

# Assignment 11

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## Libraries

```
library(readr)
library(stringr)
library(ggplot2)
library(dplyr)
library(googleVis)
```

## Load data and format columns

```
data<-read_csv("http://www.richardtwatson.com/data/LiOnBattery.csv")

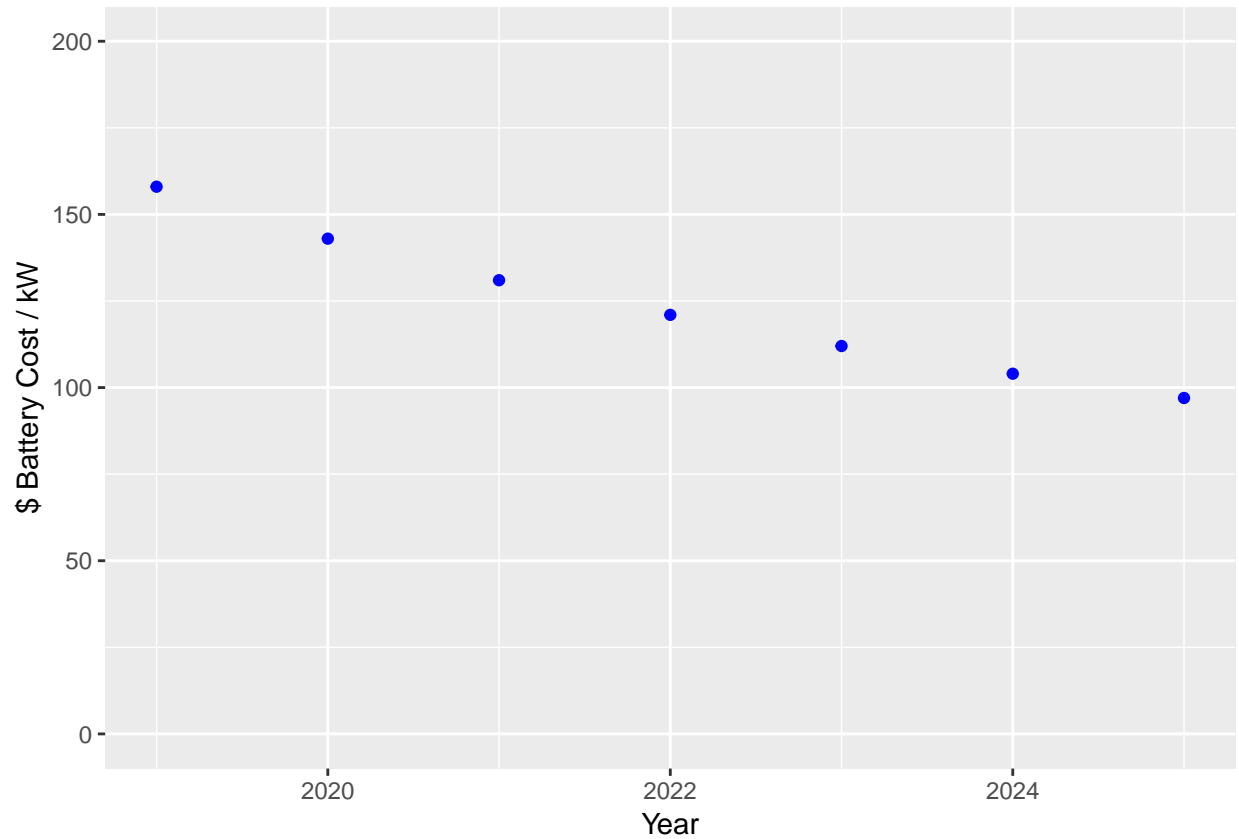
## Parsed with column specification:
## cols(
##   Year = col_double(),
##   `Projected cost of Li-On Battery Storage ($/kW)` = col_double()
## )

data$`Projected cost of Li-On Battery Storage ($/kW)`<-as.numeric(data$`Projected cost of Li-On Battery
colnames(data)[2]<-"projectedBatteryCost"
```

## Point Graph of Projected LiOn Battery Cost

Use ggplot2 to create point graph showing the projected cost of LiOn batteries.

```
ggplot(data, aes(x=Year,y=projectedBatteryCost)) + geom_point(color='blue') +
  ylab('$ Battery Cost / kW') + ylim(0,200)
```

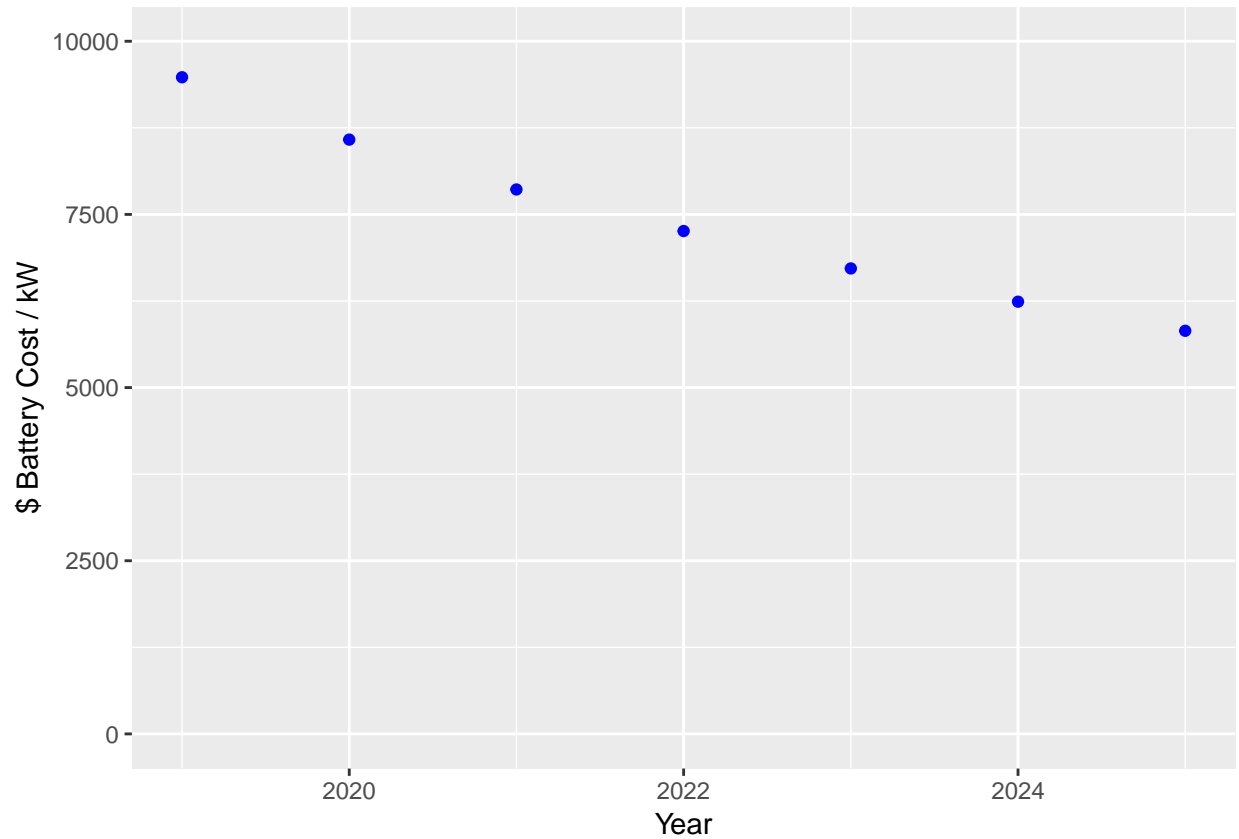


### Line Graph of Projected Bolt Battery Cost

Use ggplot2 to create a line graph showing the projected cost of batteries for a Chevy Bolt

```
# create a column for the cost of Chevy Bolt batteries
data$futureBoltBatteryCost<-data$projectedBatteryCost*60
colnames(data)[3] <- "futureBoltBatteryCost"

ggplot(data, aes(x=Year,y=futureBoltBatteryCost)) + geom_point(color='blue') +
  ylab('$ Battery Cost / kW') + ylim(0,10000)
```

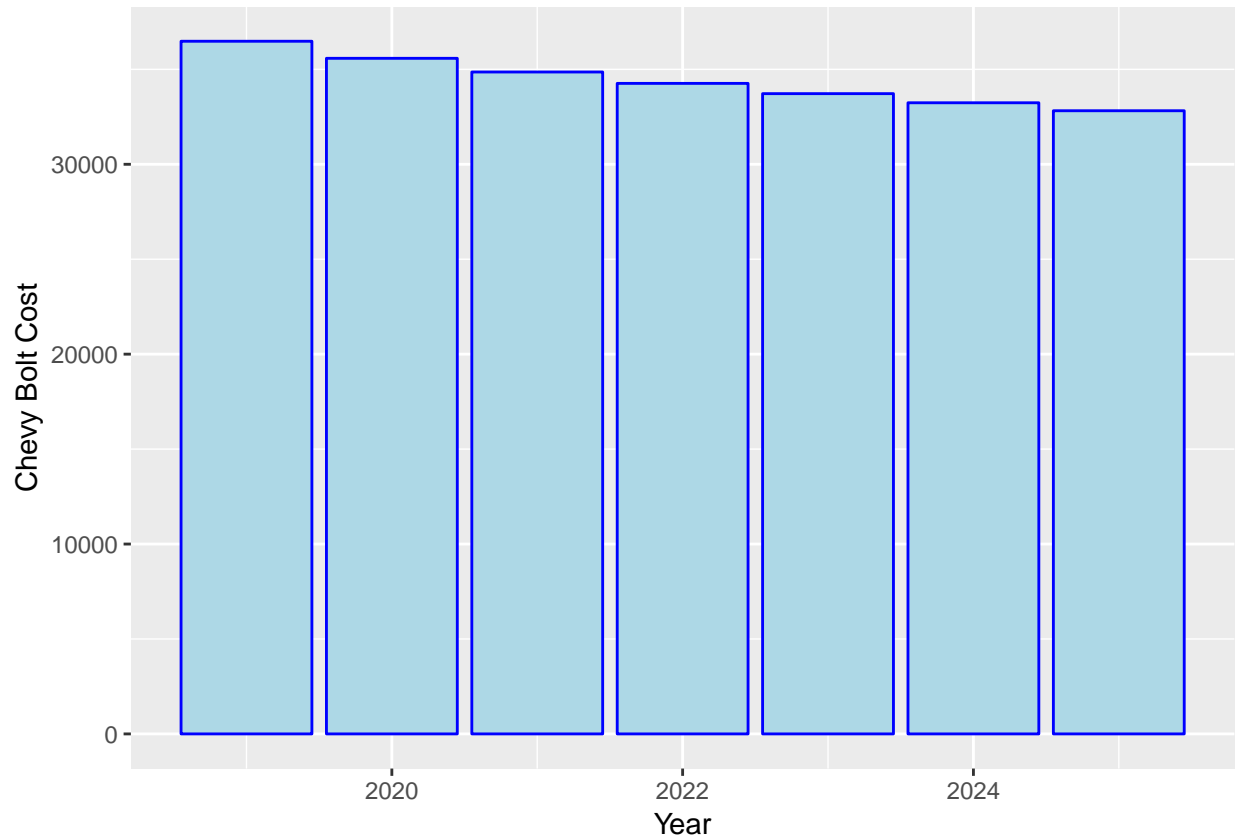


### Bar Graph of Projected Bolt Cost

Use ggplot2 to create a bar graph for the projected cost of a Chevy Bolt

```
#create a column for the cost of Chevy Bolt
data$futureBoltCost<-data$futureBoltBatteryCost+27000

ggplot(data, aes(x=Year,y=futureBoltCost)) +
  geom_col(fill='light blue', color='blue') +
  ylab('Chevy Bolt Cost')
```



googleVis line graph

Illustrates projected bolt cost and percentage of cost that is battery

```
data$batteryPercentOfCost<-data$futureBoltBatteryCost/data$futureBoltCost

CostPredictions <- gvisLineChart(data, "Year", c("futureBoltCost","batteryPercentOfCost"),
                                options=list(title="Projected Bolt Costs",
                                              series="[{targetAxisIndex:0,
                                              color:'red'},
                                              {targetAxisIndex:1,
                                              color:'blue'}]",
                                              vAxes="[{title:'Projected Bolt Cost'},
                                              {title:'Projected Percentage of Cost that is Battery',
                                              format:'#%'}]",
                                              hAxes="[{title:'Year',
                                              format:'####'}]",
                                              width=700, height=400)
)
plot(CostPredictions)

## starting httpd help server ... done
```