CIS 122

The Thrilling Conclusion
Making Markov Dictionaries

- Start with a list of words
- Initialize empty dictionary
- For each word in word list:
  - If it doesn't have an entry, add it to the dictionary
  - Append following word to associated list
- Let's see it in action
Making Markov Dictionaries

fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.
fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy]
Making Markov Dictionaries

fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy]
wuzzy → [was]
Making Markov Dictionaries

fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy]
wuzzy → [was]
was → [a]
Making Markov Dictionaries

fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy]
wuzzy → [was]
was → [a]
a → [bear]
fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy]
wuzzy → [was]
was → [a]
a → [bear]
bear → [.]
fuzzy wuzzy was a bear. **fuzzy** wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy]
wuzzy → [was]
was → [a]
a → [bear]
bear → [.]
. → [fuzzy]
Making Markov Dictionaries

fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy, wuzzy]
wuzzy → [was]
was → [a]
a → [bear]
bear → [.]
. → [fuzzy]
fuzzy wuzzy was a bear. fuzzy wuzzy had no hair. fuzzy wuzzy wasn't very fuzzy was he.

fuzzy → [wuzzy, wuzzy]
wuzzy → [was, had]
was → [a]
a → [bear]
bear → [.]
. → [fuzzy]
Making Markov Dictionaries

● Start with a list of words

● Initialize empty dictionary

● For each word in word list:
  ○ If it doesn't have an entry, add it to the dictionary
  ○ Append following word to associated list

● Let's see it in action

● Now let's code it up!
Chaining Words Together

● We have a Markov Dictionary
  ○ List of possible following words for any first word

● Let's write a function `constructSentence`(markovDictionary)
  ○ Takes a Markov Dictionary as input
  ○ Produces a string of words forming a sentence

● Where do we start?
Chaining Words Together

- Find a word that could start a sentence
  - Look up words following '.' in our dictionary
  - Pick one

- Find a word that could follow that word
  - Look up words following current word in our dictionary
  - Pick one

- Repeat until we find another '.'

- How do we randomly select something from a list?
  - `random.choice(myList)`
Put it all Together

- Almost there!

- Try writing a function `markov(filename, numSentences)`
  - Takes a filename and a number of sentences to produce
  - Generates that number of sentences

- Mostly calling functions we've already written