

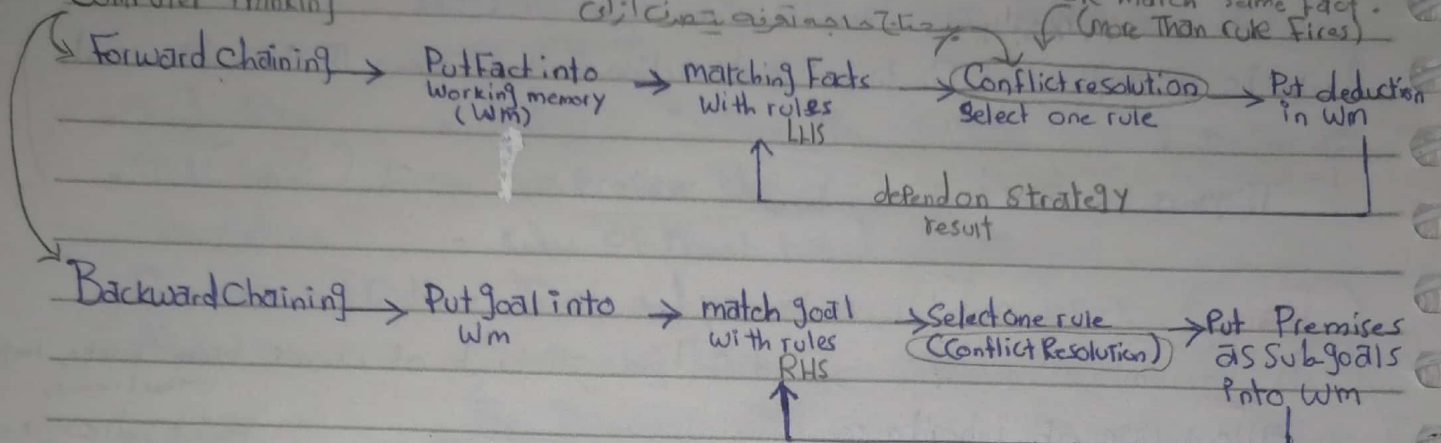
imp → Clips → Strategies (Build-in rules To Conflict Resolution) ✓

## Conflict Resolution

Computer Thinking

Conflict Resolution

happen when more than one rule match same fact.  
(more than rule fires)



→ What to do if there is more than 1 matching rule in each inference cycle?  
To do / Solve Conflict Resolution

- Conflict Set - Set of rules which match the working memory content in each inference cycle (in agenda)
- Type of rules = deterministic non-deterministic

<u>False</u>	at most 1 rule matched	more than 1 matching rule → <u>(Conflict Resolution)</u> ✓ Inference engine must select one rule
0 rule matched		

→ agenda = is the list of all rules which have their conditions satisfied

→ agenda operate as a stack  
(Top rule on the agenda is the first one to be executed).  
→ LIFO

Salience = Priority in Clips

Top (higher Salience)

If have more than one equal Salience → Conflict Resolution

→ When a rule is newly activated, its placement on the agenda is based on Factors:

- Placed above all rules of lower Salience & below all rules of higher Salience
- Among rules of equal Salience, Conflict Resolution used to determine the placement
- If a rule is activated → by assertion or retraction of a fact then the rule is arbitrarily (not randomly) ordered

11 strategy but

→ 7 Strategies in Clips. → The default is (depth)

(Set-Strategy name of Strategy)

ex: breath

→ Command which will reorder the agenda based on the new Strategy

## 1) Depth

newly activated rules are placed above all rules of the same salience

Ex: Fact a → activates rule 1,2, Fact b → activates rule 3,4  
a assert before b

rule 3,4 above rule 1,2 on the agenda

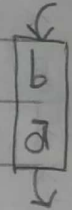


## 2) Breath

newly activated rules are placed below all rules of the same salience

Ex: Same

rule 1,2 above rule 3,4 on the agenda



3) Simplicity Among rules of the same salience, newly activated rules are placed above all activations of rules with equal or higher Specificity

higher → execute

equal → depth

4) Complexity Among rules of the same salience,

newly activated rules are placed above all activations of rules with equal or lower Specificity

## 5) LEX

- every Fact & instance is marked internally with a Time tag. (The activation with the greater Time is placed before on the agenda).
- recency (rules that use recently added data) of the Pattern entities  
→ highest Priority
- IF 2 activation have exact same recency. The activation with the higher Specificity priority is placed above the lower.



## 6) MEA (Means-Ends Analysis)

- First The Time Tag of The Pattern entity associated with the First Pattern is used To determine Where To Place The activation.
- The activation of the First Pattern Time Tag With greater is placed before
- IF activation have the Same Time Tag associated with the First Pattern Then The LEX strategy is used.

## 7) Random

- Each activation is assigned with Random number (based on index) is used To determine its Placement among activations of equal Salience

→ All Strategies has a Feedback to make sure There is no Conflict

Which Strategy is Faster?

Compare between The Following Strategies In clips according To your Case study

- Simplicity, Complexity, LEX, Random