

**The flight includes a meal:**

System output:

Sentence accepted: There are 1 possible parse(s).

parse: [s[np[det the][nominal[noun flight]]][vp[verb includes][np[det a][nominal[noun meal]]]]]

precision: 1.0

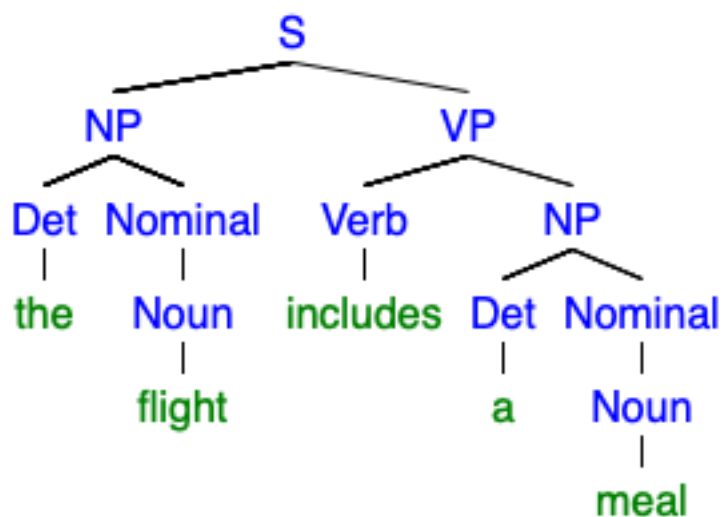
recall: 1.0

prob: 0.000002916 (2.9160008E-6)

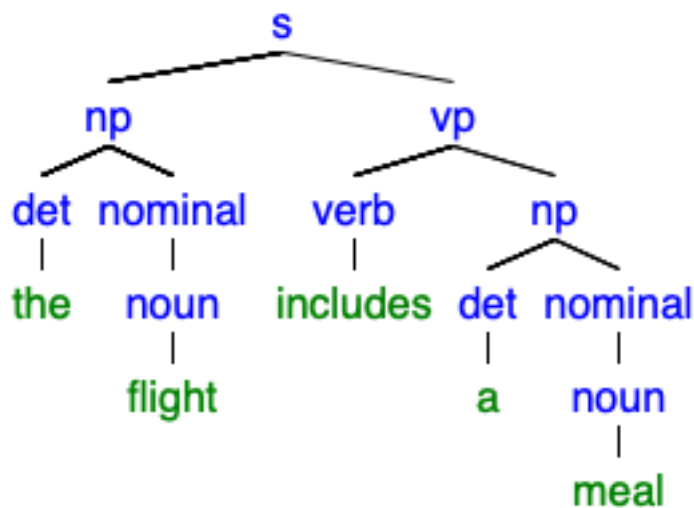
-----

Total prob of the sentence: 0.000002916 (2.9160008E-6)

Gold standard parse:



My parse (Precision: 1.0; Recall: 1.0):



Analysis:

My parse is the same as the gold standard. The probability of this sentence is 0.000002916 (2.9160008E-6).

**Book the flight through Houston:**

System output:

Sentence accepted: There are 3 possible parse(s).

parse: [s[vp[vp[verb book][np[det the][nominal[noun flight]]]][pp[preposition through][np[proper-noun houston]]]]]

precision: 0.75

recall: 0.8181818

prob: 0.000000109 (1.09350026E-7)

-----  
 parse: [s[vp[verb book][np[det the][nominal[noun flight]]][pp[preposition through][np[proper-noun houston]]]]]

precision: 0.8181818

recall: 0.8181818

prob: 0.000000365 (3.6450007E-7)

-----  
 parse: [s[vp[verb book][np[det the][nominal[nominal[noun flight]]][pp[preposition through][np[proper-noun houston]]]]]]]

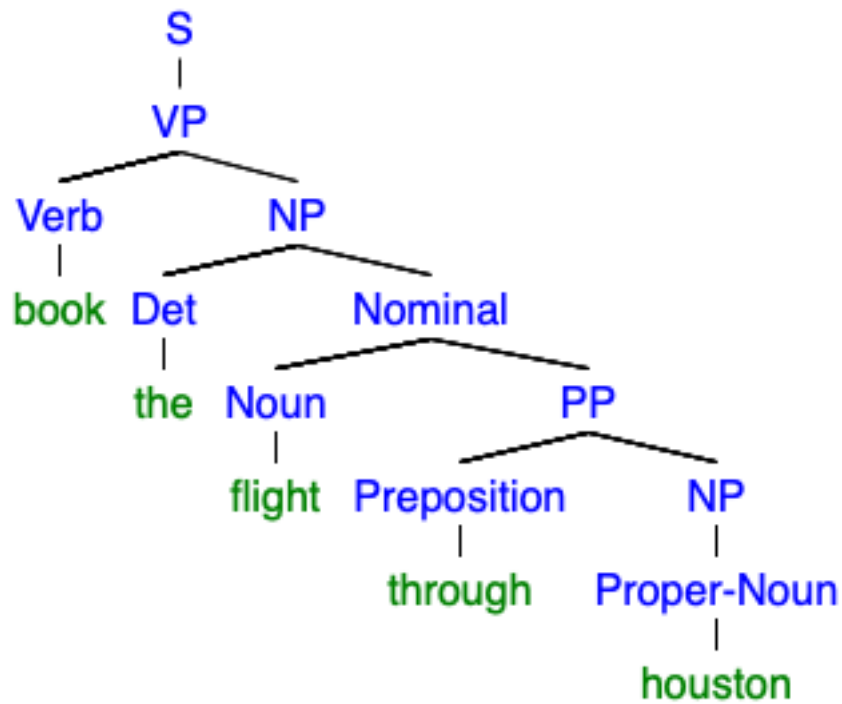
precision: 0.9166667

recall: 1.0

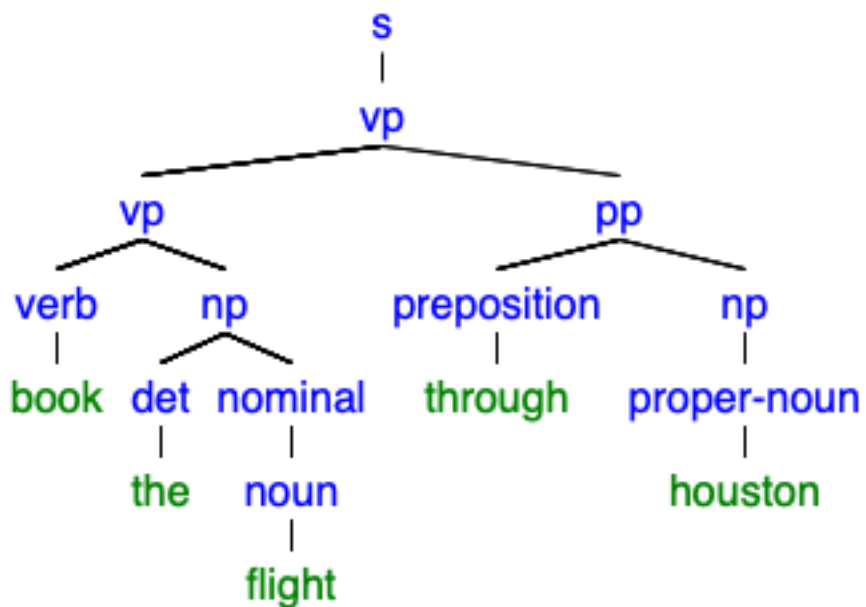
prob: 0.000000036 (3.645001E-8)

-----  
 Total prob of the sentence: 0.000000510 (5.103001E-7)

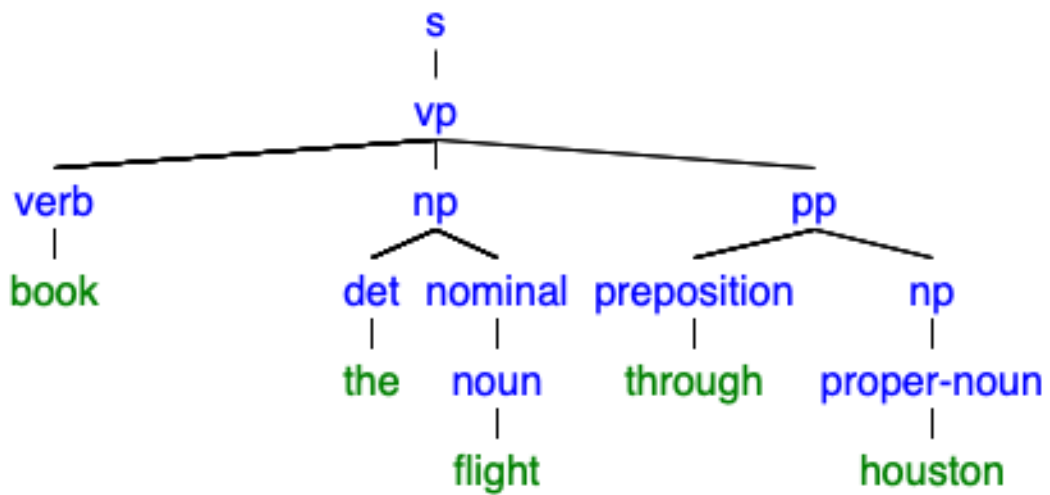
Gold standard parse:



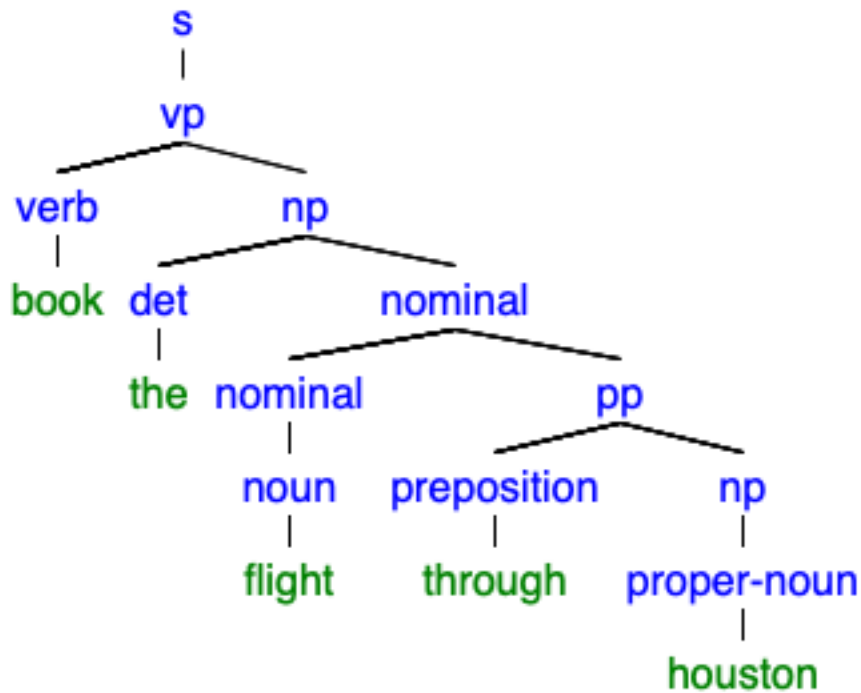
First parse (precision: 0.75; recall: 0.818):



Second parse (precision: 0.818; recall: 0.818):



Third parse (precision: 0.917; recall: 1.0):



Analysis:

In gold standard parse, Nominal -> Noun PP has been utilized. However, there is no such rule in pcfg.txt. But there is a similar rule: Nominal -> Nominal pp. This is the only difference between my third parse and the gold standard parse. The total probability of this sentence is 0.000000510 (5.103001E-7).