Comments to the Naive Rete python code

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WME = working memory element.

Alpha network: performs the “decision tree” tests.

Alpha memory = AM. Store sets of WMEs, ie, *instantiations*.

Beta network: checks consistency of **variable bindings** between conditions.

Beta memories store sets of **tokens**, each token representing a sequence of WMEs — specifically, a sequence of k WMEs, satisfying the first k conditions (with consistent variable bindings) of some production.

Production node = **p-node** = firing of an action.

ncc = negated conjunctive conditions. Tests for the absence of a certain combination of WMEs.

Activation means passing a new WME down the rete network.

Left activation = activation of some node from another node in the **beta** network

Right activation = activation of some node from the **alpha** network

Tokens = conjunctions of WMEs. It’s stored as a tree with each node holding 1 new WME and its parent.

Token has **join_results** which is specifically for *negative* nodes. Negative nodes are just like ordinary join nodes, but instead of propagating the results of the join down the network, it stores them in the “results” memory in each token. A token is thus propagated down the network if and only if its local result memory is *empty*, since this indicates the absence of any such WME in working memory.

The **join_results** store NegativeJoinResults. Each NJR has a WME and its owner which is a token.

WMEs also have a field to store NJRs. This is for handling WME *removal*.

1 Bug re: remove(x) but x not in list

Seems that wme.negative_join_results does not contain enough NJRs for removal. The fix is “pop()”.

2 Bug re ncc_results: token.owner = None

token.node = NCC Partner node

token.owner = None { the token whose local memory this result resides }

Solution: condition “else” not handled correctly in NCC partner left-activation.

3 Bug: child.amem.successors.remove(child), child not in list

Currently solution is to comment out this part of the code. (For some unknown reason this part is not implemented by the NaiveRete author).

4 Fixing the within-condition variable-binding problem

Starts with:

```
self.alpha_root.activation(wme)
```

(1)

in `network.py`.