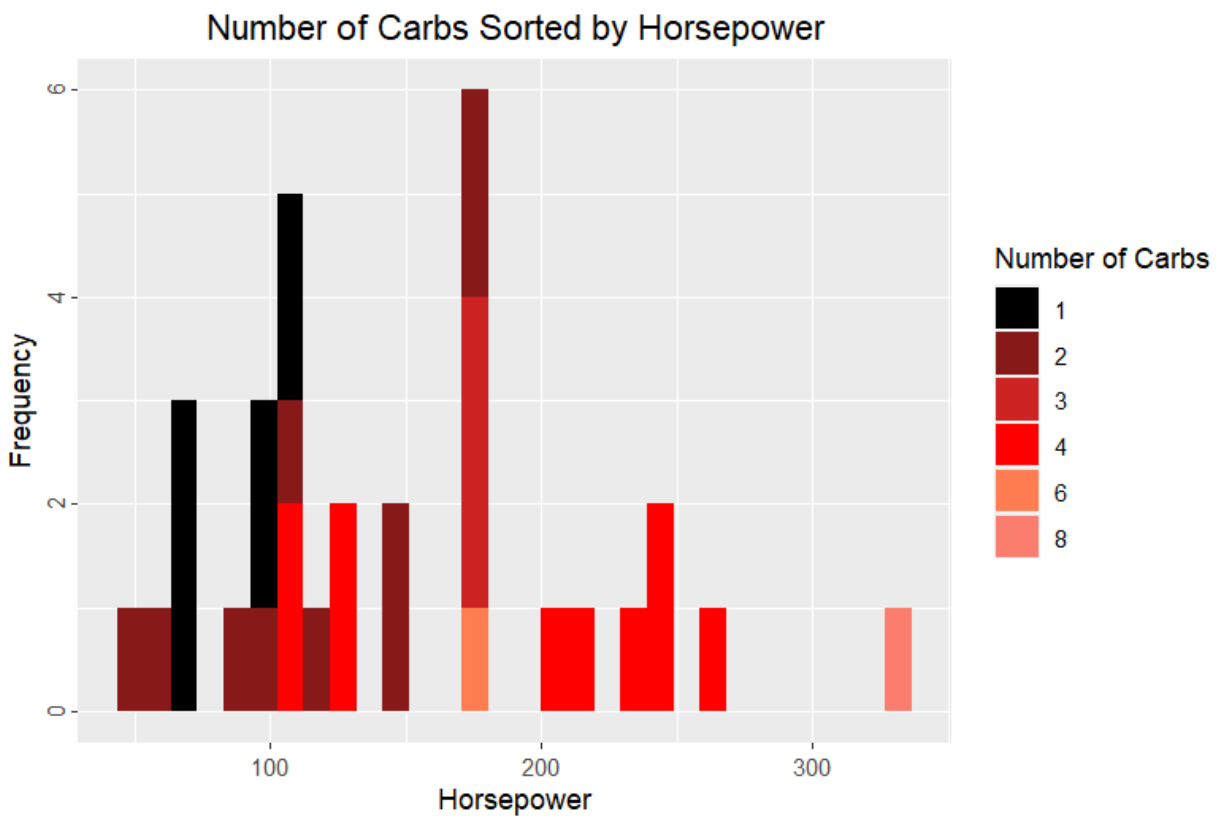
I chose this data visualization because I thought it would be interesting to see if there was a correlation between the number of carbs in a car and its horsepower. Since I already used a scatter plot in plot six, I used a stacked histogram here instead. The histogram shows the number of carbs a car has depending on its horsepower, and it appears that, generally, as horsepower increases, the number of carbs in a car also increases. This suggests a positive linear correlation between the two variables. It also appears as though it is more likely for a car to possess less carbs than more carbs.