Lesson 3, Week 4: More playing with text

AIM

— Playful creativity, using what we've learnt so far

After this lesson, you will be able to

* Play by replacing specific words
* Play by replacing specific letters
* Use the function `rand` and the array `[true, false]` to simulate the toss of a fair coin
* Play by replacing randomly selected words

Reminder: we use the array `pridewords`, which contains the words but none of the punctuation from Pride and Prejudice extract in the file `prideandprejudiceextract.txt` which we provide along with the other course material. Please use the code from the previous lesson to make the array available.

Deliberate word replacements

A pleasant game is to replace words with other strings. There are actually many ways to do so, but here we will use the same method as for counting phrases: a `for` loop over all the words, but not directly as in `for word in pridewords`. Rather, we will loop over a range and use indexing.

```
for i in 1:length(pridewords)
    if pridewords[i] == "Bennet"
  newwords1[i] = "Klunderclap"
  end
end
println(join(newwords1, ' '))
```

[DEMO: illustrate this with full file, modify to do only the first 200 words, replace also "and", "is" and "the"]

[DEMO: instead of replacing word matches, put in regular replacements by using a range like `1:5:length(pridwords)`]

Deleting some letters only

For this one has to go back to the original string of the whole file, or else concatenate all of words into one string file (retaining the spaces, otherwise it is an unfunny mess). One can play in similar ways to the word replacement, it is particularly interesting to filter out all the occurences of the letter "e". This is left as an exercise.

Using random numbers to guide swops and/or deletions and/or replacements of words

Monte Carlo simulation is a general term in science for creating patterns that are the result of random processes. It is a vast topic, but we can play a little with using it here.

The function `rand` can be used to pick an element randomly from an array. Hence `rand([true, false])` is a simulation of a fair coin. Let's toss a coin for every word in the first few hundred:

```
numwords = 200; newwords = pridewords[1:numwords]
for i in 1:numwords
  if rand([true, false])
    newwords1[i] = "Klunderclap"
  end
end
```

[DEMO: using `rand([true, false, false, false, false])` one can replace every fifth word; replacing words with blank space or ... might also be suggestive]

One can really play wonderfully with randomness! This is just a start.

Review and summary

The only new thing we learnt in this lesson was the functon `rand` and that `rand([true, false])` simulates a toss of a fair coin.

Otherwise it was all play!