# **Module 6 -Assignment 1**

## **Bradley Zackery**

### **Lubridate**

library(tidyverse)

## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.5 v purrr 0.3.4  
## v tibble 3.1.2 v dplyr 1.0.7  
## v tidyr 1.1.3 v stringr 1.4.0  
## v readr 1.4.0 v forcats 0.5.1

## -- Conflicts ------------------------------------------ tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

library(dbplyr)

##   
## Attaching package: 'dbplyr'

## The following objects are masked from 'package:dplyr':  
##   
## ident, sql

library(lubridate)

##   
## Attaching package: 'lubridate'

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

library(readr)  
Appointments <- read\_csv("C:/Users/bradl/OneDrive/Desktop/MODULE 2/modul 6/Appointments.csv")

##   
## -- Column specification --------------------------------------------------------  
## cols(  
## Age = col\_double(),  
## Sex = col\_double(),  
## ReservationMonth = col\_double(),  
## ReservationDay = col\_double(),  
## ReservationHour = col\_double(),  
## ReservationMinute = col\_double(),  
## CreationMonth = col\_double(),  
## CreationDay = col\_double(),  
## CreationYear = col\_double(),  
## CreationHour = col\_double(),  
## `Creation Minute` = col\_double(),  
## Show = col\_double()  
## )

#==Part 2

#==Question 11-15

# **Working With Dates**

Appointments <- Appointments %>%  
  
mutate(ReservationYear='2019') %>%  
  
mutate(ReservationDate = make\_date(month=ReservationMonth, day=ReservationDay, year=ReservationYear)) %>%  
  
 mutate(CreationDate = make\_date(month=CreationMonth, day=CreationDay, year=CreationYear))   
   
 Appointments$ReservationSpan <- (Appointments$ReservationDate-Appointments$CreationDate)

#==part 3

#==Question 16-22

# **Exploratory Analysis**

summary(Appointments)

## Age Sex ReservationMonth ReservationDay   
## Min. : 0.00 Min. :1.000 Min. :1.000 Min. : 1.00   
## 1st Qu.: 16.00 1st Qu.:1.000 1st Qu.:2.000 1st Qu.: 7.00   
## Median : 34.00 Median :2.000 Median :3.000 Median :15.00   
## Mean : 34.64 Mean :1.597 Mean :2.527 Mean :14.51   
## 3rd Qu.: 51.00 3rd Qu.:2.000 3rd Qu.:3.000 3rd Qu.:21.00   
## Max. :101.00 Max. :2.000 Max. :4.000 Max. :28.00   
## ReservationHour ReservationMinute CreationMonth CreationDay   
## Min. : 0.00 Min. :0 Min. : 1.000 Min. : 1.00   
## 1st Qu.:11.00 1st Qu.:0 1st Qu.: 2.000 1st Qu.: 7.00   
## Median :14.00 Median :0 Median : 2.000 Median :14.00   
## Mean :13.85 Mean :0 Mean : 5.265 Mean :14.51   
## 3rd Qu.:17.00 3rd Qu.:0 3rd Qu.:12.000 3rd Qu.:22.00   
## Max. :21.00 Max. :0 Max. :12.000 Max. :28.00   
## CreationYear CreationHour Creation Minute Show   
## Min. :2018 Min. : 0.00 Min. :0 Min. :0.0000   
## 1st Qu.:2018 1st Qu.:10.00 1st Qu.:0 1st Qu.:1.0000   
## Median :2019 Median :13.00 Median :0 Median :1.0000   
## Mean :2019 Mean :13.42 Mean :0 Mean :0.7898   
## 3rd Qu.:2019 3rd Qu.:16.00 3rd Qu.:0 3rd Qu.:1.0000   
## Max. :2019 Max. :23.00 Max. :0 Max. :1.0000   
## ReservationYear ReservationDate CreationDate ReservationSpan   
## Length:61214 Min. :2019-01-01 Min. :2018-10-03 Length:61214   
## Class :character 1st Qu.:2019-02-01 1st Qu.:2018-12-21 Class :difftime   
## Mode :character Median :2019-03-04 Median :2019-01-20 Mode :numeric   
## Mean :2019-03-01 Mean :2019-01-21   
## 3rd Qu.:2019-03-28 3rd Qu.:2019-02-19   
## Max. :2019-04-28 Max. :2019-03-28

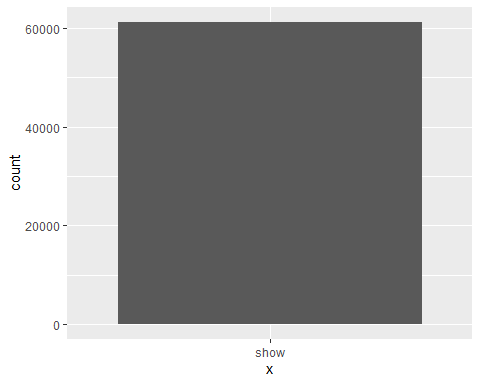
Appointments$ReservationSpan<- as.numeric(Appointments$ReservationSpan)  
  
summary(Appointments)

## Age Sex ReservationMonth ReservationDay   
## Min. : 0.00 Min. :1.000 Min. :1.000 Min. : 1.00   
## 1st Qu.: 16.00 1st Qu.:1.000 1st Qu.:2.000 1st Qu.: 7.00   
## Median : 34.00 Median :2.000 Median :3.000 Median :15.00   
## Mean : 34.64 Mean :1.597 Mean :2.527 Mean :14.51   
## 3rd Qu.: 51.00 3rd Qu.:2.000 3rd Qu.:3.000 3rd Qu.:21.00   
## Max. :101.00 Max. :2.000 Max. :4.000 Max. :28.00   
## ReservationHour ReservationMinute CreationMonth CreationDay   
## Min. : 0.00 Min. :0 Min. : 1.000 Min. : 1.00   
## 1st Qu.:11.00 1st Qu.:0 1st Qu.: 2.000 1st Qu.: 7.00   
## Median :14.00 Median :0 Median : 2.000 Median :14.00   
## Mean :13.85 Mean :0 Mean : 5.265 Mean :14.51   
## 3rd Qu.:17.00 3rd Qu.:0 3rd Qu.:12.000 3rd Qu.:22.00   
## Max. :21.00 Max. :0 Max. :12.000 Max. :28.00   
## CreationYear CreationHour Creation Minute Show   
## Min. :2018 Min. : 0.00 Min. :0 Min. :0.0000   
## 1st Qu.:2018 1st Qu.:10.00 1st Qu.:0 1st Qu.:1.0000   
## Median :2019 Median :13.00 Median :0 Median :1.0000   
## Mean :2019 Mean :13.42 Mean :0 Mean :0.7898   
## 3rd Qu.:2019 3rd Qu.:16.00 3rd Qu.:0 3rd Qu.:1.0000   
## Max. :2019 Max. :23.00 Max. :0 Max. :1.0000   
## ReservationYear ReservationDate CreationDate ReservationSpan   
## Length:61214 Min. :2019-01-01 Min. :2018-10-03 Min. : 1.00   
## Class :character 1st Qu.:2019-02-01 1st Qu.:2018-12-21 1st Qu.: 25.00   
## Mode :character Median :2019-03-04 Median :2019-01-20 Median : 35.00   
## Mean :2019-03-01 Mean :2019-01-21 Mean : 38.53   
## 3rd Qu.:2019-03-28 3rd Qu.:2019-02-19 3rd Qu.: 49.00   
## Max. :2019-04-28 Max. :2019-03-28 Max. :207.00

cor(Appointments$ReservationSpan,Appointments$Show)

## [1] 0.002693853

ggplot(data = Appointments, aes("show"))+  
geom\_bar()

 #a. What is the average time between appointment creation and the actual reservation date? 38.53 #b. What was the max time? 207 #c. What was the min time? 1

#a. Are ReservationSpan and Show highly correlated? No

#a. Based on 0 being “no show” and 1 being “show”, did most people make their appointments? Yes, most people made their appointments.