**Assignment 2 Report**

Jeremy Piperni

260990011

**Levenshtein distance** was calculated using the following algorithm:

https://en.wikibooks.org/wiki/Algorithm\_Implementation/Strings/Levenshtein\_distance#Python

**Part 1: Generating Text Using a Markov Model**

Sentence generation examples:

**Example 1:**

Mrs . Weston was often looking at her time to subdue it , and an early hour , and not very well ; and from his wife .

Sources: (Word:Source)

['Mrs: Bigram', '.: Trigram', 'Weston: Trigram', 'was: Trigram', 'often: Trigram', 'looking: Trigram', 'at: Trigram', 'her: Trigram', 'time: Trigram', 'to: Trigram', 'subdue: Trigram', 'it: Trigram', ',: Trigram', 'and: Trigram', 'an: Trigram', 'early: Trigram', 'hour: Trigram', ',: Trigram', 'and: Trigram', 'not: Trigram', 'very: Trigram', 'well: Trigram', ';: Trigram', 'and: Trigram', 'from: Trigram', 'his: Trigram', 'wife: Trigram', '.: Trigram', '</s>: Trigram']

**Example 2:**

Mrs Croft ' s mind .

Sources:

['Mrs: Bigram', 'Croft: Trigram', "': Trigram", 's: Trigram', 'mind: Trigram', '.: Trigram', '</s>: Trigram']

**Example 3:**

She had seen her ?

Sources:

['She: Bigram', 'had: Trigram', 'seen: Trigram', 'her: Trigram', '?: Trigram', '</s>: Trigram']

**Example 4:**

It was a very good - humoured , cheerful , exulting , of rational dependence :-- " We have had a great deal of good fortune .

Sources:

['It: Bigram', 'was: Trigram', 'a: Trigram', 'very: Trigram', 'good: Trigram', '-: Trigram', 'humoured: Trigram', ',: Trigram', 'cheerful: Trigram', ',: Trigram', 'exulting: Trigram', ',: Trigram', 'of: Trigram', 'rational: Trigram', 'dependence: Trigram', ':--: Trigram', '": Trigram', 'We: Trigram', 'have: Trigram', 'had: Trigram', 'a: Trigram', 'great: Trigram', 'deal: Trigram', 'of: Trigram', 'good: Trigram', 'fortune: Trigram', '.: Trigram', '</s>: Trigram']

**Example 5:**

I never happened to be better than to my poor son gone for ever .

Sources:

['I: Bigram', 'never: Trigram', 'happened: Trigram', 'to: Trigram', 'be: Trigram', 'better: Trigram', 'than: Trigram', 'to: Trigram', 'my: Trigram', 'poor: Trigram', 'son: Trigram', 'gone: Trigram', 'for: Trigram', 'ever: Trigram', '.: Trigram', '</s>: Trigram']

**Part 2: Sentence Correction Using a Hidden Markov Model**

|  |  |
| --- | --- |
| **Sentences to be corrected** | **Corrected sentences** |
| I think hat twelve thousand pounds | I think that there should you |
| she haf heard them | she had heard them |
| She was ulreedy quit live | She was already quite like |
| John Knightly wasn’t hard at work | John Knightley was hard at work |
| he said nit word by | he said it would be |