R version 4.2.2 (2022-10-31) -- "Innocent and Trusting"

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Platform: aarch64-apple-darwin20 (64-bit)

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Natural language support but running in an English locale

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Type 'demo()' for some demos, 'help()' for on-line help, or

'help.start()' for an HTML browser interface to help.

Type 'q()' to quit R.

[Workspace loaded from ~/.RData]

> install.packages(jsonlite)

Error in install.packages : object 'jsonlite' not found

> install.packages("jsonlite")

trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-arm64/contrib/4.2/jsonlite\_1.8.4.tgz'

Content type 'application/x-gzip' length 1126614 bytes (1.1 MB)

==================================================

downloaded 1.1 MB

The downloaded binary packages are in

/var/folders/bx/btp71ppj2y32jft8xzhjzjw00000gn/T//RtmpD5FnYi/downloaded\_packages

> setwd("/Users/ryanmarshall/Documents/Data Analytics Folder/R\_analysis/Starter\_Code-3")

> setwd("/Users/ryanmarshall/Documents/Data Analytics Folder/R\_analysis/Starter\_Code-3")

> library(dplyr)

Attaching package: ‘dplyr’

The following objects are masked from ‘package:stats’:

filter, lag

The following objects are masked from ‘package:base’:

intersect, setdiff, setequal, union

> library(tidyverse)

── Attaching packages ───────────────────────────────────────────────────────────────────────────────────────────────────────────────────── tidyverse 1.3.2 ──

✔ ggplot2 3.4.0 ✔ purrr 1.0.0

✔ tibble 3.1.8 ✔ stringr 1.5.0

✔ tidyr 1.2.1 ✔ forcats 0.5.2

✔ readr 2.1.3

── Conflicts ──────────────────────────────────────────────────────────────────────────────────────────────────────────────────────── tidyverse\_conflicts() ──

✖ dplyr::filter() masks stats::filter()

✖ dplyr::lag() masks stats::lag()

> mechacars\_df <-read.csv(file='Starter\_code-3,check.names=F,stringsAsFactors = F')

Error in file(file, "rt") : cannot open the connection

In addition: Warning message:

In file(file, "rt") :

cannot open file 'Starter\_code-3,check.names=F,stringsAsFactors = F': No such file or directory

> pwd

Error: object 'pwd' not found

> library(readr)

> MechaCar\_mpg <- read\_csv("MechaCar\_mpg.csv")

Rows: 50 Columns: 6

── Column specification ──────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────

Delimiter: ","

dbl (6): vehicle\_length, vehicle\_weight, spoiler\_angle, ground\_clearance, AWD, mpg

ℹ Use `spec()` to retrieve the full column specification for this data.

ℹ Specify the column types or set `show\_col\_types = FALSE` to quiet this message.

> View(MechaCar\_mpg)

> mechacar\_df <- read.csv("MechaCar\_mpg.csv")

> View(mechacar\_df)

> View(mechacar\_df)

> View(mechacar\_df)

> View(mechacar\_df)

> summary(mechacar\_df)

vehicle\_length vehicle\_weight spoiler\_angle ground\_clearance AWD mpg

Min. :12.00 Min. : 2000 Min. : 0.00 Min. : 6.00 Min. :0.0 Min. :10.00

1st Qu.:13.55 1st Qu.: 5038 1st Qu.:46.82 1st Qu.:11.09 1st Qu.:0.0 1st Qu.:33.51

Median :14.60 Median : 5929 Median :58.55 Median :12.98 Median :0.5 Median :43.40

Mean :15.02 Mean : 6154 Mean :57.12 Mean :12.71 Mean :0.5 Mean :45.13

3rd Qu.:16.00 3rd Qu.: 7505 3rd Qu.:68.82 3rd Qu.:14.50 3rd Qu.:1.0 3rd Qu.:54.53

Max. :20.00 Max. :10000 Max. :90.00 Max. :18.00 Max. :1.0 Max. :80.00

> mecha\_car\_df <- data.frame(x= c(1,2,3,4,5,6),)

Error in data.frame(x = c(1, 2, 3, 4, 5, 6), ) :

argument is missing, with no default

> mecha\_car\_df <- mechacar\_df(x= c(1,2,3,4,5,6)

+ y= c()

Error: unexpected symbol in:

"mecha\_car\_df <- mechacar\_df(x= c(1,2,3,4,5,6)

y"

> mech\_car\_df <- mechacar\_df(x=c(1,2,3,4,5) y= c(6))

Error: unexpected symbol in "mech\_car\_df <- mechacar\_df(x=c(1,2,3,4,5) y"

> mech\_car\_df <- mechacar\_df(x=c(1,2,3,4,5), y= c(6))

Error in mechacar\_df(x = c(1, 2, 3, 4, 5), y = c(6)) :

could not find function "mechacar\_df"

> library(lm)

Error in library(lm) : there is no package called ‘lm’

> libart("lm")

Error in libart("lm") : could not find function "libart"

> library("lm")

Error in library("lm") : there is no package called ‘lm’

> library("linear")

Error in library("linear") : there is no package called ‘linear’

> >?lm()

Error: unexpected '>' in ">"

> ?lm()

> lm(mpg ~ vehicle\_length,mechacar\_df)

Call:

lm(formula = mpg ~ vehicle\_length, data = mechacar\_df)

Coefficients:

(Intercept) vehicle\_length

-25.062 4.673

> lm(mpg ~ vehicle\_length + vehicle\_weight,mechacar\_df)

Call:

lm(formula = mpg ~ vehicle\_length + vehicle\_weight, data = mechacar\_df)

Coefficients:

(Intercept) vehicle\_length vehicle\_weight

-36.158155 4.831365 0.001417

> lm(mpg ~ vehicle\_length + vehicle\_weight + spoiler\_angle + ground\_clearance + AWD,mechacar\_df)

Call:

lm(formula = mpg ~ vehicle\_length + vehicle\_weight + spoiler\_angle +

ground\_clearance + AWD, data = mechacar\_df)

Coefficients:

(Intercept) vehicle\_length vehicle\_weight spoiler\_angle ground\_clearance AWD

-1.040e+02 6.267e+00 1.245e-03 6.877e-02 3.546e+00 -3.411e+00

> mpg\_regression\_lm <- lm(mpg ~ vehicle\_length + vehicle\_weight + spoiler\_angle + ground\_clearance + AWD,mechacar\_df)

> summary(mpg\_regression\_lm)

Call:

lm(formula = mpg ~ vehicle\_length + vehicle\_weight + spoiler\_angle +

ground\_clearance + AWD, data = mechacar\_df)

Residuals:

Min 1Q Median 3Q Max

-19.4701 -4.4994 -0.0692 5.4433 18.5849

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) -1.040e+02 1.585e+01 -6.559 5.08e-08 \*\*\*

vehicle\_length 6.267e+00 6.553e-01 9.563 2.60e-12 \*\*\*

vehicle\_weight 1.245e-03 6.890e-04 1.807 0.0776 .

spoiler\_angle 6.877e-02 6.653e-02 1.034 0.3069

ground\_clearance 3.546e+00 5.412e-01 6.551 5.21e-08 \*\*\*

AWD -3.411e+00 2.535e+00 -1.346 0.1852

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 8.774 on 44 degrees of freedom

Multiple R-squared: 0.7149, Adjusted R-squared: 0.6825

F-statistic: 22.07 on 5 and 44 DF, p-value: 5.35e-11

> View(mpg\_regression\_lm)

> setwd("~/Documents/Data Analytics Folder/R\_analysis/MechaCarChallenge.RScript")

> View(mpg\_regression\_lm)

> save()

Error in save() : 'file' must be specified

In addition: Warning message:

In save() : nothing specified to be save()d

> library(readr)

> Suspension\_Coil <- read\_csv("Suspension\_Coil.csv")

Rows: 150 Columns: 3

── Column specification ──────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────

Delimiter: ","

chr (2): VehicleID, Manufacturing\_Lot

dbl (1): PSI

ℹ Use `spec()` to retrieve the full column specification for this data.

ℹ Specify the column types or set `show\_col\_types = FALSE` to quiet this message.

> View(Suspension\_Coil)

> Suspension\_coil\_df <- read.csv("Suspension\_Coil.csv")

> View(Suspension\_coil\_df)

> suspension\_coil\_table$"Suspension\_Coil.csv"

Error: object 'suspension\_coil\_table' not found

> Suspension\_coil\_df

VehicleID Manufacturing\_Lot PSI

1 V40858 Lot1 1499

2 V40607 Lot1 1500

3 V31443 Lot1 1500

4 V6004 Lot1 1500

5 V7000 Lot1 1501

6 V17344 Lot1 1501

7 V37049 Lot1 1500

8 V9048 Lot1 1499

9 V40947 Lot1 1501

10 V4682 Lot1 1500

11 V35167 Lot1 1500

12 V20839 Lot1 1498

13 V1763 Lot1 1500

14 V7915 Lot1 1499

15 V24283 Lot1 1500

16 V14310 Lot1 1500

17 V48331 Lot1 1502

18 V24679 Lot1 1499

19 V26894 Lot1 1498

20 V42152 Lot1 1501

21 V213 Lot1 1500

22 V4312 Lot1 1499

23 V34599 Lot1 1501

24 V5945 Lot1 1500

25 V45341 Lot1 1498

26 V11514 Lot1 1499

27 V2168 Lot1 1501

28 V22022 Lot1 1499

29 V39970 Lot1 1499

30 V25197 Lot1 1502

31 V8438 Lot1 1500

32 V14229 Lot1 1502

33 V493 Lot1 1501

34 V16491 Lot1 1500

35 V1037 Lot1 1500

36 V11948 Lot1 1500

37 V34990 Lot1 1500

38 V10773 Lot1 1501

39 V41106 Lot1 1500

40 V37342 Lot1 1501

41 V23497 Lot1 1500

42 V47918 Lot1 1499

43 V24631 Lot1 1499

44 V44338 Lot1 1500

45 V6203 Lot1 1499

46 V41780 Lot1 1500

47 V25772 Lot1 1501

48 V33072 Lot1 1501

49 V9609 Lot1 1501

50 V17444 Lot1 1499

51 V2937 Lot2 1499

52 V33662 Lot2 1501

53 V35897 Lot2 1499

54 V40383 Lot2 1500

55 V31118 Lot2 1505

56 V49231 Lot2 1499

57 V16893 Lot2 1502

58 V19636 Lot2 1500

59 V24531 Lot2 1499

60 V29702 Lot2 1497

61 V27432 Lot2 1499

62 V41076 Lot2 1494

63 V31174 Lot2 1496

64 V21322 Lot2 1498

65 V27412 Lot2 1498

66 V13774 Lot2 1502

67 V45883 Lot2 1504

68 V29723 Lot2 1498

69 V8872 Lot2 1500

70 V3320 Lot2 1498

71 V18858 Lot2 1501

72 V9531 Lot2 1500

73 V44685 Lot2 1501

74 V12054 Lot2 1502

75 V16182 Lot2 1501

76 V14013 Lot2 1499

77 V9627 Lot2 1505

78 V41360 Lot2 1505

79 V924 Lot2 1500

80 V47525 Lot2 1504

81 V31495 Lot2 1500

82 V38509 Lot2 1503

83 V17834 Lot2 1495

84 V20413 Lot2 1503

85 V17502 Lot2 1504

86 V40607 Lot2 1503

87 V44576 Lot2 1500

88 V35190 Lot2 1500

89 V46374 Lot2 1500

90 V47062 Lot2 1499

91 V11605 Lot2 1496

92 V14941 Lot2 1502

93 V2942 Lot2 1501

94 V32735 Lot2 1506

95 V45208 Lot2 1501

96 V40317 Lot2 1495

97 V36280 Lot2 1497

98 V31949 Lot2 1500

99 V49281 Lot2 1499

100 V34138 Lot2 1500

101 V5908 Lot3 1503

102 V9510 Lot3 1501

103 V3092 Lot3 1496

104 V49408 Lot3 1503

105 V35127 Lot3 1496

106 V27926 Lot3 1503

107 V830 Lot3 1498

108 V25929 Lot3 1499

109 V45061 Lot3 1477

110 V33860 Lot3 1499

111 V27039 Lot3 1501

112 V16942 Lot3 1495

113 V1405 Lot3 1480

114 V7785 Lot3 1502

115 V39902 Lot3 1503

116 V47785 Lot3 1491

117 V42574 Lot3 1501

118 V35633 Lot3 1542

119 V38088 Lot3 1474

120 V39133 Lot3 1498

121 V8204 Lot3 1498

122 V37577 Lot3 1515

123 V30892 Lot3 1499

124 V37654 Lot3 1503

125 V12051 Lot3 1501

126 V5504 Lot3 1495

127 V15755 Lot3 1498

128 V13224 Lot3 1499

129 V46194 Lot3 1452

130 V47096 Lot3 1458

131 V9537 Lot3 1501

132 V7763 Lot3 1500

133 V41771 Lot3 1508

134 V28453 Lot3 1483

135 V21383 Lot3 1492

136 V26143 Lot3 1489

137 V38622 Lot3 1497

138 V19109 Lot3 1485

139 V32572 Lot3 1507

140 V793 Lot3 1500

141 V26325 Lot3 1499

142 V42093 Lot3 1486

143 V46047 Lot3 1498

144 V17544 Lot3 1496

145 V9896 Lot3 1496

146 V20689 Lot3 1491

147 V18191 Lot3 1494

148 V39791 Lot3 1503

149 V10053 Lot3 1499

150 V45267 Lot3 1503

> sumamarize(Suspension\_coil\_df)

Error in sumamarize(Suspension\_coil\_df) :

could not find function "sumamarize"

> summary(Suspension\_coil\_df)

VehicleID Manufacturing\_Lot PSI

Length:150 Length:150 Min. :1452

Class :character Class :character 1st Qu.:1498

Mode :character Mode :character Median :1500

Mean :1499

3rd Qu.:1501

Max. :1542

> total\_summary <- Suspension\_coil\_df %>% summarise(mean = mean(PSI), )

> total\_summary <- Suspension\_coil\_df %>% summarise(mean = mean(PSI), median = median(PSI),variance = var(PSI), standard\_deviation = sd(PSI) )

> total\_summary

mean median variance standard\_deviation

1 1498.78 1500 62.29356 7.892627

> lot\_sumary <- Suspension\_coil\_df %>% group\_by(Manufacturing\_Lot) %>% summarise(mean = mean(PSI), median = median(PSI), variance = var(PSI), standard\_deviation = sd(PSI))

> lot\_sumary

# A tibble: 3 × 5

Manufacturing\_Lot mean median variance standard\_deviation

<chr> <dbl> <dbl> <dbl> <dbl>

1 Lot1 1500 1500 0.980 0.990

2 Lot2 1500. 1500 7.47 2.73

3 Lot3 1496. 1498. 170. 13.0

> ?t.test

> t.test(Suspension\_coil\_df$PSI,mu =1500)

One Sample t-test

data: Suspension\_coil\_df$PSI

t = -1.8931, df = 149, p-value = 0.06028

alternative hypothesis: true mean is not equal to 1500

95 percent confidence interval:

1497.507 1500.053

sample estimates:

mean of x

1498.78

> t.test(Suspension\_coil\_df, Manufacturing\_Lot = 'Lot1'$PSI,mu =1500)

Error in if (stderr < 10 \* .Machine$double.eps \* abs(mx)) stop("data are essentially constant") :

missing value where TRUE/FALSE needed

In addition: Warning messages:

1: In mean.default(x) : argument is not numeric or logical: returning NA

2: In var(x) : NAs introduced by coercion

> t.test(subset(Suspension\_coil\_df, Manufacturing\_Lot = 'Lot1')$PSI,mu =1500)

One Sample t-test

data: subset(Suspension\_coil\_df, Manufacturing\_Lot = "Lot1")$PSI

t = -1.8931, df = 149, p-value = 0.06028

alternative hypothesis: true mean is not equal to 1500

95 percent confidence interval:

1497.507 1500.053

sample estimates:

mean of x

1498.78

> t.test(subset(Suspension\_coil\_df, Manufacturing\_Lot = 'Lot2')$PSI,mu =1500)

One Sample t-test

data: subset(Suspension\_coil\_df, Manufacturing\_Lot = "Lot2")$PSI

t = -1.8931, df = 149, p-value = 0.06028

alternative hypothesis: true mean is not equal to 1500

95 percent confidence interval:

1497.507 1500.053

sample estimates:

mean of x

1498.78

> t.test(subset(Suspension\_coil\_df, Manufacturing\_Lot = 'Lot3')$PSI,mu =1500)

One Sample t-test

data: subset(Suspension\_coil\_df, Manufacturing\_Lot = "Lot3")$PSI

t = -1.8931, df = 149, p-value = 0.06028

alternative hypothesis: true mean is not equal to 1500

95 percent confidence interval:

1497.507 1500.053

sample estimates:

mean of x

1498.78

>