CSC108H Winter 2018 Worksheet: Random Story Generation 1

Introduction

You are going to develop a program that can read a file containing a story and then write a new story based on a random selection of the words from the original story.

As an example, consider this old German saying:

```
What I spent, I had; what I saved, I lost; what I gave, I have.
```

We're going to write a new saying using only those words, in somewhat random order.

There are rules to choosing a random word:

- Start with a single word, such as `I`, and print the word. We will call that word the *current context*.
- Look for all occurrences of the current context and pick one of the words that follow the current context. In our example, here are the words that follow `I`:

  ```
  spent,  had;  saved,  lost;  gave,  have.
  ```

  Punctuation is included as part of the word, and capitalization matters. For example, **`what`** and **`What`** are considered to be different words.

  After you pick the next word, print the word, with a space between it and the previous word. The word that you picked becomes the next current context, and we repeat the process. For example, if we pick **`lost;`**, there is only one word that follows it: **`what`**. We pick **`what`** as our next word, print a space and **`what`**, and then make **`what`** the next current context. So far, we have printed this:

  ```
  I lost; what
  ```

- Keep repeating the process until you decide that you have printed enough words. Note that a word may be printed more than once.

1. Assume that the current context is **`what`**. Write the words that follow the current context (if the same word appears more than once, write it down again):

In the previous example, the current context was only one word long, but you can imagine using 2 words for the current context. For example, if the current context was **`what I`** then here are the words that follow this context:

```
saved,  gave,
```

Let's say we pick **`gave,`**. We print **`gave,`**, and then the new 2-word current context is **`I gave,`**.

2. Assume that the current context is **`I gave,`**. Write the word(s) that follow the current context:

A Larger Example

Your program will get the following information:

- **Training text**: the text that the new story will be based on, such as the German saying above, or a poem.
- **Number of words in context**: the number of words of context from the training text to use to determine the next word.
- **Length of story**: the number of words to print in the story.

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Here is some training text. Treat newlines like spaces.

```
The sun did not shine.
It was too wet to play.
So we sat in the house
All that cold, cold, wet day.
I sat there with Sally,
We sat there we two.
And I said, How I wish
We had something to do!
Too wet to go out
And too cold to play ball.
So we sat in the house.
We did nothing at all.
So all we could do was to
Sit! Sit! Sit! Sit!
And we did not like it.
Not one little bit.
```

Using a 1-word context:

1. Assume that the current context is `to`. Write the words that follow the current context:

2. Assume that the current context is `wet`. Write the words that follow the current context:

Using a 2-word context:

1. Assume that the current context is `did not`. Write the words that follow the current context:

2. Choose one of those words randomly. Now print the new current context:

If the length of the story to be printed is 11 words and there is one word of context, here are some possible stories:

- cold, wet to play ball. So we two. And too cold
- could do was too wet to play. So we sat in
- said, How I sat there with Sally, We did nothing at
- I said, How I sat in the house. We had something
- all we could do was to go out And too cold
- Sit! Sit! Sit! Sit! Sit! Sit! Sit! Sit! Sit! Sit! Sit!

Finish writing the following story (11 words long, using one word of context):

We did not shine. It was _____