

Bottom-Up Chart Parser

General:

- Start construction of chart by filling in word categories
- Proceed left to right through the sentence
- Enumerate rule applications below chart, moving down as parsing progresses
- Place complete sentence components (items on the left hand side of the rules) above chart, moving up as parsing progresses

For each new word:

- 1) Generate new rule enumerations for all rules that have a right-hand side that begins with this word category
- 2) Extend any previous partial parses whose next component can now be completed
- 3) Enumerate any new rules that start with any completed components

As you proceed with above 3 steps, place new completed components into the chart

Parsing with a recursive transition net

Case 1: If arc names a *word category* and next word in sentence is in that category,

Then (1) update *current position* to start at the next word
(2) Update *current node* to the destination of the arc

Case 2: If arc is a *push arc* to a network N,

Then (1) add the destination of the arc onto *return points*
(2) Update *current node* to the starting node in network N

Case 3: If arc is a *pop arc* and return points list is not empty,

Then (1) remove first return point and make it *current node*

Case 4: If arc is a *pop arc*, return points list is empty and there are no words left

Then parse completes successfully