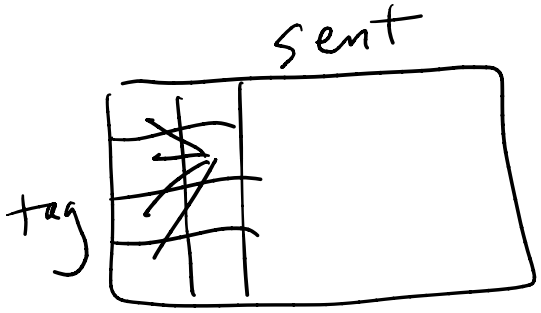
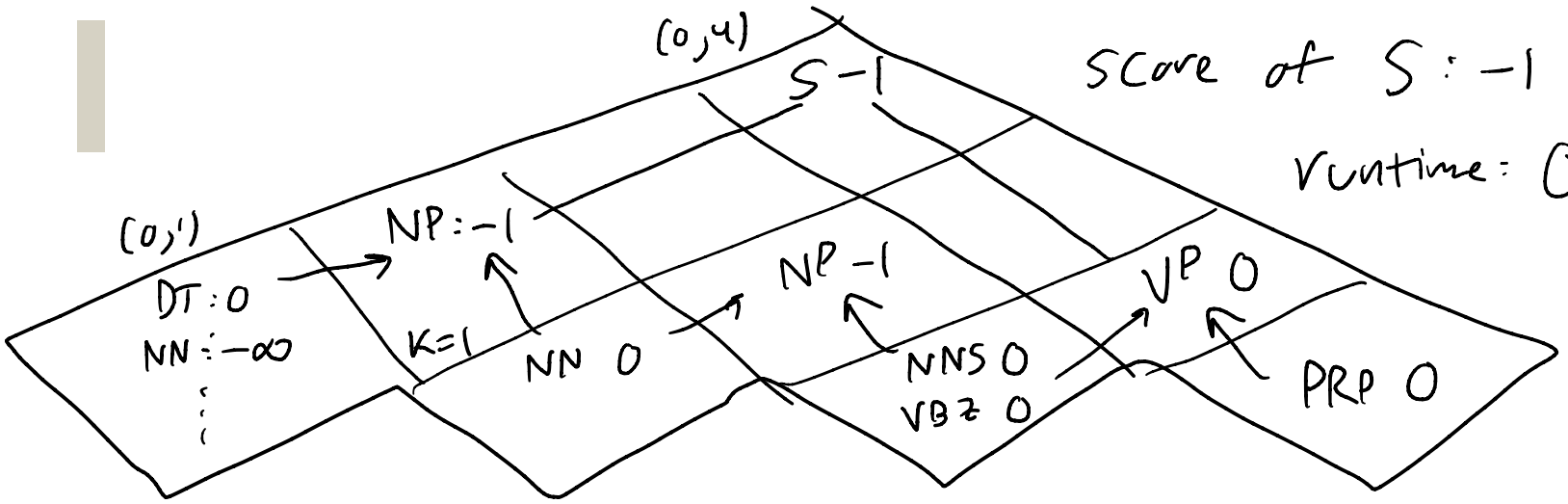
CKY Algorithm

$$\underset{T}{\operatorname{argmax}}\ P(T \mid \bar{x}) = \underset{T}{\operatorname{argmax}}\ P(T, \bar{x})$$

Viterbi





score of S: -1

runtime: $O(n^3 G)$

0 the 1 child 2 raises 3 it 4

Chart $t[i, j, X]$ score of the best derivation of X over span (i, j)

$\log(0.5) = -1$

$t[i, i+1, X] = \log P(w_i | X)$

$t[i, j, X] = \max_{i < k < j} \max_{r: X \to X_1 X_2}$

$\log P(X \to X_1 X_2) + t[i, k, X_1] + t[k, j, X_2]$

1.0 DT → the

1.0 NN → child

1.0 NNS → raises

1.0 VBZ → raises

1.0 PRP → it

1.0 S → NP VP

0.5 NP → DT NN

0.5 NP → NN NNS

1.0 VP → VBZ PRP