

Chapter 4

Nick Lauerman

Started 15 May 2020

Contents

1	Data Setup	1
2	Dispersion Plot	2
3	Searching with <i>grep</i>	4
3.1	Clearing the workspace	4
3.2	Identify the chapter break positions in the vector using the <i>grep</i> function	4
4	The <i>for</i> Loop and <i>if</i> Conditional	7
5	Accessing and Processing List Items	13
5.1	<i>rbind</i>	13
5.2	more recycling	13
5.3	<i>apply</i>	14
5.4	<i>do.call</i> (Do Dot Call)	24
5.5	<i>cbind</i>	30
6	Exercises	31
6.1	1	31
6.2	2	32

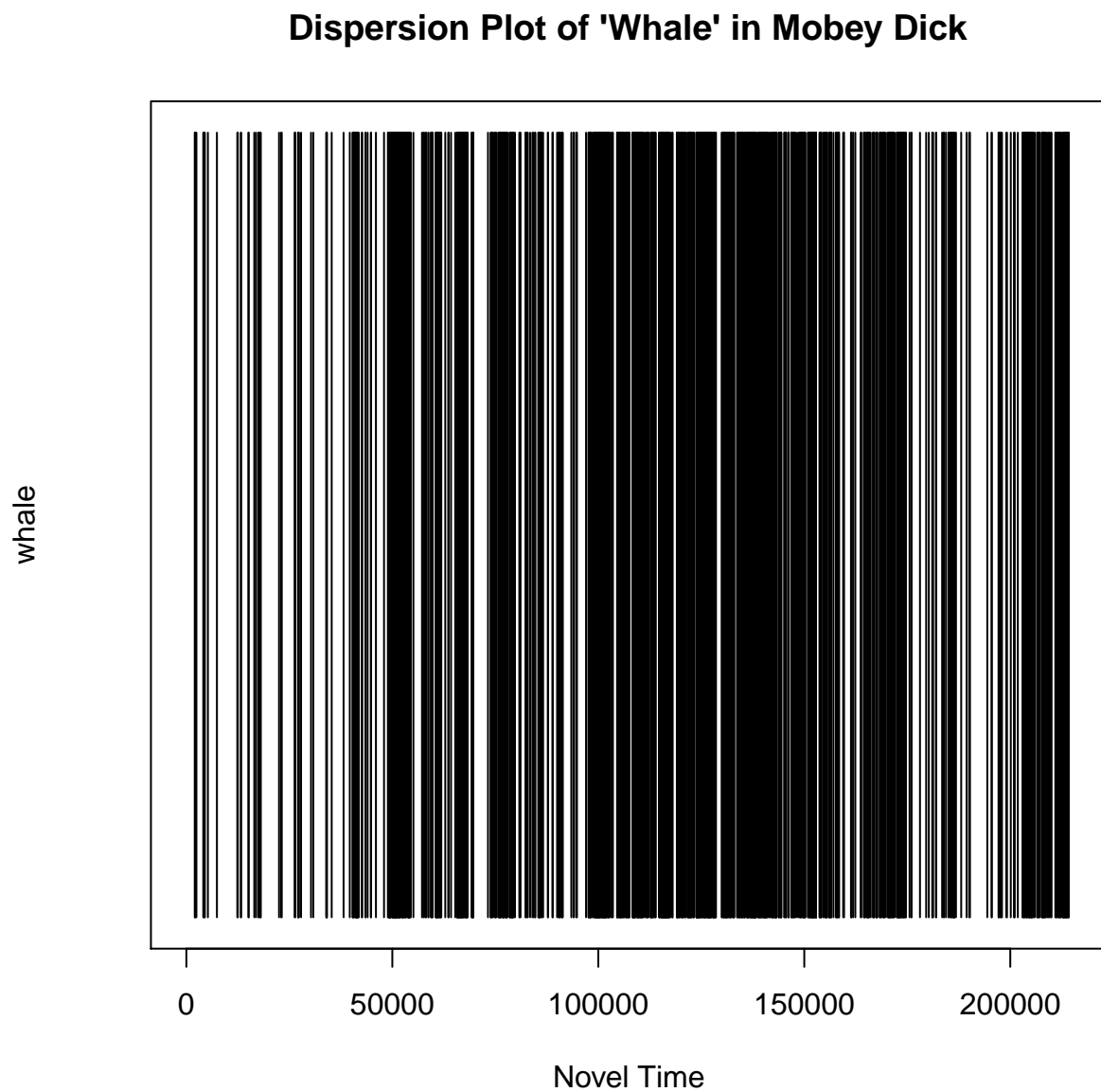
1 Data Setup

From Appendix C

```
text.v <- scan(file = "./SupportingMaterials/data/plainText/melville.txt",
               what = "character",
               sep = "\n")
start.v <- which(text.v == "CHAPTER 1. Loomings.")
end.v <- which(text.v == "orphan.")
novel.lines.v <- text.v[start.v:end.v]
novel.v <- paste(novel.lines.v,
                 collapse = " ")
novel.lower.v <- tolower(novel.v)
moby.words.l <- strsplit(novel.lower.v,
                        "\\W")
moby.word.v <- unlist(moby.words.l)
not.blanks.v <- which(moby.word.v != "")
moby.word.v <- moby.word.v[not.blanks.v]
```

2 Dispersion Plot

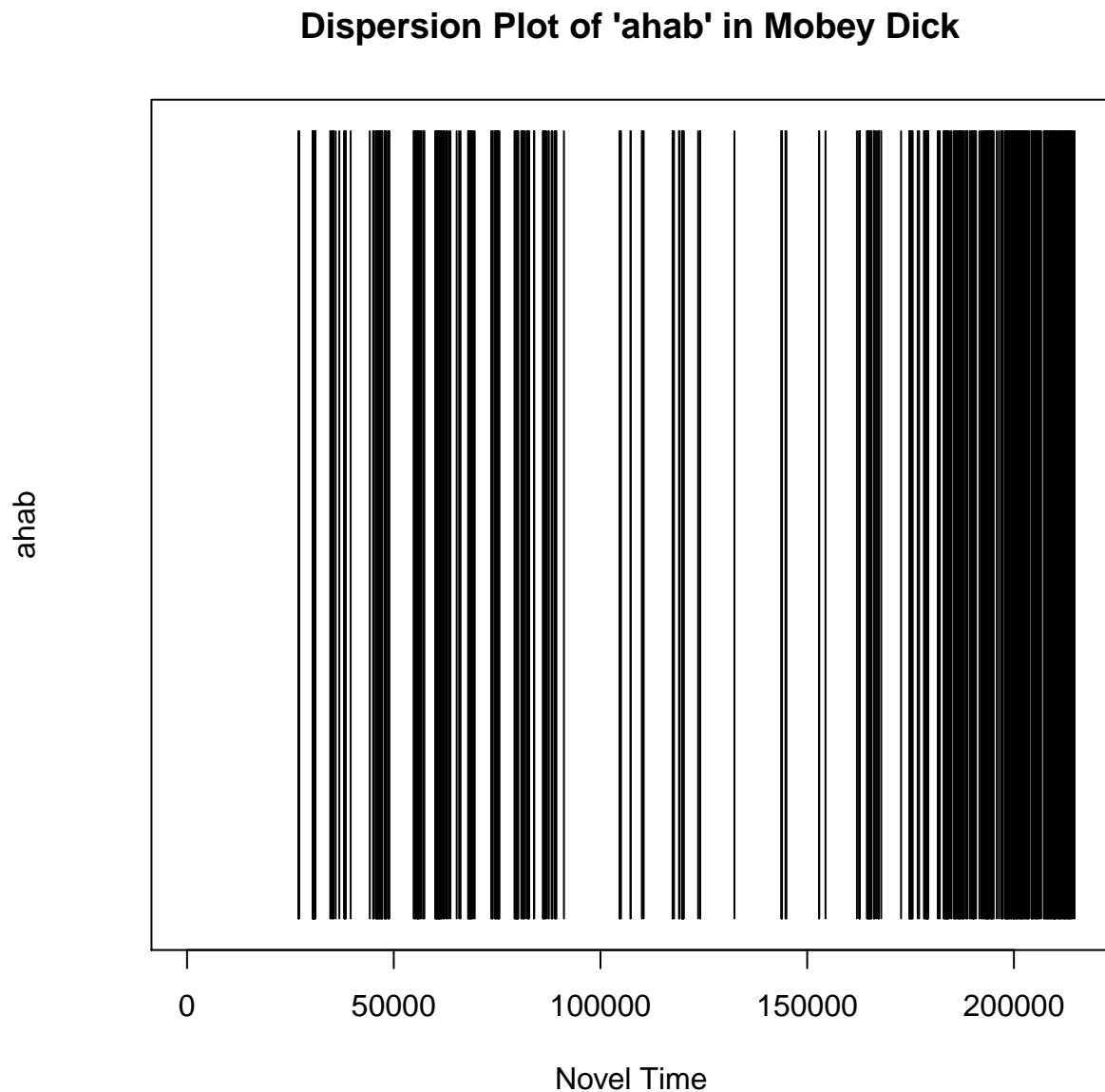
```
n.time.v <- seq(1:length(moby.word.v))
whales.v <- which(moby.word.v == "whale")
w.count.v <- rep(NA, length(n.time.v))
w.count.v[whales.v] <- 1
plot(w.count.v,
     main = "Dispersion Plot of 'Whale' in Mobey Dick",
     xlab = "Novel Time",
     ylab = "whale",
     type = "h",
     ylim = c(0,1),
     yaxt = 'n')
```



```

ahabs.v <- which(moby.word.v == "ahab")
a.count.v <- rep(NA, length(n.time.v))
a.count.v[ahabs.v] <- 1
plot(a.count.v,
     main = "Dispersion Plot of 'ahab' in Mobey Dick",
     xlab = "Novel Time",
     ylab = "ahab",
     type = "h",
     ylim = c(0,1),
     yaxt = 'n')

```



3 Searching with *grep*

3.1 Clearing the workspace

```
rm(list = ls())
ls()

## character(0)

text.v <- scan(file = "./SupportingMaterials/data/plainText/melville.txt",
               what = "character",
               sep = "\n")
start.v <- which(text.v == "CHAPTER 1. Loomings.")
end.v <- which(text.v == "orphan.")
novel.lines.v <- text.v[start.v:end.v]
```

3.2 Identify the chapter break positions in the vector using the *grep* function

```
chap.positions.v <- grep("^CHAPTER \\d", novel.lines.v)
novel.lines.v[chap.positions.v]
```

```
## [1] "CHAPTER 1. Loomings."
## [2] "CHAPTER 2. The Carpet-Bag."
## [3] "CHAPTER 3. The Spouter-Inn."
## [4] "CHAPTER 4. The Counterpane."
## [5] "CHAPTER 5. Breakfast."
## [6] "CHAPTER 6. The Street."
## [7] "CHAPTER 7. The Chapel."
## [8] "CHAPTER 8. The Pulpit."
## [9] "CHAPTER 9. The Sermon."
## [10] "CHAPTER 10. A Bosom Friend."
## [11] "CHAPTER 11. Nightgown."
## [12] "CHAPTER 12. Biographical."
## [13] "CHAPTER 13. Wheelbarrow."
## [14] "CHAPTER 14. Nantucket."
## [15] "CHAPTER 15. Chowder."
## [16] "CHAPTER 16. The Ship."
## [17] "CHAPTER 17. The Ramadan."
## [18] "CHAPTER 18. His Mark."
## [19] "CHAPTER 19. The Prophet."
## [20] "CHAPTER 20. All Astir."
## [21] "CHAPTER 21. Going Aboard."
## [22] "CHAPTER 22. Merry Christmas."
## [23] "CHAPTER 23. The Lee Shore."
## [24] "CHAPTER 24. The Advocate."
## [25] "CHAPTER 25. Postscript."
## [26] "CHAPTER 26. Knights and Squires."
## [27] "CHAPTER 27. Knights and Squires."
## [28] "CHAPTER 28. Ahab."
## [29] "CHAPTER 29. Enter Ahab; to Him, Stubb."
## [30] "CHAPTER 30. The Pipe."
## [31] "CHAPTER 31. Queen Mab."
## [32] "CHAPTER 32. Cetology."
## [33] "CHAPTER 33. The Specksnyder."
```

[34] "CHAPTER 34. The Cabin-Table."
 ## [35] "CHAPTER 35. The Mast-Head."
 ## [36] "CHAPTER 36. The Quarter-Deck."
 ## [37] "CHAPTER 37. Sunset."
 ## [38] "CHAPTER 38. Dusk."
 ## [39] "CHAPTER 39. First Night Watch."
 ## [40] "CHAPTER 40. Midnight, Forecastle."
 ## [41] "CHAPTER 41. Moby Dick."
 ## [42] "CHAPTER 42. The Whiteness of The Whale."
 ## [43] "CHAPTER 43. Hark!"
 ## [44] "CHAPTER 44. The Chart."
 ## [45] "CHAPTER 45. The Affidavit."
 ## [46] "CHAPTER 46. Surmises."
 ## [47] "CHAPTER 47. The Mat-Maker."
 ## [48] "CHAPTER 48. The First Lowering."
 ## [49] "CHAPTER 49. The Hyena."
 ## [50] "CHAPTER 50. Ahab's Boat and Crew. Fedallah."
 ## [51] "CHAPTER 51. The Spirit-Spout."
 ## [52] "CHAPTER 52. The Albatross."
 ## [53] "CHAPTER 53. The Gam."
 ## [54] "CHAPTER 54. The Town-Ho's Story."
 ## [55] "CHAPTER 55. Of the Monstrous Pictures of Whales."
 ## [56] "CHAPTER 56. Of the Less Erroneous Pictures of Whales, and the True"
 ## [57] "CHAPTER 57. Of Whales in Paint; in Teeth; in Wood; in Sheet-Iron; in"
 ## [58] "CHAPTER 58. Brit."
 ## [59] "CHAPTER 59. Squid."
 ## [60] "CHAPTER 60. The Line."
 ## [61] "CHAPTER 61. Stubb Kills a Whale."
 ## [62] "CHAPTER 62. The Dart."
 ## [63] "CHAPTER 63. The Crotch."
 ## [64] "CHAPTER 64. Stubb's Supper."
 ## [65] "CHAPTER 65. The Whale as a Dish."
 ## [66] "CHAPTER 66. The Shark Massacre."
 ## [67] "CHAPTER 67. Cutting In."
 ## [68] "CHAPTER 68. The Blanket."
 ## [69] "CHAPTER 69. The Funeral."
 ## [70] "CHAPTER 70. The Sphynx."
 ## [71] "CHAPTER 71. The Jeroboam's Story."
 ## [72] "CHAPTER 72. The Monkey-Rope."
 ## [73] "CHAPTER 73. Stubb and Flask Kill a Right Whale; and Then Have a Talk"
 ## [74] "CHAPTER 74. The Sperm Whale's Head--Contrasted View."
 ## [75] "CHAPTER 75. The Right Whale's Head--Contrasted View."
 ## [76] "CHAPTER 76. The Battering-Ram."
 ## [77] "CHAPTER 77. The Great Heidelburgh Tun."
 ## [78] "CHAPTER 78. Cistern and Buckets."
 ## [79] "CHAPTER 79. The Prairie."
 ## [80] "CHAPTER 80. The Nut."
 ## [81] "CHAPTER 81. The Pequod Meets The Virgin."
 ## [82] "CHAPTER 82. The Honour and Glory of Whaling."
 ## [83] "CHAPTER 83. Jonah Historically Regarded."
 ## [84] "CHAPTER 84. Pitchpoling."
 ## [85] "CHAPTER 85. The Fountain."
 ## [86] "CHAPTER 86. The Tail."
 ## [87] "CHAPTER 87. The Grand Armada."

```

## [88] "CHAPTER 88. Schools and Schoolmasters."
## [89] "CHAPTER 89. Fast-Fish and Loose-Fish."
## [90] "CHAPTER 90. Heads or Tails."
## [91] "CHAPTER 91. The Pequod Meets The Rose-Bud."
## [92] "CHAPTER 92. Ambergris."
## [93] "CHAPTER 93. The Castaway."
## [94] "CHAPTER 94. A Squeeze of the Hand."
## [95] "CHAPTER 95. The Cassock."
## [96] "CHAPTER 96. The Try-Works."
## [97] "CHAPTER 97. The Lamp."
## [98] "CHAPTER 98. Stowing Down and Clearing Up."
## [99] "CHAPTER 99. The Doubloon."
## [100] "CHAPTER 100. Leg and Arm."
## [101] "CHAPTER 101. The Decanter."
## [102] "CHAPTER 102. A Bower in the Arsacides."
## [103] "CHAPTER 103. Measurement of The Whale's Skeleton."
## [104] "CHAPTER 104. The Fossil Whale."
## [105] "CHAPTER 105. Does the Whale's Magnitude Diminish?--Will He Perish?"
## [106] "CHAPTER 106. Ahab's Leg."
## [107] "CHAPTER 107. The Carpenter."
## [108] "CHAPTER 108. Ahab and the Carpenter."
## [109] "CHAPTER 109. Ahab and Starbuck in the Cabin."
## [110] "CHAPTER 110. Queequeg in His Coffin."
## [111] "CHAPTER 111. The Pacific."
## [112] "CHAPTER 112. The Blacksmith."
## [113] "CHAPTER 113. The Forge."
## [114] "CHAPTER 114. The Gilder."
## [115] "CHAPTER 115. The Pequod Meets The Bachelor."
## [116] "CHAPTER 116. The Dying Whale."
## [117] "CHAPTER 117. The Whale Watch."
## [118] "CHAPTER 118. The Quadrant."
## [119] "CHAPTER 119. The Candles."
## [120] "CHAPTER 120. The Deck Towards the End of the First Night Watch."
## [121] "CHAPTER 121. Midnight.--The Forecastle Bulwarks."
## [122] "CHAPTER 122. Midnight Aloft.--Thunder and Lightning."
## [123] "CHAPTER 123. The Musket."
## [124] "CHAPTER 124. The Needle."
## [125] "CHAPTER 125. The Log and Line."
## [126] "CHAPTER 126. The Life-Buoy."
## [127] "CHAPTER 127. The Deck."
## [128] "CHAPTER 128. The Pequod Meets The Rachel."
## [129] "CHAPTER 129. The Cabin."
## [130] "CHAPTER 130. The Hat."
## [131] "CHAPTER 131. The Pequod Meets The Delight."
## [132] "CHAPTER 132. The Symphony."
## [133] "CHAPTER 133. The Chase--First Day."
## [134] "CHAPTER 134. The Chase--Second Day."
## [135] "CHAPTER 135. The Chase.--Third Day."

```

```
chap.positions.v
```

```

## [1] 1 185 301 790 925 989 1062 1141 1222 1524 1654 1712
## [13] 1785 1931 1996 2099 2572 2766 2887 2997 3075 3181 3323 3357
## [25] 3506 3532 3635 3775 3893 3993 4018 4084 4532 4619 4805 5023
## [37] 5273 5315 5347 5371 5527 5851 6170 6202 6381 6681 6771 6856

```

```
## [49] 7201 7274 7360 7490 7550 7689 8379 8543 8656 8742 8828 8911
## [61] 9032 9201 9249 9293 9555 9638 9692 9754 9854 9894 9971 10175
## [73] 10316 10502 10639 10742 10816 10876 11016 11097 11174 11541 11638 11706
## [85] 11778 11947 12103 12514 12620 12745 12843 13066 13148 13287 13398 13440
## [97] 13592 13614 13701 13900 14131 14279 14416 14495 14620 14755 14835 14928
## [109] 15066 15148 15339 15377 15462 15571 15631 15710 15756 15798 15873 16095
## [121] 16113 16164 16169 16274 16382 16484 16601 16671 16790 16839 16984 17024
## [133] 17160 17473 17761
```

```
novel.lines.v <- c(novel.lines.v,
                  "END")
last.position.v <- length(novel.lines.v)
chap.positions.v <- c(chap.positions.v,
                    last.position.v)
chap.positions.v
```

```
## [1] 1 185 301 790 925 989 1062 1141 1222 1524 1654 1712
## [13] 1785 1931 1996 2099 2572 2766 2887 2997 3075 3181 3323 3357
## [25] 3506 3532 3635 3775 3893 3993 4018 4084 4532 4619 4805 5023
## [37] 5273 5315 5347 5371 5527 5851 6170 6202 6381 6681 6771 6856
## [49] 7201 7274 7360 7490 7550 7689 8379 8543 8656 8742 8828 8911
## [61] 9032 9201 9249 9293 9555 9638 9692 9754 9854 9894 9971 10175
## [73] 10316 10502 10639 10742 10816 10876 11016 11097 11174 11541 11638 11706
## [85] 11778 11947 12103 12514 12620 12745 12843 13066 13148 13287 13398 13440
## [97] 13592 13614 13701 13900 14131 14279 14416 14495 14620 14755 14835 14928
## [109] 15066 15148 15339 15377 15462 15571 15631 15710 15756 15798 15873 16095
## [121] 16113 16164 16169 16274 16382 16484 16601 16671 16790 16839 16984 17024
## [133] 17160 17473 17761 18170
```

4 The *for* Loop and *if* Conditional

```
chap.positions.v[1]
```

```
## [1] 1
```

```
chap.positions.v[2]
```

```
## [1] 185
```

```
for (i in 1:length(chap.positions.v)) {
  print(chap.positions.v[i])
}
```

```
## [1] 1
## [1] 185
## [1] 301
## [1] 790
## [1] 925
## [1] 989
## [1] 1062
## [1] 1141
## [1] 1222
## [1] 1524
## [1] 1654
## [1] 1712
```

[1] 1785
[1] 1931
[1] 1996
[1] 2099
[1] 2572
[1] 2766
[1] 2887
[1] 2997
[1] 3075
[1] 3181
[1] 3323
[1] 3357
[1] 3506
[1] 3532
[1] 3635
[1] 3775
[1] 3893
[1] 3993
[1] 4018
[1] 4084
[1] 4532
[1] 4619
[1] 4805
[1] 5023
[1] 5273
[1] 5315
[1] 5347
[1] 5371
[1] 5527
[1] 5851
[1] 6170
[1] 6202
[1] 6381
[1] 6681
[1] 6771
[1] 6856
[1] 7201
[1] 7274
[1] 7360
[1] 7490
[1] 7550
[1] 7689
[1] 8379
[1] 8543
[1] 8656
[1] 8742
[1] 8828
[1] 8911
[1] 9032
[1] 9201
[1] 9249
[1] 9293
[1] 9555
[1] 9638

[1] 9692
[1] 9754
[1] 9854
[1] 9894
[1] 9971
[1] 10175
[1] 10316
[1] 10502
[1] 10639
[1] 10742
[1] 10816
[1] 10876
[1] 11016
[1] 11097
[1] 11174
[1] 11541
[1] 11638
[1] 11706
[1] 11778
[1] 11947
[1] 12103
[1] 12514
[1] 12620
[1] 12745
[1] 12843
[1] 13066
[1] 13148
[1] 13287
[1] 13398
[1] 13440
[1] 13592
[1] 13614
[1] 13701
[1] 13900
[1] 14131
[1] 14279
[1] 14416
[1] 14495
[1] 14620
[1] 14755
[1] 14835
[1] 14928
[1] 15066
[1] 15148
[1] 15339
[1] 15377
[1] 15462
[1] 15571
[1] 15631
[1] 15710
[1] 15756
[1] 15798
[1] 15873
[1] 16095

```
## [1] 16113
## [1] 16164
## [1] 16169
## [1] 16274
## [1] 16382
## [1] 16484
## [1] 16601
## [1] 16671
## [1] 16790
## [1] 16839
## [1] 16984
## [1] 17024
## [1] 17160
## [1] 17473
## [1] 17761
## [1] 18170
```

```
for (i in 1:length(chap.positions.v)) {
  print(paste("Chapter ",
              i,
              " begins at position ",
              chap.positions.v[i],
              sep = ""))
}
```

```
## [1] "Chapter 1 begins at position 1"
## [1] "Chapter 2 begins at position 185"
## [1] "Chapter 3 begins at position 301"
## [1] "Chapter 4 begins at position 790"
## [1] "Chapter 5 begins at position 925"
## [1] "Chapter 6 begins at position 989"
## [1] "Chapter 7 begins at position 1062"
## [1] "Chapter 8 begins at position 1141"
## [1] "Chapter 9 begins at position 1222"
## [1] "Chapter 10 begins at position 1524"
## [1] "Chapter 11 begins at position 1654"
## [1] "Chapter 12 begins at position 1712"
## [1] "Chapter 13 begins at position 1785"
## [1] "Chapter 14 begins at position 1931"
## [1] "Chapter 15 begins at position 1996"
## [1] "Chapter 16 begins at position 2099"
## [1] "Chapter 17 begins at position 2572"
## [1] "Chapter 18 begins at position 2766"
## [1] "Chapter 19 begins at position 2887"
## [1] "Chapter 20 begins at position 2997"
## [1] "Chapter 21 begins at position 3075"
## [1] "Chapter 22 begins at position 3181"
## [1] "Chapter 23 begins at position 3323"
## [1] "Chapter 24 begins at position 3357"
## [1] "Chapter 25 begins at position 3506"
## [1] "Chapter 26 begins at position 3532"
## [1] "Chapter 27 begins at position 3635"
## [1] "Chapter 28 begins at position 3775"
## [1] "Chapter 29 begins at position 3893"
## [1] "Chapter 30 begins at position 3993"
```

[1] "Chapter 31 begins at position 4018"
[1] "Chapter 32 begins at position 4084"
[1] "Chapter 33 begins at position 4532"
[1] "Chapter 34 begins at position 4619"
[1] "Chapter 35 begins at position 4805"
[1] "Chapter 36 begins at position 5023"
[1] "Chapter 37 begins at position 5273"
[1] "Chapter 38 begins at position 5315"
[1] "Chapter 39 begins at position 5347"
[1] "Chapter 40 begins at position 5371"
[1] "Chapter 41 begins at position 5527"
[1] "Chapter 42 begins at position 5851"
[1] "Chapter 43 begins at position 6170"
[1] "Chapter 44 begins at position 6202"
[1] "Chapter 45 begins at position 6381"
[1] "Chapter 46 begins at position 6681"
[1] "Chapter 47 begins at position 6771"
[1] "Chapter 48 begins at position 6856"
[1] "Chapter 49 begins at position 7201"
[1] "Chapter 50 begins at position 7274"
[1] "Chapter 51 begins at position 7360"
[1] "Chapter 52 begins at position 7490"
[1] "Chapter 53 begins at position 7550"
[1] "Chapter 54 begins at position 7689"
[1] "Chapter 55 begins at position 8379"
[1] "Chapter 56 begins at position 8543"
[1] "Chapter 57 begins at position 8656"
[1] "Chapter 58 begins at position 8742"
[1] "Chapter 59 begins at position 8828"
[1] "Chapter 60 begins at position 8911"
[1] "Chapter 61 begins at position 9032"
[1] "Chapter 62 begins at position 9201"
[1] "Chapter 63 begins at position 9249"
[1] "Chapter 64 begins at position 9293"
[1] "Chapter 65 begins at position 9555"
[1] "Chapter 66 begins at position 9638"
[1] "Chapter 67 begins at position 9692"
[1] "Chapter 68 begins at position 9754"
[1] "Chapter 69 begins at position 9854"
[1] "Chapter 70 begins at position 9894"
[1] "Chapter 71 begins at position 9971"
[1] "Chapter 72 begins at position 10175"
[1] "Chapter 73 begins at position 10316"
[1] "Chapter 74 begins at position 10502"
[1] "Chapter 75 begins at position 10639"
[1] "Chapter 76 begins at position 10742"
[1] "Chapter 77 begins at position 10816"
[1] "Chapter 78 begins at position 10876"
[1] "Chapter 79 begins at position 11016"
[1] "Chapter 80 begins at position 11097"
[1] "Chapter 81 begins at position 11174"
[1] "Chapter 82 begins at position 11541"
[1] "Chapter 83 begins at position 11638"
[1] "Chapter 84 begins at position 11706"

[1] "Chapter 85 begins at position 11778"
[1] "Chapter 86 begins at position 11947"
[1] "Chapter 87 begins at position 12103"
[1] "Chapter 88 begins at position 12514"
[1] "Chapter 89 begins at position 12620"
[1] "Chapter 90 begins at position 12745"
[1] "Chapter 91 begins at position 12843"
[1] "Chapter 92 begins at position 13066"
[1] "Chapter 93 begins at position 13148"
[1] "Chapter 94 begins at position 13287"
[1] "Chapter 95 begins at position 13398"
[1] "Chapter 96 begins at position 13440"
[1] "Chapter 97 begins at position 13592"
[1] "Chapter 98 begins at position 13614"
[1] "Chapter 99 begins at position 13701"
[1] "Chapter 100 begins at position 13900"
[1] "Chapter 101 begins at position 14131"
[1] "Chapter 102 begins at position 14279"
[1] "Chapter 103 begins at position 14416"
[1] "Chapter 104 begins at position 14495"
[1] "Chapter 105 begins at position 14620"
[1] "Chapter 106 begins at position 14755"
[1] "Chapter 107 begins at position 14835"
[1] "Chapter 108 begins at position 14928"
[1] "Chapter 109 begins at position 15066"
[1] "Chapter 110 begins at position 15148"
[1] "Chapter 111 begins at position 15339"
[1] "Chapter 112 begins at position 15377"
[1] "Chapter 113 begins at position 15462"
[1] "Chapter 114 begins at position 15571"
[1] "Chapter 115 begins at position 15631"
[1] "Chapter 116 begins at position 15710"
[1] "Chapter 117 begins at position 15756"
[1] "Chapter 118 begins at position 15798"
[1] "Chapter 119 begins at position 15873"
[1] "Chapter 120 begins at position 16095"
[1] "Chapter 121 begins at position 16113"
[1] "Chapter 122 begins at position 16164"
[1] "Chapter 123 begins at position 16169"
[1] "Chapter 124 begins at position 16274"
[1] "Chapter 125 begins at position 16382"
[1] "Chapter 126 begins at position 16484"
[1] "Chapter 127 begins at position 16601"
[1] "Chapter 128 begins at position 16671"
[1] "Chapter 129 begins at position 16790"
[1] "Chapter 130 begins at position 16839"
[1] "Chapter 131 begins at position 16984"
[1] "Chapter 132 begins at position 17024"
[1] "Chapter 133 begins at position 17160"
[1] "Chapter 134 begins at position 17473"
[1] "Chapter 135 begins at position 17761"
[1] "Chapter 136 begins at position 18170"

```

chapter.rows.l <- list()
chapter.freqs.l <- list()

for (i in 1:length(chap.positions.v)) {
  if(i != length(chap.positions.v)){
    chapter.title <- novel.lines.v[chap.positions.v[i]]
    start <- chap.positions.v[i] + 1
    end <- chap.positions.v[i + 1] - 1
    chapter.lines.v <- novel.lines.v[start:end]
    chapter.words.v <- tolower(paste(chapter.lines.v,
                                   collapse = " "))
    chapter.words.l <- strsplit(chapter.words.v, "\\W")
    chapter.words.v <- unlist(chapter.words.l)
    chapter.words.v <- chapter.words.v[which(chapter.words.v != "")]
    chapter.freq.t <- table(chapter.words.v)
    chapter.rows.l[[chapter.title]] <- chapter.freq.t
    chapter.freqs.t.rel <- 100 * (chapter.freq.t/sum(chapter.freq.t))
    chapter.freqs.l[[chapter.title]] <- chapter.freqs.t.rel
  }
}

```

5 Accessing and Processing List Items

5.1 *rbind*

```

x <- c(1,2,3,4,5)
y <- c(6,7,8,9,10)

```

```
rbind(x,y)
```

```

##    [,1] [,2] [,3] [,4] [,5]
## x     1     2     3     4     5
## y     6     7     8     9    10

```

```

y <- c(6,7,8,9,10,11)
rbind(x,y)

```

```

## Warning in rbind(x, y): number of columns of result is not a multiple of vector
## length (arg 1)

```

```

##    [,1] [,2] [,3] [,4] [,5] [,6]
## x     1     2     3     4     5     1
## y     6     7     8     9    10    11

```

5.2 more recycling

```

x <- c(1,2,3,4,5,6)
y <- 2
x*y

```

```
## [1]  2  4  6  8 10 12
```

```

y <- c(2,3)
x*y

```

```
## [1] 2 6 6 12 10 18
```

5.3 *apply*

```
#chapter.freqs.l  
#chapter.rows.l
```

```
x <- list(a = 1:10,  
          b = 2:25,  
          b = 100:1090)  
lapply(x, mean)
```

```
## $a  
## [1] 5.5  
##  
## $b  
## [1] 13.5  
##  
## $b  
## [1] 595
```

```
chapter.freqs.l[[1]]["whale"]
```

```
## whale  
## 0.1336898
```

```
lapply(chapter.freqs.l, '[', 'whale')
```

```
## $`CHAPTER 1. Loomings.`  
## whale  
## 0.1336898  
##  
## $`CHAPTER 2. The Carpet-Bag.`  
## whale  
## 0.06882312  
##  
## $`CHAPTER 3. The Spouter-Inn.`  
## whale  
## 0.1  
##  
## $`CHAPTER 4. The Counterpane.`  
## <NA>  
## NA  
##  
## $`CHAPTER 5. Breakfast.`  
## <NA>  
## NA  
##  
## $`CHAPTER 6. The Street.`  
## whale  
## 0.2406739  
##  
## $`CHAPTER 7. The Chapel.`  
## whale  
## 0.2109705
```

```

##
## $`CHAPTER 8. The Pulpit.`
## <NA>
##   NA
##
## $`CHAPTER 9. The Sermon.`
##   whale
## 0.247117
##
## $`CHAPTER 10. A Bosom Friend.`
## <NA>
##   NA
##
## $`CHAPTER 11. Nightgown.`
## <NA>
##   NA
##
## $`CHAPTER 12. Biographical.`
## <NA>
##   NA
##
## $`CHAPTER 13. Wheelbarrow.`
##   whale
## 0.1734104
##
## $`CHAPTER 14. Nantucket.`
## <NA>
##   NA
##
## $`CHAPTER 15. Chowder.`
## <NA>
##   NA
##
## $`CHAPTER 16. The Ship.`
##   whale
## 0.1603706
##
## $`CHAPTER 17. The Ramadan.`
## <NA>
##   NA
##
## $`CHAPTER 18. His Mark.`
##   whale
## 0.3597122
##
## $`CHAPTER 19. The Prophet.`
##   whale
## 0.07949126
##
## $`CHAPTER 20. All Astir.`
## <NA>
##   NA
##
## $`CHAPTER 21. Going Aboard.`

```

```

## <NA>
##   NA
##
## $`CHAPTER 22. Merry Christmas.`
##   whale
## 0.1192606
##
## $`CHAPTER 23. The Lee Shore.`
## <NA>
##   NA
##
## $`CHAPTER 24. The Advocate.`
##   whale
## 1.247772
##
## $`CHAPTER 25. Postscript.`
## <NA>
##   NA
##
## $`CHAPTER 26. Knights and Squires.`
##   whale
## 0.1626016
##
## $`CHAPTER 27. Knights and Squires.`
##   whale
## 0.2941176
##
## $`CHAPTER 28. Ahab.`
##   whale
## 0.07047216
##
## $`CHAPTER 29. Enter Ahab; to Him, Stubb.`
## <NA>
##   NA
##
## $`CHAPTER 30. The Pipe.`
##   whale
## 0.3436426
##
## $`CHAPTER 31. Queen Mab.`
##   whale
## 0.1128668
##
## $`CHAPTER 32. Cetology.`
##   whale
## 2.074529
##
## $`CHAPTER 33. The Specksnyder.`
##   whale
## 0.610998
##
## $`CHAPTER 34. The Cabin-Table.`
##   whale
## 0.04448399

```



```

##
## $`CHAPTER 35. The Mast-Head.`
##     whale
## 0.4179331
##
## $`CHAPTER 36. The Quarter-Deck.`
##     whale
## 0.6676037
##
## $`CHAPTER 37. Sunset.`
## <NA>
##     NA
##
## $`CHAPTER 38. Dusk.`
##     whale
## 0.5012531
##
## $`CHAPTER 39. First Night Watch.`
## <NA>
##     NA
##
## $`CHAPTER 40. Midnight, Forecastle.`
##     whale
## 0.2437538
##
## $`CHAPTER 41. Moby Dick.`
##     whale
## 1.155462
##
## $`CHAPTER 42. The Whiteness of The Whale.`
##     whale
## 0.08207934
##
## $`CHAPTER 43. Hark!`
## <NA>
##     NA
##
## $`CHAPTER 44. The Chart.`
##     whale
## 0.5816772
##
## $`CHAPTER 45. The Affidavit.`
##     whale
## 1.09152
##
## $`CHAPTER 46. Surmises.`
##     whale
## 0.3976143
##
## $`CHAPTER 47. The Mat-Maker.`
##     whale
## 0.3201708
##
## $`CHAPTER 48. The First Lowering.`

```

```

##      whale
## 0.2227171
##
## $`CHAPTER 49. The Hyena.`
##      whale
## 0.8284024
##
## $`CHAPTER 50. Ahab's Boat and Crew. Fedallah.`
##      whale
## 0.2929688
##
## $`CHAPTER 51. The Spirit-Spout.`
##      whale
## 0.1311475
##
## $`CHAPTER 52. The Albatross.`
##      whale
## 0.2754821
##
## $`CHAPTER 53. The Gam.`
##      whale
## 0.3019324
##
## $`CHAPTER 54. The Town-Ho's Story.`
##      whale
## 0.2839156
##
## $`CHAPTER 55. Of the Monstrous Pictures of Whales.`
##      whale
## 1.824818
##
## $`CHAPTER 56. Of the Less Erroneous Pictures of Whales, and the True`
##      whale
## 1.515152
##
## $`CHAPTER 57. Of Whales in Paint; in Teeth; in Wood; in Sheet-Iron; in`
##      whale
## 0.6217617
##
## $`CHAPTER 58. Brit.`
##      whale
## 0.1976285
##
## $`CHAPTER 59. Squid.`
##      whale
## 0.856531
##
## $`CHAPTER 60. The Line.`
##      whale
## 0.8713137
##
## $`CHAPTER 61. Stubb Kills a Whale.`
##      whale
## 0.802005

```

```

##
## $`CHAPTER 62. The Dart.`
##     whale
## 1.048951
##
## $`CHAPTER 63. The Crotch.`
##     whale
## 1.054852
##
## $`CHAPTER 64. Stubb's Supper.`
##     whale
## 0.8116883
##
## $`CHAPTER 65. The Whale as a Dish.`
##     whale
## 0.6993007
##
## $`CHAPTER 66. The Shark Massacre.`
##     whale
## 0.1572327
##
## $`CHAPTER 67. Cutting In.`
##     whale
## 0.9433962
##
## $`CHAPTER 68. The Blanket.`
##     whale
## 2.067825
##
## $`CHAPTER 69. The Funeral.`
##     whale
## 1.354402
##
## $`CHAPTER 70. The Sphinx.`
##     whale
## 0.8948546
##
## $`CHAPTER 71. The Jeroboam's Story.`
##     whale
## 0.6487889
##
## $`CHAPTER 72. The Monkey-Rope.`
##     whale
## 0.7756563
##
## $`CHAPTER 73. Stubb and Flask Kill a Right Whale; and Then Have a Talk`
##     whale
## 0.8972633
##
## $`CHAPTER 74. The Sperm Whale's Head--Contrasted View.`
##     whale
## 1.26506
##
## $`CHAPTER 75. The Right Whale's Head--Contrasted View.`

```

```

## whale
## 1.76565
##
## $`CHAPTER 76. The Battering-Ram.`
## whale
## 1.027397
##
## $`CHAPTER 77. The Great Heidelburgh Tun.`
## whale
## 1.708075
##
## $`CHAPTER 78. Cistern and Buckets.`
## whale
## 0.1794258
##
## $`CHAPTER 79. The Prairie.`
## whale
## 1.265823
##
## $`CHAPTER 80. The Nut.`
## whale
## 0.8762322
##
## $`CHAPTER 81. The Pequod Meets The Virgin.`
## whale
## 0.7861635
##
## $`CHAPTER 82. The Honour and Glory of Whaling.`
## whale
## 1.29199
##
## $`CHAPTER 83. Jonah Historically Regarded.`
## whale
## 2.027883
##
## $`CHAPTER 84. Pitchpoling.`
## whale
## 0.9815951
##
## $`CHAPTER 85. The Fountain.`
## whale
## 1.007678
##
## $`CHAPTER 86. The Tail.`
## whale
## 1.074691
##
## $`CHAPTER 87. The Grand Armada.`
## whale
## 0.5619147
##
## $`CHAPTER 88. Schools and Schoolmasters.`
## whale
## 0.41841

```

```

##
## $`CHAPTER 89. Fast-Fish and Loose-Fish.`
##     whale
## 0.8298755
##
## $`CHAPTER 90. Heads or Tails.`
##     whale
## 1.035782
##
## $`CHAPTER 91. The Pequod Meets The Rose-Bud.`
##     whale
## 0.9656238
##
## $`CHAPTER 92. Ambergris.`
##     whale
## 0.712831
##
## $`CHAPTER 93. The Castaway.`
##     whale
## 0.6071645
##
## $`CHAPTER 94. A Squeeze of the Hand.`
##     whale
## 0.5430566
##
## $`CHAPTER 95. The Cassock.`
##     whale
## 0.3992016
##
## $`CHAPTER 96. The Try-Works.`
##     whale
## 0.1085776
##
## $`CHAPTER 97. The Lamp.`
## <NA>
##     NA
##
## $`CHAPTER 98. Stowing Down and Clearing Up.`
##     whale
## 0.3872217
##
## $`CHAPTER 99. The Doubloon.`
##     whale
## 0.1582905
##
## $`CHAPTER 100. Leg and Arm.`
##     whale
## 0.6440072
##
## $`CHAPTER 101. The Decanter.`
##     whale
## 0.5586592
##
## $`CHAPTER 102. A Bower in the Arsacides.`

```

```

##      whale
## 0.6962025
##
## $`CHAPTER 103. Measurement of The Whale's Skeleton.`
##      whale
## 0.9656652
##
## $`CHAPTER 104. The Fossil Whale.`
##      whale
## 0.832755
##
## $`CHAPTER 105. Does the Whale's Magnitude Diminish?--Will He Perish?`
##      whale
## 0.8883249
##
## $`CHAPTER 106. Ahab's Leg.`
##      whale
## 0.106383
##
## $`CHAPTER 107. The Carpenter.`
##      whale
## 0.1876173
##
## $`CHAPTER 108. Ahab and the Carpenter.`
##      whale
## 0.06079027
##
## $`CHAPTER 109. Ahab and Starbuck in the Cabin.`
## <NA>
##      NA
##
## $`CHAPTER 110. Queequeg in His Coffin.`
##      whale
## 0.2190101
##
## $`CHAPTER 111. The Pacific.`
##      whale
## 0.4683841
##
## $`CHAPTER 112. The Blacksmith.`
## <NA>
##      NA
##
## $`CHAPTER 113. The Forge.`
##      whale
## 0.2379064
##
## $`CHAPTER 114. The Gilder.`
##      whale
## 0.1531394
##
## $`CHAPTER 115. The Pequod Meets The Bachelor.`
##      whale
## 0.4424779

```

```

##
## $`CHAPTER 116. The Dying Whale.`
##     whale
## 0.7662835
##
## $`CHAPTER 117. The Whale Watch.`
##     whale
## 0.8368201
##
## $`CHAPTER 118. The Quadrant.`
## <NA>
##     NA
##
## $`CHAPTER 119. The Candles.`
##     whale
## 0.1548587
##
## $`CHAPTER 120. The Deck Towards the End of the First Night Watch.`
## <NA>
##     NA
##
## $`CHAPTER 121. Midnight.--The Forecastle Bulwarks.`
## <NA>
##     NA
##
## $`CHAPTER 122. Midnight Aloft.--Thunder and Lightning.`
## <NA>
##     NA
##
## $`CHAPTER 123. The Musket.`
## <NA>
##     NA
##
## $`CHAPTER 124. The Needle.`
## <NA>
##     NA
##
## $`CHAPTER 125. The Log and Line.`
##     whale
## 0.08748906
##
## $`CHAPTER 126. The Life-Buoy.`
##     whale
## 0.1403509
##
## $`CHAPTER 127. The Deck.`
## <NA>
##     NA
##
## $`CHAPTER 128. The Pequod Meets The Rachel.`
##     whale
## 0.41841
##
## $`CHAPTER 129. The Cabin.`

```

```
##      whale
## 0.1672241
##
## $`CHAPTER 130. The Hat.`
##      whale
## 0.1158078
##
## $`CHAPTER 131. The Pequod Meets The Delight.`
##      whale
## 0.6912442
##
## $`CHAPTER 132. The Symphony.`
##      whale
## 0.06079027
##
## $`CHAPTER 133. The Chase--First Day.`
##      whale
## 0.7696537
##
## $`CHAPTER 134. The Chase--Second Day.`
##      whale
## 0.6189213
##
## $`CHAPTER 135. The Chase.--Third Day.`
##      whale
## 0.6711409
```

```
whale.l <- lapply(chapter.freqs.l, '[', 'whale')
rbind(whale.l[[1]],
      whale.l[[2]],
      whale.l[[3]])
```

```
##      whale
## [1,] 0.13368984
## [2,] 0.06882312
## [3,] 0.10000000
```

5.4 *do.call* (Do Dot Call)

```
x <- list(1:3,4:6,7:9)
x
```

```
## [[1]]
## [1] 1 2 3
##
## [[2]]
## [1] 4 5 6
##
## [[3]]
## [1] 7 8 9
```

```
do.call(rbind,x)
```

```
##      [,1] [,2] [,3]
## [1,]    1    2    3
## [2,]    4    5    6
```



```
## [3,] 7 8 9
```

```
whales.m <- do.call(rbind, whale.l)
whales.m
```

##	whale
## CHAPTER 1. Loomings.	0.13368984
## CHAPTER 2. The Carpet-Bag.	0.06882312
## CHAPTER 3. The Spouter-Inn.	0.10000000
## CHAPTER 4. The Counterpane.	NA
## CHAPTER 5. Breakfast.	NA
## CHAPTER 6. The Street.	0.24067389
## CHAPTER 7. The Chapel.	0.21097046
## CHAPTER 8. The Pulpit.	NA
## CHAPTER 9. The Sermon.	0.24711697
## CHAPTER 10. A Bosom Friend.	NA
## CHAPTER 11. Nightgown.	NA
## CHAPTER 12. Biographical.	NA
## CHAPTER 13. Wheelbarrow.	0.17341040
## CHAPTER 14. Nantucket.	NA
## CHAPTER 15. Chowder.	NA
## CHAPTER 16. The Ship.	0.16037063
## CHAPTER 17. The Ramadan.	NA
## CHAPTER 18. His Mark.	0.35971223
## CHAPTER 19. The Prophet.	0.07949126
## CHAPTER 20. All Astir.	NA
## CHAPTER 21. Going Aboard.	NA
## CHAPTER 22. Merry Christmas.	0.11926058
## CHAPTER 23. The Lee Shore.	NA
## CHAPTER 24. The Advocate.	1.24777184
## CHAPTER 25. Postscript.	NA
## CHAPTER 26. Knights and Squires.	0.16260163
## CHAPTER 27. Knights and Squires.	0.29411765
## CHAPTER 28. Ahab.	0.07047216
## CHAPTER 29. Enter Ahab; to Him, Stubb.	NA
## CHAPTER 30. The Pipe.	0.34364261
## CHAPTER 31. Queen Mab.	0.11286682
## CHAPTER 32. Cetology.	2.07452939
## CHAPTER 33. The Specksnyder.	0.61099796
## CHAPTER 34. The Cabin-Table.	0.04448399
## CHAPTER 35. The Mast-Head.	0.41793313
## CHAPTER 36. The Quarter-Deck.	0.66760365
## CHAPTER 37. Sunset.	NA
## CHAPTER 38. Dusk.	0.50125313
## CHAPTER 39. First Night Watch.	NA
## CHAPTER 40. Midnight, Forecastle.	0.24375381
## CHAPTER 41. Moby Dick.	1.15546218
## CHAPTER 42. The Whiteness of The Whale.	0.08207934
## CHAPTER 43. Hark!	NA
## CHAPTER 44. The Chart.	0.58167717
## CHAPTER 45. The Affidavit.	1.09151973
## CHAPTER 46. Surmises.	0.39761431
## CHAPTER 47. The Mat-Maker.	0.32017076
## CHAPTER 48. The First Lowering.	0.22271715
## CHAPTER 49. The Hyena.	0.82840237

## CHAPTER 50. Ahab's Boat and Crew. Fedallah.	0.29296875
## CHAPTER 51. The Spirit-Spout.	0.13114754
## CHAPTER 52. The Albatross.	0.27548209
## CHAPTER 53. The Gam.	0.30193237
## CHAPTER 54. The Town-Ho's Story.	0.28391557
## CHAPTER 55. Of the Monstrous Pictures of Whales.	1.82481752
## CHAPTER 56. Of the Less Erroneous Pictures of Whales, and the True	1.51515152
## CHAPTER 57. Of Whales in Paint; in Teeth; in Wood; in Sheet-Iron; in	0.62176166
## CHAPTER 58. Brit.	0.19762846
## CHAPTER 59. Squid.	0.85653105
## CHAPTER 60. The Line.	0.87131367
## CHAPTER 61. Stubb Kills a Whale.	0.80200501
## CHAPTER 62. The Dart.	1.04895105
## CHAPTER 63. The Crotch.	1.05485232
## CHAPTER 64. Stubb's Supper.	0.81168831
## CHAPTER 65. The Whale as a Dish.	0.69930070
## CHAPTER 66. The Shark Massacre.	0.15723270
## CHAPTER 67. Cutting In.	0.94339623
## CHAPTER 68. The Blanket.	2.06782465
## CHAPTER 69. The Funeral.	1.35440181
## CHAPTER 70. The Sphynx.	0.89485459
## CHAPTER 71. The Jeroboam's Story.	0.64878893
## CHAPTER 72. The Monkey-Rope.	0.77565632
## CHAPTER 73. Stubb and Flask Kill a Right Whale; and Then Have a Talk	0.89726335
## CHAPTER 74. The Sperm Whale's Head--Contrasted View.	1.26506024
## CHAPTER 75. The Right Whale's Head--Contrasted View.	1.76565008
## CHAPTER 76. The Battering-Ram.	1.02739726
## CHAPTER 77. The Great Heidelburgh Tun.	1.70807453
## CHAPTER 78. Cistern and Buckets.	0.17942584
## CHAPTER 79. The Prairie.	1.26582278
## CHAPTER 80. The Nut.	0.87623220
## CHAPTER 81. The Pequod Meets The Virgin.	0.78616352
## CHAPTER 82. The Honour and Glory of Whaling.	1.29198966
## CHAPTER 83. Jonah Historically Regarded.	2.02788340
## CHAPTER 84. Pitchpoling.	0.98159509
## CHAPTER 85. The Fountain.	1.00767754
## CHAPTER 86. The Tail.	1.07469103
## CHAPTER 87. The Grand Armada.	0.56191467
## CHAPTER 88. Schools and Schoolmasters.	0.41841004
## CHAPTER 89. Fast-Fish and Loose-Fish.	0.82987552
## CHAPTER 90. Heads or Tails.	1.03578154
## CHAPTER 91. The Pequod Meets The Rose-Bud.	0.96562379
## CHAPTER 92. Ambergris.	0.71283096
## CHAPTER 93. The Castaway.	0.60716454
## CHAPTER 94. A Squeeze of the Hand.	0.54305663
## CHAPTER 95. The Cassock.	0.39920160
## CHAPTER 96. The Try-Works.	0.10857763
## CHAPTER 97. The Lamp.	NA
## CHAPTER 98. Stowing Down and Clearing Up.	0.38722168
## CHAPTER 99. The Doubloon.	0.15829046
## CHAPTER 100. Leg and Arm.	0.64400716
## CHAPTER 101. The Decanter.	0.55865922
## CHAPTER 102. A Bower in the Arsacides.	0.69620253
## CHAPTER 103. Measurement of The Whale's Skeleton.	0.96566524

## CHAPTER 104. The Fossil Whale.	0.83275503
## CHAPTER 105. Does the Whale's Magnitude Diminish?--Will He Perish?	0.88832487
## CHAPTER 106. Ahab's Leg.	0.10638298
## CHAPTER 107. The Carpenter.	0.18761726
## CHAPTER 108. Ahab and the Carpenter.	0.06079027
## CHAPTER 109. Ahab and Starbuck in the Cabin.	NA
## CHAPTER 110. Queequeg in His Coffin.	0.21901007
## CHAPTER 111. The Pacific.	0.46838407
## CHAPTER 112. The Blacksmith.	NA
## CHAPTER 113. The Forge.	0.23790642
## CHAPTER 114. The Gilder.	0.15313936
## CHAPTER 115. The Pequod Meets The Bachelor.	0.44247788
## CHAPTER 116. The Dying Whale.	0.76628352
## CHAPTER 117. The Whale Watch.	0.83682008
## CHAPTER 118. The Quadrant.	NA
## CHAPTER 119. The Candles.	0.15485869
## CHAPTER 120. The Deck Towards the End of the First Night Watch.	NA
## CHAPTER 121. Midnight.--The Forecastle Bulwarks.	NA
## CHAPTER 122. Midnight Aloft.--Thunder and Lightning.	NA
## CHAPTER 123. The Musket.	NA
## CHAPTER 124. The Needle.	NA
## CHAPTER 125. The Log and Line.	0.08748906
## CHAPTER 126. The Life-Buoy.	0.14035088
## CHAPTER 127. The Deck.	NA
## CHAPTER 128. The Pequod Meets The Rachel.	0.41841004
## CHAPTER 129. The Cabin.	0.16722408
## CHAPTER 130. The Hat.	0.11580776
## CHAPTER 131. The Pequod Meets The Delight.	0.69124424
## CHAPTER 132. The Symphony.	0.06079027
## CHAPTER 133. The Chase--First Day.	0.76965366
## CHAPTER 134. The Chase--Second Day.	0.61892131
## CHAPTER 135. The Chase.--Third Day.	0.67114094

```

ahab.l <- lapply(chapter.freqs.l, '[', 'ahab')
ahabs.m <- do.call(rbind, ahab.l)
ahabs.m

```

##	<NA>
## CHAPTER 1. Loomings.	NA
## CHAPTER 2. The Carpet-Bag.	NA
## CHAPTER 3. The Spouter-Inn.	NA
## CHAPTER 4. The Counterpane.	NA
## CHAPTER 5. Breakfast.	NA
## CHAPTER 6. The Street.	NA
## CHAPTER 7. The Chapel.	NA
## CHAPTER 8. The Pulpit.	NA
## CHAPTER 9. The Sermon.	NA
## CHAPTER 10. A Bosom Friend.	NA
## CHAPTER 11. Nightgown.	NA
## CHAPTER 12. Biographical.	NA
## CHAPTER 13. Wheelbarrow.	NA
## CHAPTER 14. Nantucket.	NA
## CHAPTER 15. Chowder.	NA
## CHAPTER 16. The Ship.	0.33856023
## CHAPTER 17. The Ramadan.	NA

## CHAPTER 18. His Mark.	0.14388489
## CHAPTER 19. The Prophet.	0.39745628
## CHAPTER 20. All Astir.	0.10706638
## CHAPTER 21. Going Aboard.	0.27247956
## CHAPTER 22. Merry Christmas.	0.23852117
## CHAPTER 23. The Lee Shore.	NA
## CHAPTER 24. The Advocate.	NA
## CHAPTER 25. Postscript.	NA
## CHAPTER 26. Knights and Squires.	NA
## CHAPTER 27. Knights and Squires.	0.11764706
## CHAPTER 28. Ahab.	0.70472163
## CHAPTER 29. Enter Ahab; to Him, Stubb.	0.56360709
## CHAPTER 30. The Pipe.	1.37457045
## CHAPTER 31. Queen Mab.	0.67720090
## CHAPTER 32. Cetology.	NA
## CHAPTER 33. The Specksnyder.	0.30549898
## CHAPTER 34. The Cabin-Table.	0.66725979
## CHAPTER 35. The Mast-Head.	NA
## CHAPTER 36. The Quarter-Deck.	0.91356290
## CHAPTER 37. Sunset.	0.38022814
## CHAPTER 38. Dusk.	0.25062657
## CHAPTER 39. First Night Watch.	NA
## CHAPTER 40. Midnight, Forecastle.	0.06093845
## CHAPTER 41. Moby Dick.	0.39390756
## CHAPTER 42. The Whiteness of The Whale.	0.02735978
## CHAPTER 43. Hark!	NA
## CHAPTER 44. The Chart.	0.72709646
## CHAPTER 45. The Affidavit.	NA
## CHAPTER 46. Surmises.	1.29224652
## CHAPTER 47. The Mat-Maker.	0.32017076
## CHAPTER 48. The First Lowering.	0.29695620
## CHAPTER 49. The Hyena.	NA
## CHAPTER 50. Ahab's Boat and Crew. Fedallah.	0.68359375
## CHAPTER 51. The Spirit-Spout.	0.32786885
## CHAPTER 52. The Albatross.	0.41322314
## CHAPTER 53. The Gam.	0.06038647
## CHAPTER 54. The Town-Ho's Story.	0.01234416
## CHAPTER 55. Of the Monstrous Pictures of Whales.	NA
## CHAPTER 56. Of the Less Erroneous Pictures of Whales, and the True	NA
## CHAPTER 57. Of Whales in Paint; in Teeth; in Wood; in Sheet-Iron; in	NA
## CHAPTER 58. Brit.	NA
## CHAPTER 59. Squid.	0.42826552
## CHAPTER 60. The Line.	NA
## CHAPTER 61. Stubb Kills a Whale.	0.10025063
## CHAPTER 62. The Dart.	NA
## CHAPTER 63. The Crotch.	NA
## CHAPTER 64. Stubb's Supper.	0.09740260
## CHAPTER 65. The Whale as a Dish.	NA
## CHAPTER 66. The Shark Massacre.	NA
## CHAPTER 67. Cutting In.	NA
## CHAPTER 68. The Blanket.	NA
## CHAPTER 69. The Funeral.	NA
## CHAPTER 70. The Sphynx.	0.33557047
## CHAPTER 71. The Jeroboam's Story.	0.43252595

## CHAPTER 72. The Monkey-Rope.	NA
## CHAPTER 73. Stubb and Flask Kill a Right Whale; and Then Have a Talk	0.13458950
## CHAPTER 74. The Sperm Whale's Head--Contrasted View.	NA
## CHAPTER 75. The Right Whale's Head--Contrasted View.	NA
## CHAPTER 76. The Battering-Ram.	NA
## CHAPTER 77. The Great Heidelburgh Tun.	NA
## CHAPTER 78. Cistern and Buckets.	NA
## CHAPTER 79. The Prairie.	NA
## CHAPTER 80. The Nut.	NA
## CHAPTER 81. The Pequod Meets The Virgin.	0.02246181
## CHAPTER 82. The Honour and Glory of Whaling.	NA
## CHAPTER 83. Jonah Historically Regarded.	NA
## CHAPTER 84. Pitchpoling.	NA
## CHAPTER 85. The Fountain.	NA
## CHAPTER 86. The Tail.	NA
## CHAPTER 87. The Grand Armada.	0.14568158
## CHAPTER 88. Schools and Schoolmasters.	NA
## CHAPTER 89. Fast-Fish and Loose-Fish.	NA
## CHAPTER 90. Heads or Tails.	NA
## CHAPTER 91. The Pequod Meets The Rose-Bud.	0.11587486
## CHAPTER 92. Ambergris.	NA
## CHAPTER 93. The Castaway.	NA
## CHAPTER 94. A Squeeze of the Hand.	NA
## CHAPTER 95. The Cassock.	NA
## CHAPTER 96. The Try-Works.	NA
## CHAPTER 97. The Lamp.	NA
## CHAPTER 98. Stowing Down and Clearing Up.	NA
## CHAPTER 99. The Doubloon.	0.27700831
## CHAPTER 100. Leg and Arm.	0.71556351
## CHAPTER 101. The Decanter.	0.05586592
## CHAPTER 102. A Bower in the Arsacides.	NA
## CHAPTER 103. Measurement of The Whale's Skeleton.	NA
## CHAPTER 104. The Fossil Whale.	0.06939625
## CHAPTER 105. Does the Whale's Magnitude Diminish?--Will He Perish?	NA
## CHAPTER 106. Ahab's Leg.	0.95744681
## CHAPTER 107. The Carpenter.	NA
## CHAPTER 108. Ahab and the Carpenter.	0.12158055
## CHAPTER 109. Ahab and Starbuck in the Cabin.	1.39784946
## CHAPTER 110. Queequeg in His Coffin.	0.04380201
## CHAPTER 111. The Pacific.	0.23419204
## CHAPTER 112. The Blacksmith.	0.10526316
## CHAPTER 113. The Forge.	1.26883426
## CHAPTER 114. The Gilder.	0.15313936
## CHAPTER 115. The Pequod Meets The Bachelor.	0.55309735
## CHAPTER 116. The Dying Whale.	0.57471264
## CHAPTER 117. The Whale Watch.	0.83682008
## CHAPTER 118. The Quadrant.	1.09769484
## CHAPTER 119. The Candles.	0.54200542
## CHAPTER 120. The Deck Towards the End of the First Night Watch.	0.54347826
## CHAPTER 121. Midnight.--The Forecastle Bulwarks.	0.30816641
## CHAPTER 122. Midnight Aloft.--Thunder and Lightning.	NA
## CHAPTER 123. The Musket.	0.23603462
## CHAPTER 124. The Needle.	0.98119379
## CHAPTER 125. The Log and Line.	0.78740157

```
## CHAPTER 126. The Life-Buoy. 0.28070175
## CHAPTER 127. The Deck. 0.26954178
## CHAPTER 128. The Pequod Meets The Rachel. 0.76708508
## CHAPTER 129. The Cabin. 1.00334448
## CHAPTER 130. The Hat. 1.04226983
## CHAPTER 131. The Pequod Meets The Delight. 0.69124424
## CHAPTER 132. The Symphony. 0.85106383
## CHAPTER 133. The Chase--First Day. 0.65970313
## CHAPTER 134. The Chase--Second Day. 0.79575597
## CHAPTER 135. The Chase.--Third Day. 0.75249136
```

5.5 *cbind*

```
class(whales.m)

## [1] "matrix"
class(whales.m[,1])

## [1] "numeric"

x <- c(1,2,3,4,5,6)
y <- c(2,4,5,6,7,8)
z <- c(24,23,34,32,12,10)
test.m <- cbind(x,y,z)
test.m

##      x y z
## [1,] 1 2 24
## [2,] 2 4 23
## [3,] 3 5 34
## [4,] 4 6 32
## [5,] 5 7 12
## [6,] 6 8 10

test.m[2,3]

## z
## 23

test.m[2,]

## x y z
## 2 4 23

test.m[,1]

## [1] 1 2 3 4 5 6

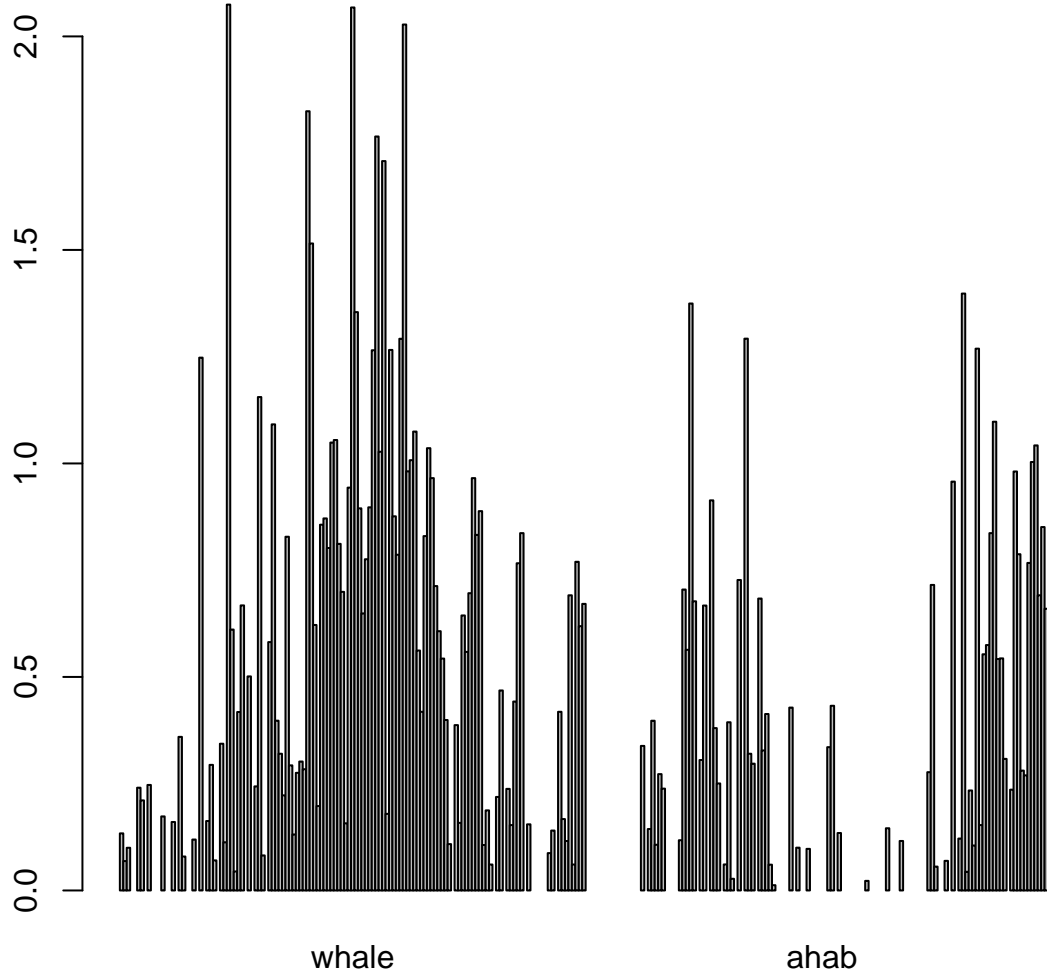
test.m[, "y"]

## [1] 2 4 5 6 7 8

whales.v <- whales.m[,1]
ahabs.v <- ahabs.m[,1]
whales.ahabs.m <- cbind(whales.v, ahabs.v)
dim(whales.ahabs.m)

## [1] 135 2
```

```
colnames(whales.ahabs.m) <- c("whale", "ahab")
barplot(whales.ahabs.m,
        beside = TRUE,
        col = "gray")
```



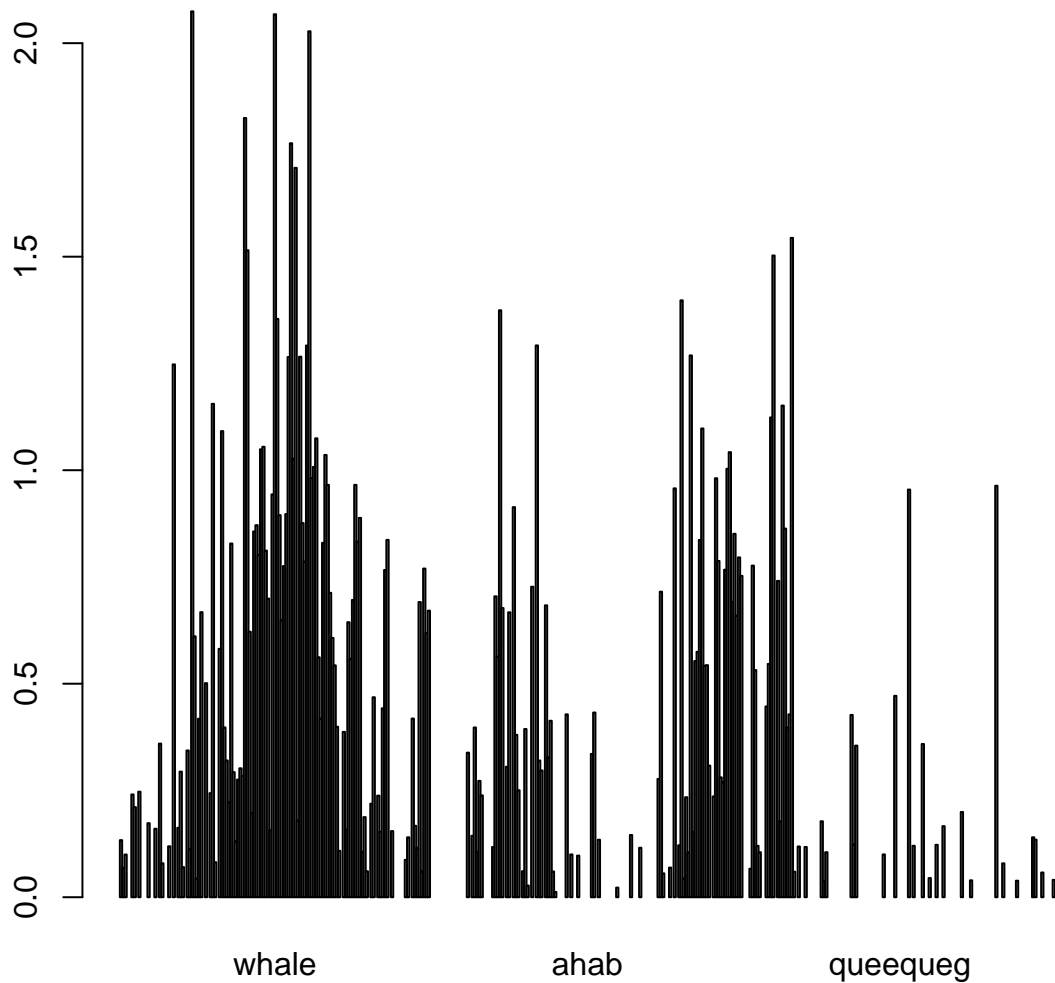
6 Exercises

6.1 1

```
queeeqeg.l <- lapply(chapter.freqs.l, '[' , 'queeeqeg')
queeeqeg.m <- do.call(rbind, queeeqeg.l)
queeeqeg.v <- queeeqeg.m[,1]
whales.ahab.queeeqeg.m <- cbind(whales.v, ahabs.v, queeeqeg.v)
```

```
colnames(whales.ahab.queequeg.m) <- c("whale",
                                       "ahab",
                                       "queequeg")

barplot(whales.ahab.queequeg.m,
        beside = TRUE,
        col = "gray")
```



6.2 2

```
whale.raw.l <- lapply(chapter.rows.l, '[' , 'whale')
whale.raw.m <- do.call(rbind, whale.raw.l)
whale.raw.v <- as.vector(whale.raw.m[,1])
```



```

ahab.raw.l <- lapply(chapter.rows.l, '[' , 'ahab')
ahab.raw.m <- do.call(rbind, ahab.raw.l)
ahab.raw.v <- as.vector(ahab.raw.m[,1])

whale.ahab.raw.m <- cbind(whale.raw.v, ahab.raw.v)
colnames(whale.ahab.raw.m) <- c("whale",
                                "ahab")

barplot(whale.ahab.raw.m,
        beside = TRUE,
        col = "blue")

```

