Simple Corpus Stats

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Load libraries

If the libraries are not installed yet, you need to install them using, for example, the command: install.packages("ggplot2").

```
library(stringr)
library(ggplot2)
library(plyr)
```

List files

List all the files in the directory "corpus".

```
file.list <- list.files(path = "~/Github/NaLaFi/data/",
                        recursive = T, full.names = T)
#print(file.list)
length(file.list)
```

```
## [1] 239
```

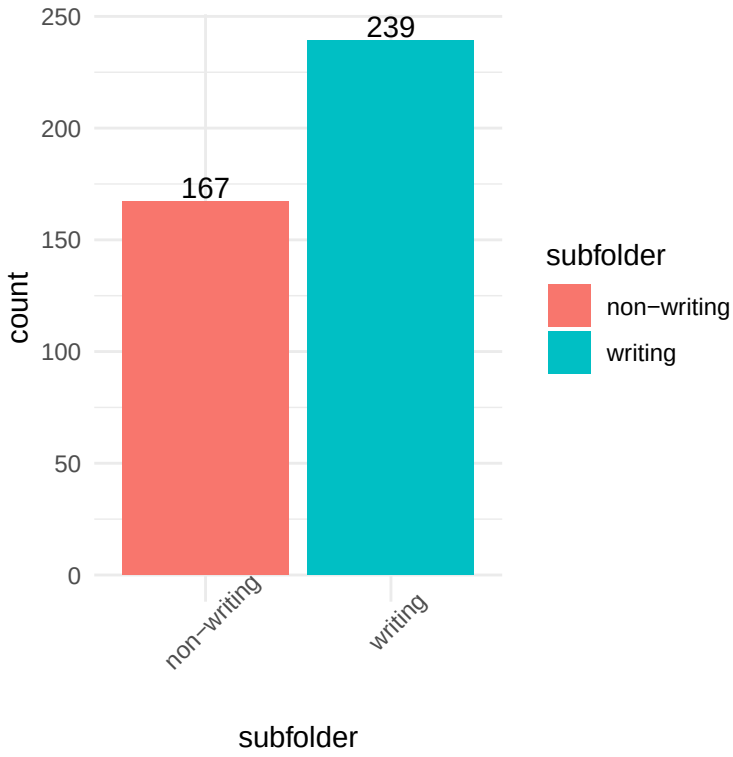
Count number of files in writing and non-writing subfolders

Count how many files are in each of the highest level subfolders of "data", and create a dataframe with counts.

```
#number of "animal" files
writing.count <- length(file.list[grepl("writing", file.list)])
nonwriting.count <- length(file.list[grepl("non-writing", file.list)])

#create data frame
df <- data.frame(subfolder = c("writing", "non-writing"),
                 count = c(writing.count, nonwriting.count))
```

Create a bar plot with counts.

```
counts.plot <- ggplot(data = df, aes(x = subfolder, y = count, fill = subfolder)) +
  geom_bar(stat = "identity") +
  geom_text(aes(label = count), vjust = -0.2, color = "black", size = 4) +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45))
counts.plot
```



Safe figure to file

```
ggsave("~/Github/NaLaFi/figures/simpleStats_writing.pdf", counts.plot, dpi = 300,
       scale = 1, device = cairo_pdf)
```

```
## Saving 4 x 4 in image
```

Count number of files in subfolders

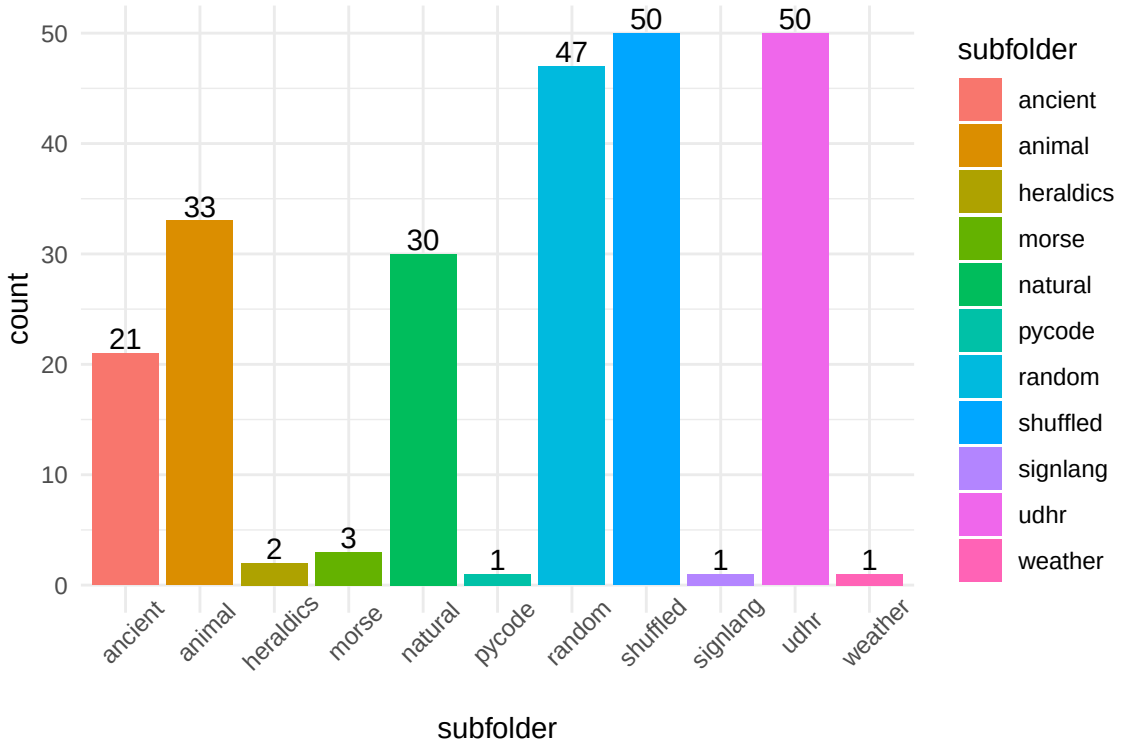
Count how many files are in each of the highest level subfolders of "data", and create a dataframe with counts.

```
#number of "animal" files
animal.count <- length(file.list[grepl("animal", file.list)])
ancient.count <- length(file.list[grepl("ancient", file.list)])
heraldics.count <- length(file.list[grepl("heraldics", file.list)])
morse.count <- length(file.list[grepl("morse", file.list)])
natural.count <- length(file.list[grepl("natural", file.list)])
pycode.count <- length(file.list[grepl("pycode", file.list)])
random.count <- length(file.list[grepl("random", file.list)])
signlang.count <- length(file.list[grepl("signlang", file.list)])
shuffled.count <- length(file.list[grepl("shuffled", file.list)])
udhr.count <- length(file.list[grepl("udhr", file.list)])
weather.count <- length(file.list[grepl("weather", file.list)])

#create data frame
df <- data.frame(subfolder = c("animal", "ancient", "heraldics", "morse",
                               "natural", "pycode", "random", "signlang",
```

```
                          "shuffled", "udhr", "weather"),
                count = c(animal.count, ancient.count, heraldics.count,
                          morse.count, natural.count, pycode.count,
                          random.count, signlang.count, shuffled.count,
                          udhr.count, weather.count))
```

Create a bar plot with counts.

```
counts.plot <- ggplot(data = df, aes(x = subfolder, y = count, fill = subfolder)) +
  geom_bar(stat = "identity") +
  geom_text(aes(label = count), vjust = -0.2, color = "black", size = 4) +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45))
counts.plot
```



Safe figure to file

```
ggsave("~/Github/NaLaFi/figures/simpleStats_counts.pdf", counts.plot, dpi = 300,
       scale = 1, device = cairo_pdf)
```

```
## Saving 6 x 4.5 in image
```

Lengths of files in characters

Read files and count characters

```
# set counter
counter = 0
# initialize dataframe to append results to
simpleStats.df <- data.frame(filename = character(0), subcorpus = character(0),
                             num.lines = numeric(0), num.chars = numeric(0))

for (file in file.list)
{
  # loading textfile
  textfile <- scan(file, what = "char", quote = "", comment.char = "",
                   encoding = "UTF-8", sep = "\n", skip = 7)
  textfile <- gsub("\t","",textfile) # remove tabs
  textfile <- gsub("<.*>","",textfile) # remove annotations marked by '<>'
  #print(head(textfile))
  # get filename
  filename <- basename(file)
  #print(filename) # for visual inspection
  # get subcorpus category
  subcorpus <- sub("_.*", "", filename)
  #print(subcorpus) # for visual inspection
  # count number of lines in text file
  num.lines <- length(textfile)
  # count the number of utf-8 characters in text file (note that this includes white
  # spaces)
  num.chars <- sum(nchar(textfile, type ="chars"))
  #print(num.chars) # for visual inspection
  # append results to dataframe
  local.df <- data.frame(filename, subcorpus, num.lines, num.chars)
  simpleStats.df <- rbind(simpleStats.df, local.df)
  # counter
  counter <- counter + 1
  #print(counter)
}
simpleStats.df
```

```
##                   filename subcorpus num.lines num.chars
## 1      animal_bhg_0001.txt    animal         1       765
## 2      animal_bhg_0002.txt    animal         1       272
## 3      animal_bhg_0003.txt    animal         1       734
## 4      animal_bhg_0004.txt    animal         1       341
## 5      animal_bhg_0005.txt    animal         1       182
## 6      animal_bhg_0006.txt    animal         1      1598
## 7      animal_bhg_0007.txt    animal         1      1118
## 8      animal_bhg_0008.txt    animal         1       995
## 9      animal_bhg_0009.txt    animal         1       213
## 10     animal_bhg_0010.txt    animal         1       426
## 11     animal_cad_0001.txt    animal         6        36
## 12     animal_cad_0002.txt    animal        17       151
## 13     animal_cav_0001.txt    animal         1       407
```

```
## 14     animal_cav_0002.txt    animal         1       636
## 15     animal_cav_0003.txt    animal         1       176
## 16     animal_cav_0004.txt    animal         1        23
## 17     animal_cav_0005.txt    animal         1       167
## 18     animal_cav_0006.txt    animal         1       116
## 19     animal_cav_0007.txt    animal         1        32
## 20     animal_cav_0008.txt    animal         1       161
## 21     animal_cav_0009.txt    animal         1       116
## 22     animal_cth_0001.txt    animal         1       287
## 23     animal_cth_0002.txt    animal         1       871
## 24     animal_cth_0003.txt    animal         1       391
## 25     animal_cth_0004.txt    animal         1       779
## 26     animal_cth_0005.txt    animal         1      1533
## 27     animal_cth_0006.txt    animal         1       608
## 28     animal_cth_0007.txt    animal         1       560
## 29     animal_cth_0008.txt    animal         1      2288
## 30     animal_cth_0009.txt    animal         1      1440
## 31     animal_cth_0010.txt    animal         1      4492
## 32     animal_cth_0011.txt    animal         1       604
## 33     animal_zfi_0001.txt    animal         3        31
## 34  heraldics_bla_0001.txt heraldics       503     44198
## 35  heraldics_bla_0002.txt heraldics       207     13932
## 36      morse_moc_0001.txt     morse         1      1291
## 37      morse_moc_0002.txt     morse         3      2257
## 38      morse_moc_0003.txt     morse         1       175
## 39    natural_dna_0001.txt   natural       157     10958
## 40    natural_dna_0002.txt   natural       209     14621
## 41    natural_dna_0003.txt   natural       713     49910
## 42    natural_dna_0004.txt   natural       713     49910
## 43    natural_dna_0005.txt   natural       713     49910
## 44    natural_dna_0006.txt   natural       713     49910
## 45    natural_dna_0007.txt   natural       713     49910
## 46    natural_dna_0008.txt   natural       713     49910
## 47    natural_dna_0009.txt   natural       713     49910
## 48    natural_dna_0010.txt   natural       713     49910
## 49    natural_dna_0011.txt   natural       713     49910
## 50    natural_dna_0012.txt   natural       713     49910
## 51    natural_dna_0013.txt   natural       713     49910
## 52    natural_dna_0014.txt   natural       713     49910
## 53    natural_dna_0015.txt   natural       713     49910
## 54    natural_dna_0016.txt   natural       713     49910
## 55    natural_dna_0017.txt   natural       713     49910
## 56    natural_dna_0018.txt   natural       713     49910
## 57    natural_dna_0019.txt   natural       713     49910
## 58    natural_dna_0020.txt   natural       713     49910
## 59    natural_dna_0021.txt   natural       713     49910
## 60    natural_dna_0022.txt   natural       713     49910
## 61    natural_dna_0023.txt   natural       713     49910
## 62    natural_dna_0024.txt   natural       713     49910
## 63    natural_dna_0025.txt   natural       713     49910
## 64    natural_dna_0026.txt   natural       713     49910
## 65    natural_dna_0027.txt   natural       713     49910
## 66    natural_dna_0028.txt   natural       713     49910
## 67    natural_dna_0029.txt   natural       713     49910
```

```
## 68    natural_dna_0030.txt   natural       713     49910
## 69     pycode_pyc_0001.txt    pycode        40      1282
## 70           random_ran_10    random         1      1000
## 71           random_ran_11    random         1      1000
## 72           random_ran_12    random         1      1000
## 73           random_ran_13    random         1      1000
## 74           random_ran_14    random         1      1000
## 75           random_ran_15    random         1      1000
## 76           random_ran_16    random         1      1000
## 77           random_ran_17    random         1      1000
## 78           random_ran_18    random         1      1000
## 79           random_ran_19    random         1      1000
## 80            random_ran_2    random         1      1000
## 81           random_ran_20    random         1      1000
## 82           random_ran_21    random         1      1000
## 83           random_ran_22    random         1      1000
## 84           random_ran_23    random         1      1000
## 85           random_ran_24    random         1      1000
## 86           random_ran_25    random         1      1000
## 87           random_ran_26    random         1      1000
## 88           random_ran_27    random         1      1000
## 89           random_ran_28    random         1      1000
## 90           random_ran_29    random         1      1000
## 91            random_ran_3    random         1      1000
## 92           random_ran_30    random         1      1000
## 93           random_ran_31    random         1      1000
## 94           random_ran_32    random         1      1000
## 95           random_ran_33    random         1      1000
## 96           random_ran_34    random         1      1000
## 97           random_ran_35    random         1      1000
## 98           random_ran_36    random         1      1000
## 99           random_ran_37    random         1      1000
## 100          random_ran_38    random         1      1000
## 101          random_ran_39    random         1      1000
## 102           random_ran_4    random         1      1000
## 103          random_ran_40    random         1      1000
## 104          random_ran_41    random         1      1000
## 105          random_ran_42    random         1      1000
## 106          random_ran_43    random         1      1000
## 107          random_ran_44    random         1      1000
## 108          random_ran_45    random         1      1000
## 109          random_ran_46    random         1      1000
## 110          random_ran_47    random         1      1000
## 111          random_ran_48    random         1      1000
## 112           random_ran_5    random         1      1000
## 113           random_ran_6    random         1      1000
## 114           random_ran_7    random         1      1000
## 115           random_ran_8    random         1      1000
## 116           random_ran_9    random         1      1000
## 117      shuffled_aii_0001  shuffled         1      1000
## 118      shuffled_arb_0001  shuffled         1      1000
## 119      shuffled_azj_0001  shuffled         1      1000
## 120      shuffled_azj_0002  shuffled         1      1000
## 121      shuffled_ben_0001  shuffled         1      1000
```

```
## 122      shuffled_blt_0001  shuffled         1      1000
## 123      shuffled_bod_0001  shuffled         1      1000
## 124      shuffled_bos_0001  shuffled         1      1000
## 125      shuffled_bos_0002  shuffled         1      1000
## 126      shuffled_chr_0001  shuffled         1      1000
## 127      shuffled_cmn_0001  shuffled         1      1000
## 128      shuffled_cmn_0002  shuffled         1      1000
## 129      shuffled_csw_0001  shuffled         1      1000
## 130      shuffled_div_0001  shuffled         1      1000
## 131      shuffled_ell_0001  shuffled         1      1000
## 132      shuffled_eng_0001  shuffled         1      1000
## 133      shuffled_epo_0001  shuffled         1      1000
## 134      shuffled_eus_0001  shuffled         1      1000
## 135      shuffled_gaz_0001  shuffled         1      1000
## 136      shuffled_guj_0001  shuffled         1      1000
## 137      shuffled_heb_0001  shuffled         1      1000
## 138      shuffled_hin_0001  shuffled         1      1000
## 139      shuffled_hye_0001  shuffled         1      1000
## 140      shuffled_ibb_0001  shuffled         1      1000
## 141      shuffled_iii_0001  shuffled         1      1000
## 142      shuffled_ike_0001  shuffled         1      1000
## 143      shuffled_jav_0001  shuffled         1      1000
## 144      shuffled_jav_0002  shuffled         1      1000
## 145      shuffled_jpn_0001  shuffled         1      1000
## 146      shuffled_kal_0001  shuffled         1      1000
## 147      shuffled_kan_0001  shuffled         1      1000
## 148      shuffled_kat_0001  shuffled         1      1000
## 149      shuffled_khm_0001  shuffled         1      1000
## 150      shuffled_kkh_0001  shuffled         1      1000
## 151      shuffled_kor_0001  shuffled         1      1000
## 152      shuffled_lao_0001  shuffled         1      1000
## 153      shuffled_lug_0001  shuffled         1      1000
## 154      shuffled_mal_0001  shuffled         1      1000
## 155      shuffled_mya_0001  shuffled         1      1000
## 156      shuffled_pan_0001  shuffled         1      1000
## 157      shuffled_rus_0001  shuffled         1      1000
## 158      shuffled_sin_0001  shuffled         1      1000
## 159      shuffled_tam_0001  shuffled         1      1000
## 160      shuffled_tel_0001  shuffled         1      1000
## 161      shuffled_tgl_0001  shuffled         1      1000
## 162      shuffled_tha_0001  shuffled         1      1000
## 163      shuffled_tir_0001  shuffled         1      1000
## 164      shuffled_vai_0001  shuffled         1      1000
## 165      shuffled_zgh_0001  shuffled         1      1000
## 166      shuffled_zul_0001  shuffled         1      1000
## 167   weather_wsy_0001.txt   weather        26      3987
## 168   ancient_akk_0001.txt   ancient        10      2698
## 169   ancient_akk_0002.txt   ancient         8      1603
## 170   ancient_cre_0001.txt   ancient        19       270
## 171   ancient_cre_0002.txt   ancient        48      1099
## 172   ancient_ela_0001.txt   ancient        30       578
## 173   ancient_ela_0002.txt   ancient        59       692
## 174   ancient_pra_0001.txt   ancient         4      1101
## 175   ancient_prc_0001.txt   ancient        46       848
```

```
## 176   ancient_prc_0002.txt   ancient        24       448
## 177   ancient_prc_0003.txt   ancient        18       210
## 178   ancient_prc_0004.txt   ancient        16       217
## 179   ancient_sum_0001.txt   ancient        70      1560
## 180   ancient_sum_0002.txt   ancient        30       361
## 181   ancient_sum_0003.txt   ancient         9       171
## 182   ancient_sum_0004.txt   ancient        18       237
## 183   ancient_sum_0005.txt   ancient         9       275
## 184   ancient_sum_0006.txt   ancient        11       137
## 185   ancient_sum_0007.txt   ancient        10       227
## 186   ancient_sum_0008.txt   ancient         9       192
## 187   ancient_sum_0009.txt   ancient        19       579
## 188   ancient_sum_0010.txt   ancient        10       228
## 189  signlang_tsl_0001.txt  signlang        14       479
## 190      udhr_aii_0001.txt      udhr        88      6471
## 191      udhr_arb_0001.txt      udhr        90      7629
## 192      udhr_azj_0001.txt      udhr        90     10749
## 193      udhr_azj_0002.txt      udhr        90     10745
## 194      udhr_ben_0001.txt      udhr        94      9718
## 195      udhr_blt_0001.txt      udhr        89      8804
## 196      udhr_bod_0001.txt      udhr        90     12649
## 197      udhr_bos_0001.txt      udhr        90      9694
## 198      udhr_bos_0002.txt      udhr        90      9871
## 199      udhr_chr_0001.txt      udhr        89      8985
## 200      udhr_cmn_0001.txt      udhr        89      2960
## 201      udhr_cmn_0002.txt      udhr        90      2789
## 202      udhr_csw_0001.txt      udhr        67      6513
## 203      udhr_div_0001.txt      udhr        88     18129
## 204      udhr_ell_0001.txt      udhr        90     12392
## 205      udhr_eng_0001.txt      udhr        91     10606
## 206      udhr_epo_0001.txt      udhr        91      9884
## 207      udhr_eus_0001.txt      udhr        93     10907
## 208      udhr_gaz_0001.txt      udhr        92     10473
## 209      udhr_guj_0001.txt      udhr        91      9959
## 210      udhr_heb_0001.txt      udhr        89      7261
## 211      udhr_hin_0001.txt      udhr        90     10497
## 212      udhr_hye_0001.txt      udhr        92     11119
## 213      udhr_ibb_0001.txt      udhr       100     13205
## 214      udhr_iii_0001.txt      udhr        88      3272
## 215      udhr_ike_0001.txt      udhr        67      8541
## 216      udhr_jav_0001.txt      udhr        92     10816
## 217      udhr_jav_0002.txt      udhr        92     13651
## 218      udhr_jpn_0001.txt      udhr        89      4157
## 219      udhr_kal_0001.txt      udhr        90     16786
## 220      udhr_kan_0001.txt      udhr        89     10534
## 221      udhr_kat_0001.txt      udhr        90     11828
## 222      udhr_khm_0001.txt      udhr        90     10652
## 223      udhr_kkh_0001.txt      udhr        82      9938
## 224      udhr_kor_0001.txt      udhr        91      4709
## 225      udhr_lao_0001.txt      udhr        90     10502
## 226      udhr_lug_0001.txt      udhr        87     10354
## 227      udhr_mal_0001.txt      udhr        82     10557
## 228      udhr_mya_0001.txt      udhr        89     15131
## 229      udhr_pan_0001.txt      udhr        90     10681
```

```
## 230      udhr_rus_0001.txt      udhr        90     11684
## 231      udhr_sin_0001.txt      udhr        90     10543
## 232      udhr_tam_0001.txt      udhr        89     13133
## 233      udhr_tel_0001.txt      udhr        89     11075
## 234      udhr_tgl_0001.txt      udhr        94     12246
## 235      udhr_tha_0001.txt      udhr        89      9278
## 236      udhr_tir_0001.txt      udhr        89      6640
## 237      udhr_vai_0001.txt      udhr        91      8556
## 238      udhr_zgh_0001.txt      udhr        89      7770
## 239      udhr_zul_0001.txt      udhr        91     10217
```

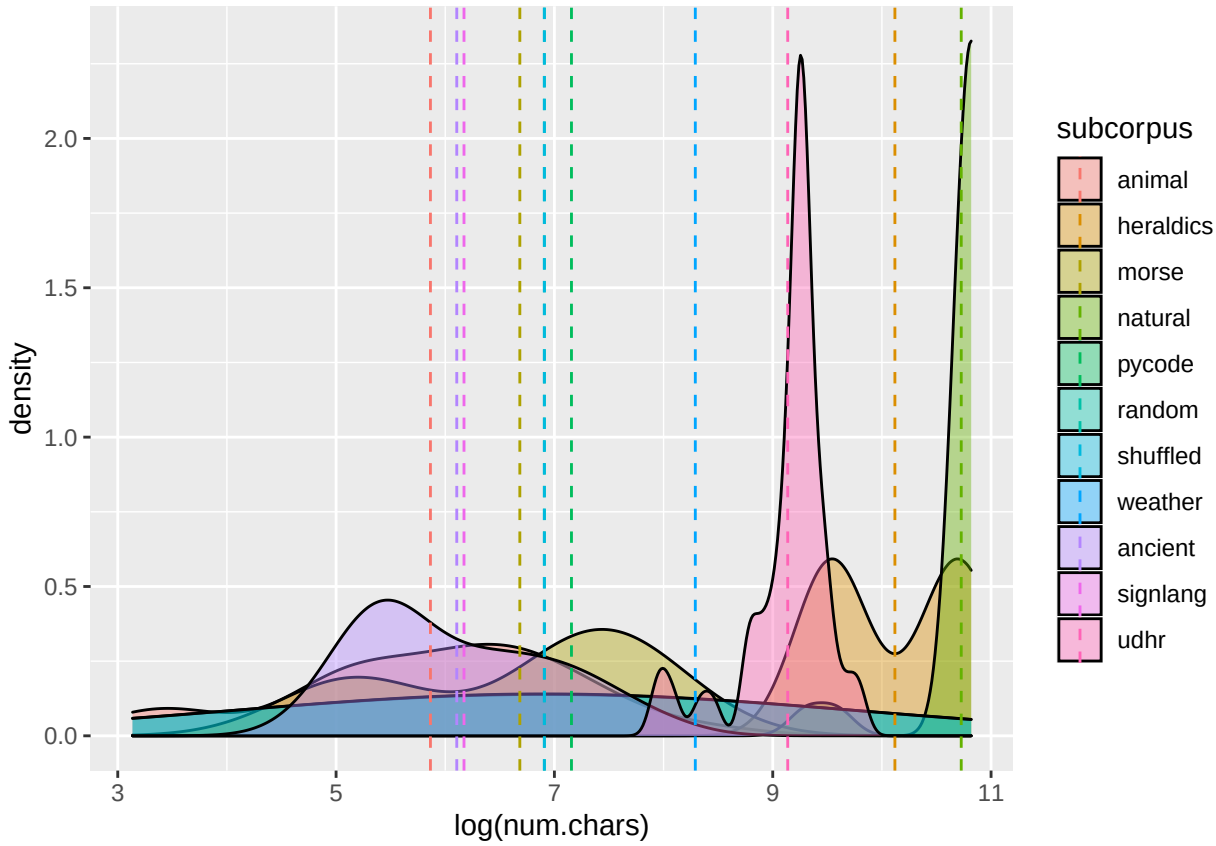
Density plot

Density plot for numbers of characters per data file and subcorpus.

```
# select subcorpora (if applicable)
# selection <- c("writing", "shuffled")
#simpleStats.df <- simpleStats.df[simpleStats.df$subcorpus %in% selection, ]
# get means per subcorpus
mu <- ddply(simpleStats.df, "subcorpus", summarise, grp.mean = mean(log(num.chars)))
# plot densities with mean values as vertical lines
density.plot <- ggplot(simpleStats.df, aes(x = log(num.chars), fill = subcorpus)) +
  geom_density(alpha = 0.4) +
  geom_vline(data = mu, aes(xintercept = grp.mean, color = subcorpus),
             linetype = "dashed")
print(density.plot)
```

```
## Warning: Groups with fewer than two data points have been dropped.

## Warning: Groups with fewer than two data points have been dropped.

## Warning: Groups with fewer than two data points have been dropped.
```

```
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning -
## Inf

## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning -
## Inf

## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning -
## Inf
```



Safe figure to file

```
ggsave("~/Github/NaLaFi/figures/simpleStats_density.pdf", density.plot, dpi = 300,
       scale = 1, device = cairo_pdf)
```

```
## Saving 8 x 4 in image
## Warning: Groups with fewer than two data points have been dropped.
## Warning: Groups with fewer than two data points have been dropped.
## Warning: Groups with fewer than two data points have been dropped.
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning -
## Inf
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning -
## Inf
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning -
## Inf
```