HW\_11

izd3

## Problem #01 - Chapter 40 Exercise #03B (Alternating with all the given strings will get minimal credit)

# Show your work here  
library(stringr)

## Warning: package 'stringr' was built under R version 4.2.3

starting\_strings <- c("A", "Ad", "Add", "Aing", "Ading", "Adding")  
filtered\_sentences <- str\_subset(sentences, str\_c("^", paste(starting\_strings, collapse = "|")))  
length(filtered\_sentences)

## [1] 93

filtered\_sentences

## [1] "A large size in stockings is hard to sell."   
## [2] "A rod is used to catch pink salmon."   
## [3] "A pot of tea helps to pass the evening."   
## [4] "A king ruled the state in the early days."   
## [5] "Adding fast leads to wrong sums."   
## [6] "A saw is a tool used for making boards."   
## [7] "A cup of sugar makes sweet fudge."   
## [8] "A small creek cut across the field."   
## [9] "A yacht slid around the point into the bay."   
## [10] "A tame squirrel makes a nice pet."   
## [11] "Always close the barn door tight."   
## [12] "A wisp of cloud hung in the blue air."   
## [13] "A pound of sugar costs more than eggs."   
## [14] "A Tusk is used to make costly gifts."   
## [15] "Add the sum to the product of these three."   
## [16] "Act on these orders with great speed."   
## [17] "A lame back kept his score low."   
## [18] "A cramp is no small danger on a swim."   
## [19] "A salt pickle tastes fine with ham."   
## [20] "A speedy man can beat this track mark."   
## [21] "At that high level the air is pure."   
## [22] "A filing case is now hard to buy."   
## [23] "An abrupt start does not win the prize."   
## [24] "A rag will soak up spilled water."   
## [25] "A shower of dirt fell from the hot pipes."   
## [26] "Add the store's account to the last cent."   
## [27] "Acid burns holes in wool cloth."   
## [28] "A young child should not suffer fright."   
## [29] "Add the column and put the sum here."   
## [30] "A blue crane is a tall wading bird."   
## [31] "A fresh start will work such wonders."   
## [32] "After the dance, they went straight home."   
## [33] "A pencil with black lead writes best."   
## [34] "A waxed floor makes us lose balance."   
## [35] "Add salt before you fry the egg."   
## [36] "A dash of pepper spoils beef stew."   
## [37] "A zestful food is the hot-cross bun."   
## [38] "A joy to every child is the swan boat."   
## [39] "All sat frozen and watched the screen."   
## [40] "A cloud of dust stung his tender eyes."   
## [41] "A ridge on a smooth surface is a bump or flaw."   
## [42] "A gem in the rough needs work to polish."   
## [43] "A castle built from sand fails to endure."   
## [44] "A child's wit saved the day for us."   
## [45] "A ripe plum is fit for a king's palate."   
## [46] "A sash of gold silk will trim her dress."   
## [47] "A siege will crack the strong defense."   
## [48] "A lathe cuts and trims any wood."   
## [49] "A cone costs five cents on Mondays."   
## [50] "A pod is what peas always grow in."   
## [51] "A list of names is carved around the base."   
## [52] "A chink in the wall allowed a draft to blow."   
## [53] "A cold dip restores health and zest."   
## [54] "A gray mare walked before the colt."   
## [55] "A clean neck means a neat collar."   
## [56] "A fur muff is stylish once more."   
## [57] "A fence cuts through the corner lot."   
## [58] "A quart of milk is water for the most part."   
## [59] "A man in a blue sweater sat at the desk."   
## [60] "A sip of tea revives his tired friend."   
## [61] "A force equal to that would move the earth."   
## [62] "A bowl of rice is free with chicken stew."   
## [63] "A big wet stain was on the round carpet."   
## [64] "A rich farm is rare in this sandy waste."   
## [65] "A strong bid may scare your partner stiff."   
## [66] "A thing of small note can cause despair."   
## [67] "A thick coat of black paint covered all."   
## [68] "At night the alarm roused him from a deep sleep."  
## [69] "A brown leather bag hung from its strap."   
## [70] "A toad and a frog are hard to tell apart."   
## [71] "A white silk jacket goes with any shoes."   
## [72] "A break in the dam almost caused a flood."   
## [73] "A round hole was drilled through the thin board."  
## [74] "A vent near the edge brought in fresh air."   
## [75] "A sullen smile gets few friends."   
## [76] "A stiff cord will do to fasten your shoe."   
## [77] "A plea for funds seems to come again."   
## [78] "A thin stripe runs down the middle."   
## [79] "A six comes up more often than a ten."   
## [80] "A steep trail is painful for our feet."   
## [81] "A whiff of it will cure the most stubborn cold."   
## [82] "A cruise in warm waters in a sleek yacht is fun."  
## [83] "A streak of color ran down the left edge."   
## [84] "A gold vase is both rare and costly."   
## [85] "A smatter of French is worse than none."   
## [86] "A round mat will cover the dull spot."   
## [87] "A good book informs of what we ought to know."   
## [88] "A flat pack takes less luggage space."   
## [89] "A stuffed chair slipped from the moving van."   
## [90] "A thin book fits in the side pocket."   
## [91] "A gold ring will please most any girl."   
## [92] "A pink shell was found on the sandy beach."   
## [93] "A severe storm tore down the barn."

## Problem #02 - Chapter 40 Exercise #10

# Show your work here  
  
filtered\_sentences <- str\_subset(sentences, "^The.\*ed.\*the .\*ed$")  
filtered\_sentences

## character(0)

## Problem #03 - Chapter 40 Exercise #11

# Show your work here  
pattern <- "(er|se).\*([a-zA-Z])\\2.\*\\1"  
  
# Create a single vector containing all strings that satisfy the specified conditions  
filtered\_sentences <- str\_subset(sentences, pattern)  
  
# Display the resulting vector  
 filtered\_sentences

## [1] "Her purse was full of useless trash."   
## [2] "This horse will nose his way to the finish."   
## [3] "The couch cover and hall drapes were blue."   
## [4] "The case was puzzling to the old and wise."   
## [5] "Sit on the perch and tell the others what to do."

## Problem #04 - Chapter 41 Exercise #5 (display all this information in a single tibble/dataframe)

# Show your work here  
library(openintro)

## Warning: package 'openintro' was built under R version 4.2.3

## Loading required package: airports

## Warning: package 'airports' was built under R version 4.2.3

## Loading required package: cherryblossom

## Warning: package 'cherryblossom' was built under R version 4.2.3

## Loading required package: usdata

## Warning: package 'usdata' was built under R version 4.2.3

library(dplyr)

## Warning: package 'dplyr' was built under R version 4.2.3

##   
## 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

data("nycflights")  
  
nycflights|>  
 group\_by(carrier,origin)|>  
 summarise(  
 avg\_dep\_delay = mean(dep\_delay, na.rm = TRUE),  
 avg\_arr\_delay = mean(arr\_delay, na.rm = TRUE),  
 min\_dep\_delay = min(dep\_delay, na.rm = TRUE),  
 max\_dep\_delay = max(dep\_delay, na.rm = TRUE),  
 min\_arr\_delay = min(arr\_delay, na.rm = TRUE),  
 max\_arr\_delay = max(arr\_delay, na.rm = TRUE)  
 )

## `summarise()` has grouped output by 'carrier'. You can override using the  
## `.groups` argument.

## # A tibble: 35 × 8  
## # Groups: carrier [16]  
## carrier origin avg\_dep\_delay avg\_arr\_delay min\_dep\_delay max\_dep\_delay  
## <chr> <chr> <dbl> <dbl> <dbl> <dbl>  
## 1 9E EWR 4.77 3.11 -15 196  
## 2 9E JFK 19.9 9.51 -17 376  
## 3 9E LGA 10.2 2.94 -19 241  
## 4 AA EWR 8.77 -2.55 -14 368  
## 5 AA JFK 10.9 2.98 -11 347  
## 6 AA LGA 7.58 0.838 -18 803  
## 7 AS EWR 5.18 -11.3 -20 167  
## 8 B6 EWR 13.3 9.35 -20 220  
## 9 B6 JFK 13.1 9.40 -17 392  
## 10 B6 LGA 13.6 12.4 -21 290  
## # ℹ 25 more rows  
## # ℹ 2 more variables: min\_arr\_delay <dbl>, max\_arr\_delay <dbl>

## Problem #05 - Chapter 41 Exercise #06

# Show your work here  
library(babynames)

## Warning: package 'babynames' was built under R version 4.2.3

##   
## Attaching package: 'babynames'

## The following object is masked from 'package:openintro':  
##   
## births

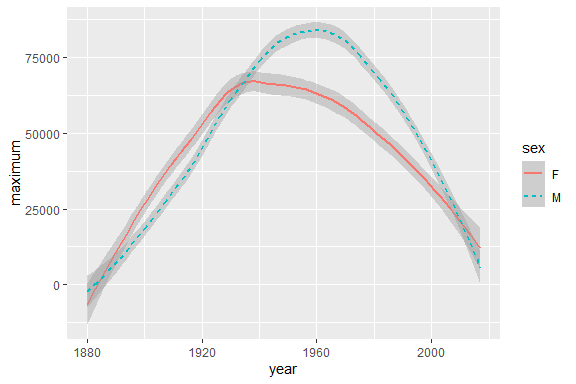
library(ggplot2)

## Warning: package 'ggplot2' was built under R version 4.2.3

babynames|>  
 group\_by(  
 sex,year  
 )|>  
 summarise(max\_num=max(n))|>  
 ggplot(aes(y=max\_num,x=year,color=sex))+geom\_smooth(aes(linetype=sex))+  
 labs(  
 x="year",  
 y="maximum"  
 )

## `summarise()` has grouped output by 'sex'. You can override using the `.groups`  
## argument.

## `geom\_smooth()` using method = 'loess' and formula = 'y ~ x'



## Problem #06 - Chapter 42 Exercise #2ABC

# Show your work here  
ChickWeight.tib|>  
 filter(weight>350 | Time<1)

## # A tibble: 52 × 4  
## weight Time Chick Diet   
## <dbl> <dbl> <ord> <fct>  
## 1 42 0 1 1   
## 2 40 0 2 1   
## 3 43 0 3 1   
## 4 42 0 4 1   
## 5 41 0 5 1   
## 6 41 0 6 1   
## 7 41 0 7 1   
## 8 42 0 8 1   
## 9 42 0 9 1   
## 10 41 0 10 1   
## # ℹ 42 more rows

Formaldehyde.tib|>  
 filter(carb<=0.3 & optden>0.2)

## # A tibble: 1 × 2  
## carb optden  
## <dbl> <dbl>  
## 1 0.3 0.269

Loblolly.tib|>  
 filter(age>=4&age<=10&Seed==329)

## # A tibble: 2 × 3  
## height age Seed   
## <dbl> <dbl> <ord>  
## 1 9.34 5 329   
## 2 26.1 10 329

## Problem #07 - Chapter 42 Exercise #03BD

# Show your work here  
library(lubridate)

## Warning: package 'lubridate' was built under R version 4.2.3

##   
## Attaching package: 'lubridate'

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

Dates006.tib$dateData<-ydm(Dates006.tib$dateData)  
Dates006.tib|>  
 filter(dateData<"1910-01-01")

## # A tibble: 27 × 5  
## dateData soilent green people nooooo  
## <date> <dbl> <dbl> <chr> <chr>   
## 1 1900-11-21 11.8 41.6 B X   
## 2 1902-10-10 12.0 89.8 A X   
## 3 1902-10-20 11.7 65.5 A X   
## 4 1903-03-14 11.7 15.9 B X   
## 5 1903-08-05 11.8 45.1 B X   
## 6 1903-08-18 12.0 30.7 B X   
## 7 1903-02-10 11.1 -1.54 B X   
## 8 1903-02-28 11.1 53.3 A X   
## 9 1903-05-18 10.4 12.0 B X   
## 10 1903-07-10 13.6 58.4 A X   
## # ℹ 17 more rows

Dates007.tib$date.data=make\_date(year = Dates007.tib$years.data,  
 month = match(Dates007.tib$months.data,month.abb),  
 day = Dates007.tib$days.data)  
  
Dates007.tib|>  
 filter(date.data>= "1960-02-01" & date.data <= "1962-09-02")

## # A tibble: 10 × 7  
## months.data years.data days.data Ill be back date.data   
## <chr> <int> <chr> <dbl> <dbl> <chr> <date>   
## 1 Oct 1960 23 -0.956 4.50 T-800 1960-10-23  
## 2 Aug 1960 19 -0.743 3.16 T-1000 1960-08-19  
## 3 Aug 1960 02 -0.986 3.87 T-1000 1960-08-02  
## 4 Feb 1960 28 -0.984 2.41 T-1000 1960-02-28  
## 5 Aug 1960 26 -0.900 2.79 T-1000 1960-08-26  
## 6 Feb 1962 25 -0.779 -3.75 T-1000 1962-02-25  
## 7 Jan 1962 26 -0.920 2.86 T-1000 1962-01-26  
## 8 May 1962 25 -0.995 -0.373 T-1000 1962-05-25  
## 9 Jun 1962 08 -0.996 1.31 T-1000 1962-06-08  
## 10 Apr 1962 02 -0.890 -2.66 T-1000 1962-04-02

## Problem #08 - Chapter 42 Exercise #04C

# Show your work here  
answer<-ggplot002.tib|>  
 arrange(desc(y))  
  
answer<- rbind(head(answer, 10), tail(answer, 10))  
  
answer

## # A tibble: 20 × 4  
## x y grade course  
## <dbl> <dbl> <chr> <chr>   
## 1 1.5 -0.0397 A J   
## 2 2.5 -2.25 C J   
## 3 3.5 -4.92 D J   
## 4 1.5 -5.55 B J   
## 5 1.5 -5.95 C J   
## 6 1.5 -6.11 D J   
## 7 2.5 -6.36 D J   
## 8 6.5 -6.92 C K   
## 9 6.5 -7.40 A K   
## 10 3.5 -9.25 A J   
## 11 20.5 -43.5 D N   
## 12 19.5 -44.2 B N   
## 13 19.5 -47.0 D N   
## 14 20.5 -48.3 B N   
## 15 19.5 -49.7 C N   
## 16 17.5 -49.9 B N   
## 17 17.5 -51.2 D N   
## 18 19.5 -51.4 A N   
## 19 20.5 -55.7 A N   
## 20 20.5 -60.4 C N