Enterprise DNA Data Analysis Workout 005

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# Setup Chunk

#| label: setup #| include: false

library(tidyverse)   
library(ggpubr)  
library(ggthemes)  
  
tips <- read\_csv("https://raw.githubusercontent.com/guipsamora/pandas\_exercises/master/07\_Visualization/Tips/tips.csv", col\_types = cols(...1 = col\_skip()))  
  
tips$day <- factor(tips$day, levels = c("Thur", "Fri", "Sat", "Sun"))  
tips$time <- factor(tips$time, levels = c("Lunch", "Dinner"))  
tips$size <- factor(tips$size, levels = c( "1", "2", "3", "4", "5", "6"))

##Structure of “tips” file to be used in analysis:

# Note: Q1 incorporated in file import step

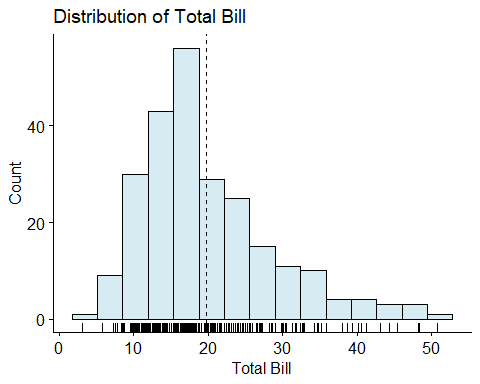
#| label: data overview  
#| echo: false  
knitr::kable(head(tips, 5))

| total\_bill | tip | sex | smoker | day | time | size |
| --- | --- | --- | --- | --- | --- | --- |
| 16.99 | 1.01 | Female | No | Sun | Dinner | 2 |
| 10.34 | 1.66 | Male | No | Sun | Dinner | 3 |
| 21.01 | 3.50 | Male | No | Sun | Dinner | 3 |
| 23.68 | 3.31 | Male | No | Sun | Dinner | 2 |
| 24.59 | 3.61 | Female | No | Sun | Dinner | 4 |

## 

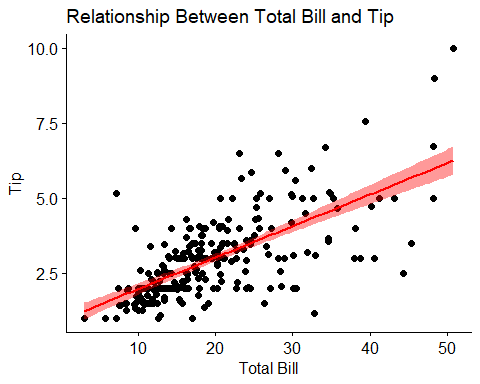
## Q2: Plot the total\_bill column histogram

gghistogram(tips,   
 x="total\_bill",  
 fill = "lightblue",  
 bins = 15,  
 rug = TRUE,  
 add = "mean",  
 xlab = "Total Bill",  
 ylab = "Count",  
 main = "Distribution of Total Bill"  
 )



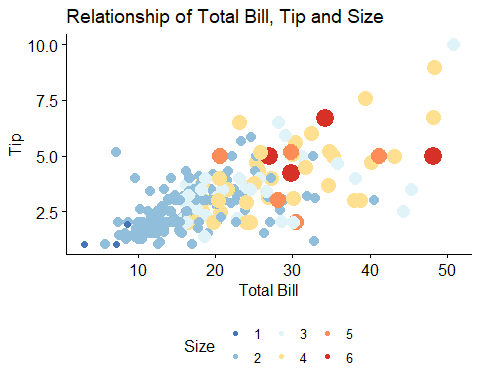
## Q3: Create a scatterplot presenting the relationship between total\_bill and tip

ggscatter(tips,  
 x="total\_bill",  
 y="tip",   
 xlab = "Total Bill",  
 ylab = "Tip",  
 conf.int = TRUE,  
 add = "reg.line",  
 add.params = list(linetype = "solid", color = "red"),  
 main = "Relationship Between Total Bill and Tip"  
 )



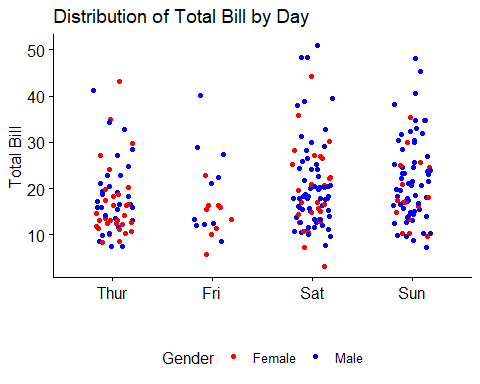
## Q4: Create one image with the relationship of total\_bill, tip and size

ggscatter(data = tips,  
 x = "total\_bill",  
 y = "tip",  
 xlab = "Total Bill",  
 palette = rev( c("#d73027","#fc8d59","#fee090","#e0f3f8","#91bfdb","#4575b4")),  
 ylab = "Tip",  
 color = "size",  
 size = "size",  
 main = "Relationship of Total Bill, Tip and Size"  
 ) + guides(size = guide\_none()) + labs(color = "Size") + theme(legend.position = "bottom")



## Q5: Present the relationship between days and total\_bill value, differ the dots by sex

ggstripchart(data = tips,  
 palette = c("red", "blue"),  
 color = "sex",  
 x = "day",  
 y = "total\_bill",  
 xlab = "",  
 ylab = "Total Bill",  
 main = "Distribution of Total Bill by Day"  
 ) + labs(color = "Gender") + theme(legend.position = "bottom")



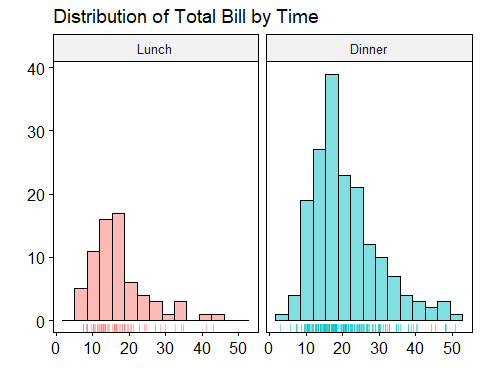
## Q6: # Create a box plot presenting the total\_bill per day differentiated by time

ggboxplot(data = tips,  
 x = "day",  
 y = "total\_bill",  
 fill = "time",  
 xlab = "",  
 ylab = "",  
 main = "Distribution of Total Bill by Day and Time"  
 ) + labs(fill = "Meal") + theme(legend.position = "bottom")



## Q7: Create two histograms (side by side) of the tip value based for Lunch and Dinner

gghistogram(tips,   
 x="total\_bill",  
 fill = "time",  
 bins = 15,  
 rug = TRUE,  
 main = "Distribution of Total Bill by Time",  
 facet.by = "time",  
 xlab = "",  
 ylab = ""  
 ) + labs(fill = "Meal") + theme(legend.position = "none")



# Q8: Create two scatterplots (Male and Female) presenting the total\_bill value and tip relationship, differing by smoker/non-smoker

ggscatter(tips,  
 x="total\_bill",  
 y="tip",   
 conf.int = TRUE,  
 palette = c("cyan", "navyblue"),  
 color = "smoker",  
 facet.by = "sex",  
 add = "reg.line",  
 xlab = "Total Bill",  
 ylab = "Tip",  
 add.params = list(linetype = "solid", color = "red"),  
 main = "Tip by Total Bill by Gender and Smoker"  
 ) + labs(color = "Smoker") + theme(legend.position = "bottom")

