Good

PROJECT 3

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Introduction:

About NLTK - NLTK aka the Natural Language Toolkit, is a suite of open source Python modules, data sets, and tutorials supporting research and development in Natural Language Processing. It contains text processing libraries for tokenization, parsing, classification, stemming, tagging and semantic reasoning. It also includes graphical demonstrations and sample data sets as well as accompanied by a cook book and a book which explains the principles behind the underlying language processing tasks that NLTK supports.

Purpose:

Hidden information often lies deep within the boundaries of what we can perceive with our eyes and our ears. Some look to data for that purpose, and most of the time, data can tell us more than we thought was imaginable. But sometimes data might not be clear cut enough to perform any sort of analytics. Language, tone, and sentence structure can explain a lot about how people are feeling, and can even be used to predict how people might feel about similar topics using a combination of the Natural Language Toolkit, a Python library used for analyzing text, and machine learning.

For this project I was to develop a Feature grammar to parse given sentences and judge the sentiment behind the sentence. The console has options to run **Sentiment Analyzer** either on a good inbuilt data or bad inbuilt data sentences to parse. Analysis of data has been done in a way that is easily comprehensible. Overall goal of the project was to create a parser and a FCFG which filters data by using NLTK access commands and creates sentence trees and visualize them in a more informative way. NLTK is not perfect and lacks in some areas which is being explored below.

Good Validation Data (Feature Context Free Grammar)/ Sentiment Parser:

Examples:

- Good Sentence 1 - It is a compelling Story
  OUTPUT:

```
Sentence ->  it is a compelling story
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (V[+AUX] is)
    (VP[]
      (NP[]
        (NP[] (NP[] (DT[] a)) (NP[] (ADJ[SNT='POS'] compelling)))
        (NP[+WH] story)))))


          ##########################


          Sentence is positive.


          ##########################
```

- GoodSentence 2
  OUTPUT:

```
Sentence ->  it has low impact
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (V[+AUX] has)
    (VP[] (NP[] (NP[] (ADJ[SNT='NEG'] low)) (NP[+WH] impact)))))


          ##########################


          Sentence is negative.


          ##########################
```

- Good Sentence 3
  OUTPUT:

```
Sentence ->  it has low impact but it is a compelling story
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (VP[]
      (V[+AUX] has)
      (VP[] (NP[] (NP[] (ADJ[SNT='NEG'] low)) (NP[+WH] impact))))
    (SBar[]
      (Comp[] but)
      (S[-INV]
        (NP[+WH] it)
        (VP[]
          (V[+AUX] is)
          (VP[]
            (NP[]
              (NP[]
                (NP[] (DT[] a))
                (NP[] (ADJ[SNT='POS'] compelling)))
              (NP[+WH] story))))))))


        ###########################

        Sentence is Positive.

        ###########################
```

- Good Sentence 4
  OUTPUT:

```
Sentence ->  it is a compelling story , but it has low impact
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (VP[]
      (V[+AUX] is)
      (VP[]
        (NP[]
          (NP[] (NP[] (DT[] a)) (NP[] (ADJ[SNT='POS'] compelling)))
          (NP[+WH] story))))
    (SPR[] ,)
    (SBar[]
      (Comp[] but)
      (S[-INV]
        (NP[+WH] it)
        (VP[]
          (V[+AUX] has)
          (VP[] (NP[] (NP[] (ADJ[SNT='NEG'] low)) (NP[+WH] impact)))))))))


        ###########################

        Sentence if Negative

        ###########################
```

- Good Sentence 5
  OUTPUT:

```
Sentence ->  it is a compelling story , but it has low impact
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (VP[]
      (V[+AUX] is)
      (VP[]
        (NP[]
          (NP[] (NP[] (DT[] a)) (NP[] (ADJ[SNT='POS'] compelling)))
          (NP[+WH] story))))
    (SPR[] ,)
    (SBar[]
      (Comp[] but)
      (S[-INV]
        (NP[+WH] it)
        (VP[]
          (V[+AUX] has)
          (VP[] (NP[] (NP[] (ADJ[SNT='NEG'] low)) (NP[+WH] impact))))))))


          #########################

          Sentence if Negative

          #########################
```

- Good Sentence 6
  OUTPUT:

```
Sentence ->  it has gut-wrenching impact and it is a compelling story
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (VP[]
      (V[+AUX] has)
      (VP[]
        (NP[] (NP[] (ADJ[SNT='NEG'] gut-wrenching)) (NP[+WH] impact))))
    (SBar[]
      (Comp[] and)
      (S[-INV]
        (NP[+WH] it)
        (VP[]
          (V[+AUX] is)
          (VP[]
            (NP[]
              (NP[]
                (NP[] (DT[] a))
                (NP[] (ADJ[SNT='POS'] compelling)))
              (NP[+WH] story))))))))


          #########################

          Sentence is neutral

          #########################
```

- Good Sentence 7
  OUTPUT:

```
Sentence ->  this compelling story with gut-wrenching impact
(S[-INV]
  (NP[]
    (NP[]
      (NP[]
        (NP[] (NP[] (DT[] this)) (NP[] (ADJ[SNT='POS'] compelling)))
        (NP[+WH] story))
      (NP[] (PRP[] with) (NP[] (ADJ[SNT='NEG'] gut-wrenching))))
    (NP[+WH] impact)))


            ##########################

            Sentence is neutral

            ##########################
```

- Good Sentence 8
  OUTPUT:

```
Sentence ->  a perfect example
(S[-INV]
  (NP[]
    (NP[] (NP[] (DT[] a)) (NP[] (ADJ[SNT='POS'] perfect)))
    (NP[+WH] example)))


            ##########################

            Sentence is positive.

            ##########################
```

- Good Sentence 9
  OUTPUT:

```
Sentence ->  manipulative movie making
(S[-INV]
  (NP[] (NP[] (ADJ[SNT='NEG'] manipulative)) (NP[+WH] movie))
  (VP[] (V[+AUX] making)))


            ##########################

            Sentence is negative.

            ##########################
```

- Good Sentence 10
  OUTPUT:

```
Sentence ->  shamelessly manipulative movie making
(S[-INV]
  (NP[]
    (NP[]
      (NP[] (ADJ[SNT='NEG'] shamelessly))
      (NP[] (ADJ[SNT='NEG'] manipulative)))
    (NP[+WH] movie))
  (VP[] (V[+AUX] making)))


                    #########################

                    Sentence is negative.

                    #########################
```

- Good Sentence 11
  OUTPUT:

```
Sentence ->  well-intentioned movie making
(S[-INV]
  (NP[] (NP[] (ADJ[SNT='POS'] well-intentioned)) (NP[+WH] movie))
  (VP[] (V[+AUX] making)))


                    #########################

                    Sentence is positive.

                    #########################
```

- Good Sentence 12
  OUTPUT:

```
Sentence ->  rancid movie making
(S[-INV]
  (NP[] (NP[] (ADJ[SNT='NEG'] rancid)) (NP[+WH] movie))
  (VP[] (V[+AUX] making)))


                    #########################

                    Sentence is negative.

                    #########################
```

- Good Sentence 13
  OUTPUT:

```
Sentence ->  well-intentioned but manipulative movie making
(S[-INV]
  (NP[]
    (NP[]
      (NP[] (NP[] (ADJ[SNT='POS'] well-intentioned)) (Comp[] but))
      (NP[] (ADJ[SNT='NEG'] manipulative)))
    (NP[+WH] movie))
  (VP[] (V[+AUX] making)))


            #########################

            Sentence if Negative

            #########################
```

- Good Sentence 14
  OUTPUT:

```
Sentence ->  a perfect example of well-intentioned but manipulative movie making
(S[-INV]
  (NP[]
    (NP[]
      (NP[]
        (NP[] (NP[] (DT[] a)) (NP[] (ADJ[SNT='POS'] perfect)))
        (NP[]
          (NP[]
            (NP[+WH] example)
            (NP[]
              (PRP[] of)
              (NP[] (ADJ[SNT='POS'] well-intentioned))))
          (Comp[] but)))
      (NP[] (ADJ[SNT='NEG'] manipulative)))
    (NP[+WH] movie))
  (VP[] (V[+AUX] making)))


            #########################

            Sentence if Negative

            #########################
```

- Good Sentence 15
  OUTPUT:

```
Sentence ->  it is neither bad nor good movie
(S[-INV]
  (NP[+WH] it)
  (VP[]
    (VP[]
      (V[+AUX] is)
      (VP[] (NP[] (NP[] (DT[] neither)) (NP[] (ADJ[SNT='NEG'] bad)))))
    (SBar[]
      (Comp[] nor)
      (S[-INV] (NP[] (ADJ[SNT='POS'] good)) (VP[] (NP[+WH] movie))))))


            #########################

            Sentence is neutral

            #########################
```

_____END_____