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
```

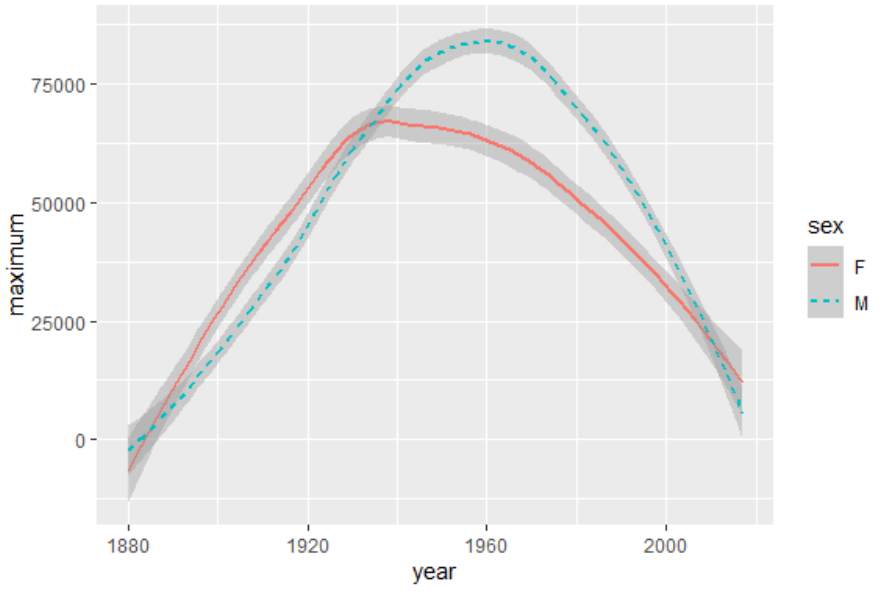
```
library(ggplot2)
```

```
## 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
```