IT302 Assignment 4

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TOPIC: MARKOV CHAIN

Note:
1) The colab link has been attached below. After opening the link, if it opens in drive, click on “Open with Google Colaboratory” to view the complete code.
2) Only output screenshots have been attached. Code for the same can be found in the colab notebook.

Colab notebook link:
https://colab.research.google.com/drive/1RiCeUhRig42UK--q4T6uxj2bk59l6FUx

Q1. SOLUTION:
(a) Generating words from characters
Output:
Execution 1:

```
Select the number of characters you want to generate: 4
The generated word is:
Gate
```

Execution 2:

```
Select the number of characters you want to generate: 5
The generated word is:
Årton
```

Execution 3:

```
Select the number of characters you want to generate: 5
The generated word is:
°Cave
```

Observation:
A dataset of english sentences has been used to build the dictionary of characters which are followed by other characters. The words generated might not be meaningful as the size of the dictionary will be small and almost all characters will be in the list of values for a key. Now, as we choose the following character randomly, the chances that the generated word will be meaningful is less.
(b) Generating sentences from words
Output:
Execution 1:

```
Select the number of words you want to generate: 6
The generated sentence is:
आमवातिक ज्वर के परीक्षणों पर अमुक
```

Execution 2:

```
Select the number of words you want to generate: 4
The generated sentence is:
भूमिति भी निर्देशन किया
```

Execution 3:

```
Select the number of words you want to generate: 10
The generated sentence is:
जंगफ्रोज का स्की जम्पिंग और तीन मिलियन वस्तुएं निरंतर एक
```

Observation:

A Hindi language(as mentioned in question) dataset has been used to create a dictionary for markov text generation. We see that as the length of the text increases, the less semantic the sentence becomes. Again, this arises due to the fact that we choose the next word randomly from the list of the previous word from the dictionary.

(continued...)

Q2. SOLUTION:

Output:

Execution 1:

```
('£1.2', 'billion') ['is']
('billion', 'is') ['a', 'the']
('is', 'a') ['huge', 'minnesota', 'more', 'technological', '
('a', 'huge') ['amount', 'problem.', 'profit', 'amount', '(l
('huge', 'amount') ['and', 'of', 'of', 'of', 'of', 'of', 'of
('amount', 'and') ['that']
('and', 'that') ['was', 'their', 'was', 'of', 'the', 'was',
('that', 'was') ['constraining', 'unfortunate.', 'the', 'for
('was', 'constraining') ['us']
('constraining', 'us') ['in']


Choose a tuple from above keys and write them as a sentence:
a huge

The sentence generated is:
a huge range of fitness trackers starts at 7:30.
```

Execution 2:

```
('£1.2', 'billion') ['is']
('billion', 'is') ['a', 'the']
('is', 'a') ['huge', 'minnesota', 'more', 'technological', 'keen', 'diver
('a', 'huge') ['amount', 'problem.', 'profit', 'amount', '(largely', 'smi
('huge', 'amount') ['and', 'of', 'of', 'of', 'of', 'of', 'of', 'of']
('amount', 'and') ['that']
('and', 'that') ['was', 'their', 'was', 'of', 'the', 'was', 'navy', 'vote
('that', 'was') ['constraining', 'unfortunate.', 'the', 'for', 'the', 'th
('was', 'constraining') ['us']
('constraining', 'us') ['in']


Choose a tuple from above keys and write them as a sentence:
a huge

The sentence generated is:
a huge amount of energy can even smoke in class, at least
```

Observation: Here the completed sentences are much more meaningful as 2 pairs of consecutive words are used as a key in the dictionary unlike one word as key in the previous question.

THANK YOU