

# CKY: The Fundamental Rule

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## **Abstract**

The key part of any parsing algorithm.

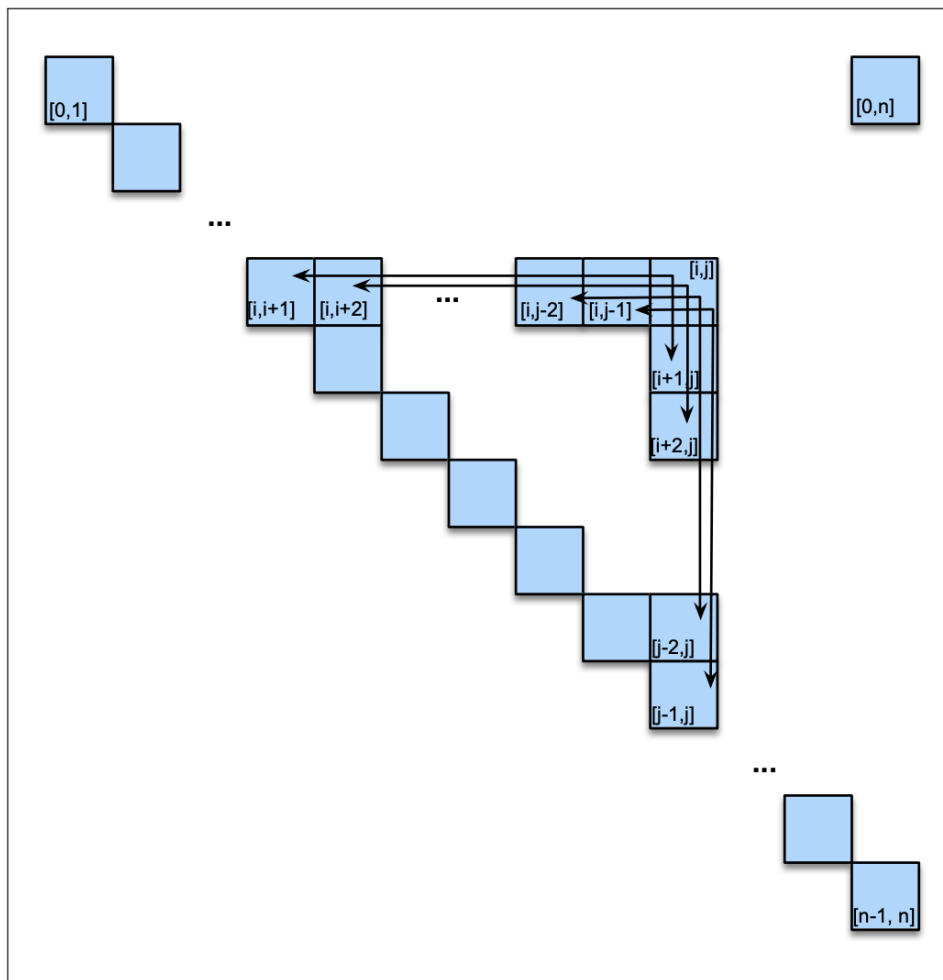
```

function CKY-PARSE(words, grammar) returns table

for j ← from 1 to LENGTH(words) do
  for all {A | A → words[j] ∈ grammar}
    table[j - 1, j] ← table[j - 1, j] ∪ A
  for i ← from j - 2 downto 0 do
    for k ← i + 1 to j - 1 do
      for all {A | A → BC ∈ grammar and B ∈ table[i, k] and C ∈ table[k, j]}
        table[i, j] ← table[i, j] ∪ A

```

**Figure 12.5** The CKY algorithm.



**Figure 12.6** All the ways to fill the  $[i, j]$ th cell in the CKY table.

