Lab Assignment 6 Pan Chen

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Pan Chen
Lab 6

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In [ ]: import nltk
        ## Exercise
        # Define sentences for the exercise
        sentex1 = "I prefer a flight through Houston".split()
        sentex2 = "Jack walked with the dog".split()
        sentex3 = "John gave the dog a bone".split()
        sentex4 = "I want to book that flight".split()
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In [9]: # extend the flight grammar:
        flight_grammar = nltk.CFG.fromstring("""
          S -> NP VP | VP
          VP -> V NP | V NP PP | V PP NP | V NP NP | TO VP | V S
          PP -> P NP | P
          NP -> Prop | Det N | Det N PP
          V -> "saw" | "ate" | "walked" | "shot" | "book" | "prefer" | "gave" | "want"
          Prop -> "John" | "Mary" | "Bob" | "I"| "Houston"| "Jack"
          Det -> "a" | "an" | "the" | "my" | "that"
          N -> "man" | "dog" | "cat" | "telescope" | "park" | "elephant" | "pajamas" | "flight"
          P -> "in" | "on" | "by" | "with" | "through"
          TO -> "to"
          """)
        rd_parser = nltk.RecursiveDescentParser(flight_grammar)
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In [10]: # redefine rd_parser when you change the flight grammar
          for tree in rd_parser.parse(sentex1):
              print (tree)
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(S
  (NP (Prop I))
  (VP
    (V prefer)
    (NP (Det a) (N flight) (PP (P through) (NP (Prop Houston))))))
(S
  (NP (Prop I))
  (VP
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    (V prefer)
    (NP (Det a) (N flight))
    (PP (P through) (NP (Prop Houston)))))
(S
  (NP (Prop I))
  (VP
    (V prefer)
    (NP (Det a) (N flight) (PP (P through)))
    (NP (Prop Houston))))
```

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In [11]: for tree in rd_parser.parse(sentex2):
             print (tree)

(S
  (NP (Prop Jack))
  (VP (V walked) (PP (P with)) (NP (Det the) (N dog))))
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In [12]: for tree in rd_parser.parse(sentex3):
             print (tree)

(S
  (NP (Prop John))
  (VP (V gave) (NP (Det the) (N dog)) (NP (Det a) (N bone))))
```

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In [13]: for tree in rd_parser.parse(sentex4):
             print (tree)

(S
  (NP (Prop I))
  (VP
    (V want)
    (S (VP (TO to) (VP (V book) (NP (Det that) (N flight)))))))
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In [ ]:
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In [ ]:
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