Project 9 Solutions

Kevin Choe

Collaborators: N/A

TA help: Katie Brinkers guided with problems 1-7, explained new concepts

Online resources used: Stat 190 Example Book (All problems)

Question 1

```
library(imager)
```

```
Loading required package: magrittr
```

```

Attaching package: 'imager'
```

```
The following object is masked from 'package:magrittr':

    add
```

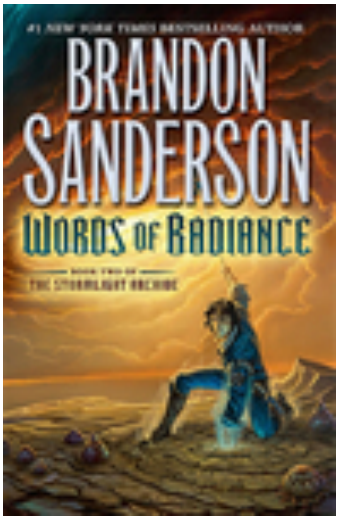
```
The following objects are masked from 'package:stats':

    convolve, spectrum
```

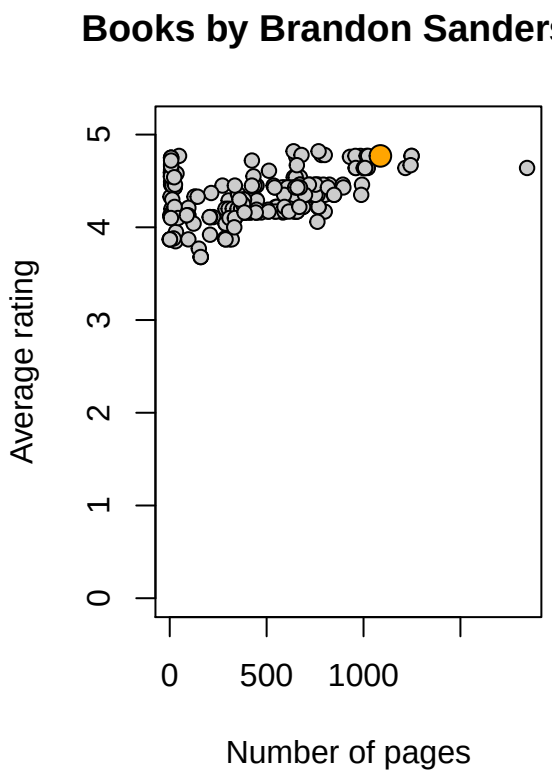
```
The following object is masked from 'package:graphics':

    frame
```

```
The following object is masked from 'package:base':

    save.image
```

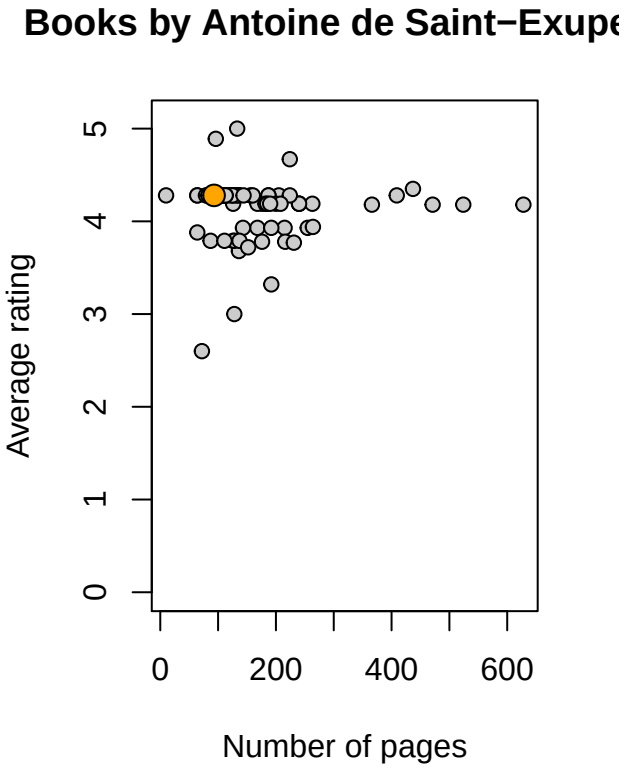
```
books <- read.csv("/class/datamine/data/goodreads/csv/goodreads_books.csv")
authors <- read.csv("/class/datamine/data/goodreads/csv/goodreads_book_authors.csv")

get_author_name <- function(my_authors_dataset, my_author_id){
  return(my_authors_dataset[my_authors_dataset$author_id==my_author_id,'name'])
}

fun_plot <- function(my_authors_dataset, my_books_dataset, my_book_id, display_cover=T) {
  book_info <- my_books_dataset[my_books_dataset$book_id==my_book_id,]
  all_books_by_author <- my_books_dataset[my_books_dataset$author_id==book_info$author_id,]
  author_name <- get_author_name(my_authors_dataset, book_info$author_id)

  img <- load.image(book_info$image_url)

  if(display_cover){
    par(mfrow=c(1,2))
    plot(img, axes=FALSE)
  }
```

```
  plot(all_books_by_author$num_pages, all_books_by_author$average_rating,
       ylim=c(0,5.1), pch=21, bg='grey80',
       xlab='Number of pages', ylab='Average rating',
       main=paste('Books by', author_name))

  points(book_info$num_pages, book_info$average_rating,pch=21, bg='orange', cex=1.5)
}
fun_plot(authors, books,17332218)
```






```
fun_plot(authors, books, 157993)
```

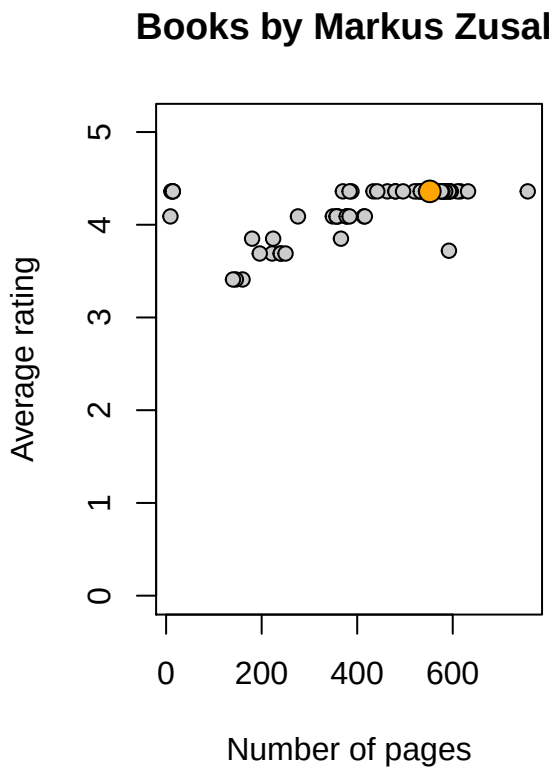


3 Arguments are my_author_dataset, my_books_dataset, book_id The function prints the title and plot of the books versus others by page number and average rating

Question 2

```
#Function where it also checks to see if my_book_id is within dataset, and prints "Book ID not found."

books <- read.csv("/class/datamine/data/goodreads/csv/goodreads_books.csv")
authors <- read.csv("/class/datamine/data/goodreads/csv/goodreads_book_authors.csv")

get_author_name <- function(my_authors_dataset, my_author_id){
  return(my_authors_dataset[my_authors_dataset$author_id==my_author_id,'name'])
}

fun_plot <- function(my_authors_dataset, my_books_dataset, my_book_id, display_cover=T) {
  if (0==sum(my_books_dataset$book_id==my_book_id))
  {
    stop("Book ID not found.")
  }
  book_info <- my_books_dataset[my_books_dataset$book_id==my_book_id,]
  all_books_by_author <- my_books_dataset[my_books_dataset$author_id==book_info$author_id,]
  author_name <- get_author_name(my_authors_dataset, book_info$author_id)

  img <- load.image(book_info$image_url)

  if(display_cover){
    par(mfrow=c(1,2))
    plot(img, axes=FALSE)
  }
```

```
  plot(all_books_by_author$num_pages, all_books_by_author$average_rating,
       ylim=c(0,5.1), pch=21, bg='grey80',
       xlab='Number of pages', ylab='Average rating',
       main=paste('Books by', author_name))

  points(book_info$num_pages, book_info$average_rating,pch=21, bg='orange', cex=1.5)
}
#fun_plot(authors, books, 123) Comments out for knitting purposes
fun_plot(authors, books, 19063)
```



Question 3

```
#Function that accepts an authors name and returns the author_id of the author
get_author_id <- function(my_authors_dataset, my_author_name)
{
  return(my_authors_dataset$author_id[my_authors_dataset$name==my_author_name])
}
authors <- read.csv("/class/datamine/data/goodreads/csv/goodreads_book_authors.csv")
get_author_id(authors, "Brandon Sanderson") # 38550
```

```
[1] 38550
```

```
get_author_id(authors, "J.K. Rowling") # 1077326
```

```
[1] 1077326
```

Question 4

```r
#Function that accepts the books dataset as an argument and utilize my_books_dataset within the functio
search_books_for_word <- function(word, my_books_dataset) {
  return(my_books_dataset[grepl(word, my_books_dataset$description, fixed=T),]$title)
}

search_books_for_word(" Fat Cat ",books)
```

```
[1] "Fat Cat Takes the Cake"
[2] "Fat Cat Finds a Home"
[3] "What Will Fat Cat Sit On?"
[4] "Fat Cat"
[5] "The Case of the Missing Bubble Gum Card (Jarvis Mann Detective #0.5)"
[6] "These Animals Are Killing Me: A Year of Ridiculous Interruptions - Courtesy of Pesky Wildlife, Qui
```

Question 5

```r
#Function that searches for title that have the specific word searched
search_title <- function(word, my_books_dataset) {
  return(my_books_dataset[grepl(word, my_books_dataset$title, fixed=T),]$title)
}

search_title(" Fat Cow ",books)
```

```
[1] "The Big Fat Cow That Goes Kapow" "The Big Fat Cow That Goes Kapow"
```

```r
search_title(" Little Dog ",books)
```

```
 [1] "The Red Grouse Tales: The Little Dog and Other Stories"
 [2] "Sirius: A Novel About the Little Dog Who Almost Changed History"
 [3] "Big Dog and Little Dog Going for a Walk (Reader): Big Dog and Little Dog Board Books"
 [4] "The Adventures of Little Dog Koko"
 [5] "Tucker: Little Dog Lost & Found"
 [6] "The Little Dog Laughed"
 [7] "Finding Gobi: A Little Dog with a Very Big Heart"
 [8] "Boo: Little Dog in the Big City"
 [9] "Big Dog and Little Dog Making a Mistake: Big Dog and Little Dog Board Books"
[10] "Big Dog and Little Dog: Big Dog and Little Dog Board Books"
[11] "The Lady with the Little Dog and Other Stories"
[12] "Pippo: A Little Dog Finds a Home"
[13] "The Little Dog Laughed"
[14] "The Little Dog Laughed"
[15] "Big Dog and Little Dog Wearing Sweaters"
[16] "The Little Dog Laughed"
```

Pledge

By submitting this work I hereby pledge that this is my own, personal work. I've acknowledged in the designated place at the top of this file all sources that I used to complete said work, including but not limited to: online resources, books, and electronic communications. I've noted all collaboration with fellow students and/or TA's. I did not copy or plagiarize another's work.

> As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - We are Purdue.