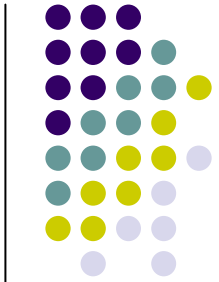
Conflict Driven Learning and Non-chronological Backtracking



x1 + x4
x1 + x3' + x8'
x1 + x8 + x12
x2 + x11
x7' + x3' + x9
x7' + x8 + x9'
x7 + x8 + x10'
x7 + x10 + x12'

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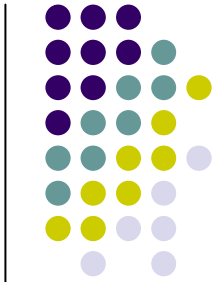
Conflict Driven Learning and Non-chronological Backtracking



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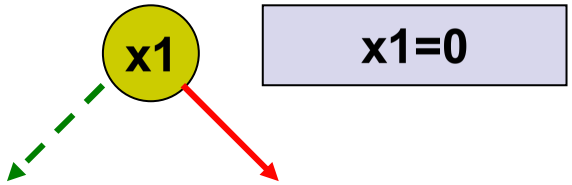
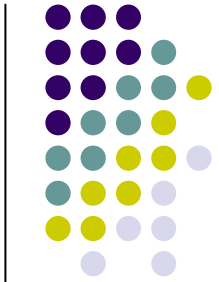


x1=0

Conflict Driven Learning and Non-chronological Backtracking



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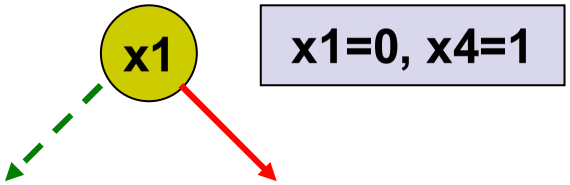
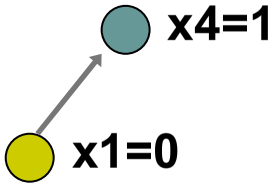
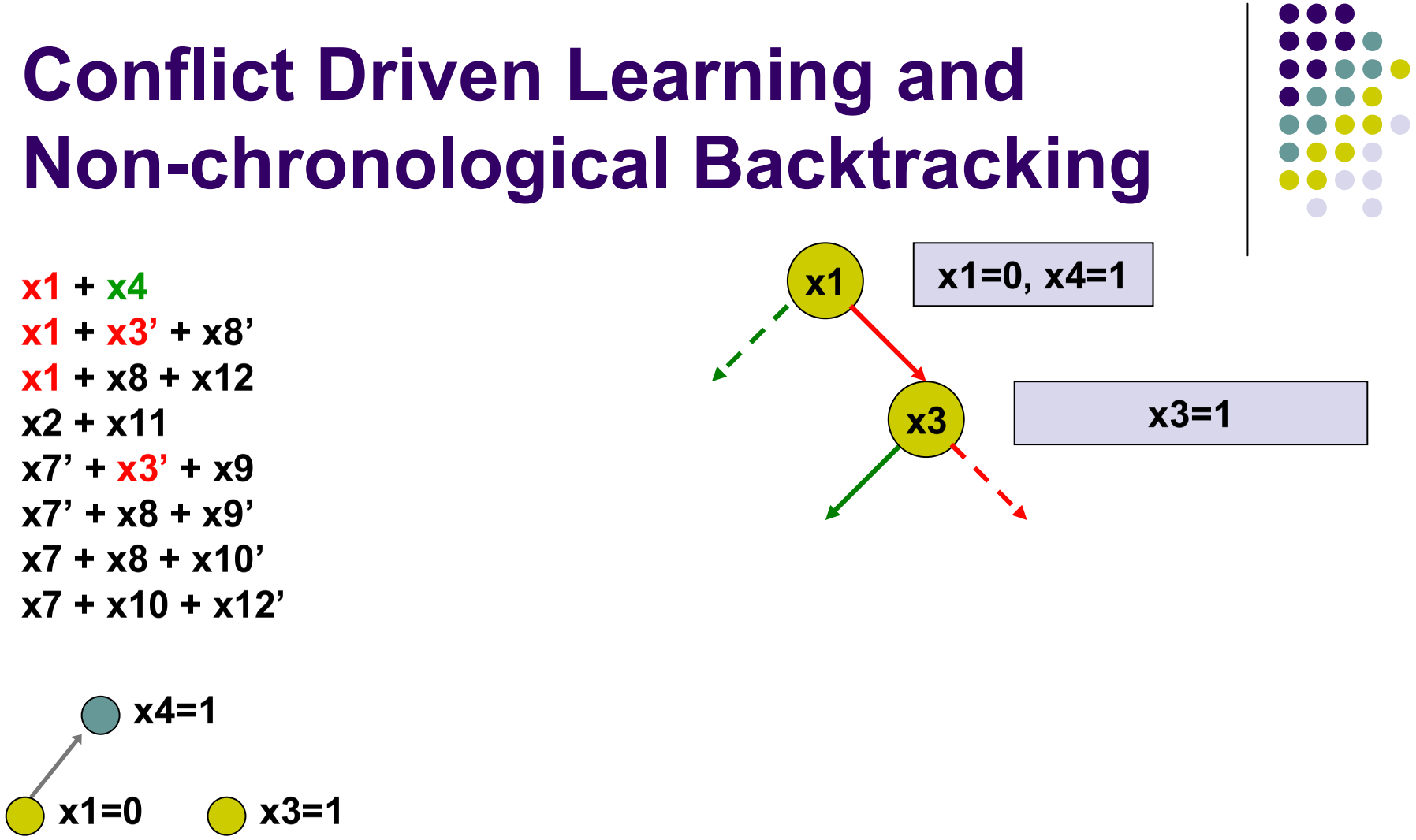




Conflict Driven Learning and Non-chronological Backtracking



Conflict Driven Learning and Non-chronological Backtracking

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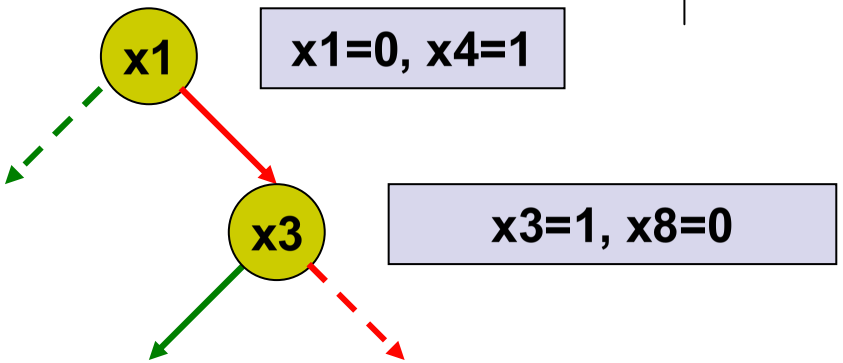

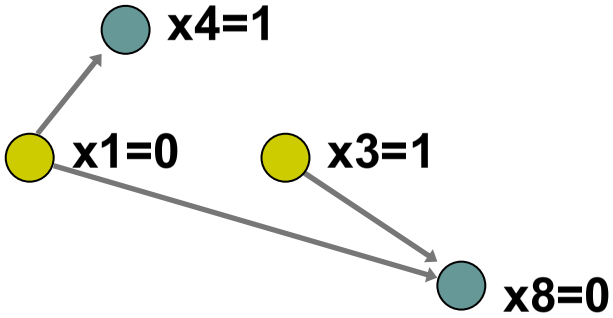

Conflict Driven Learning and Non-chronological Backtracking

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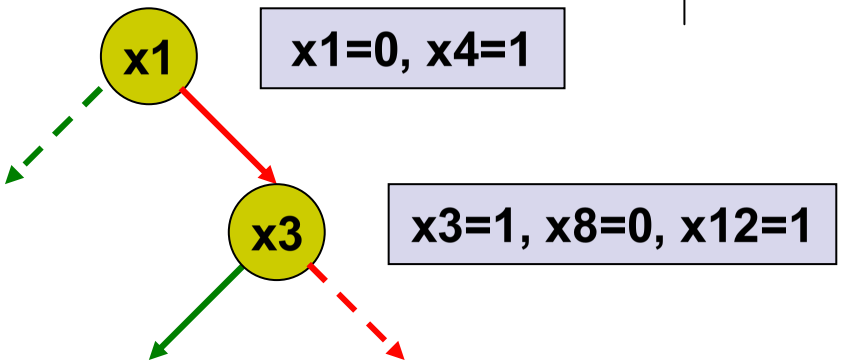

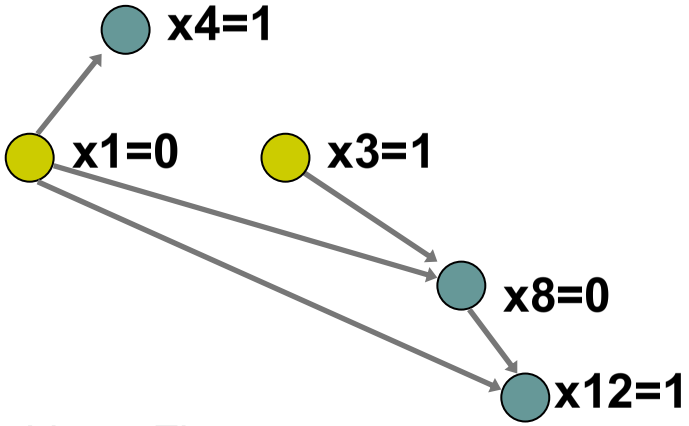

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Conflict Driven Learning and Non-chronological Backtracking

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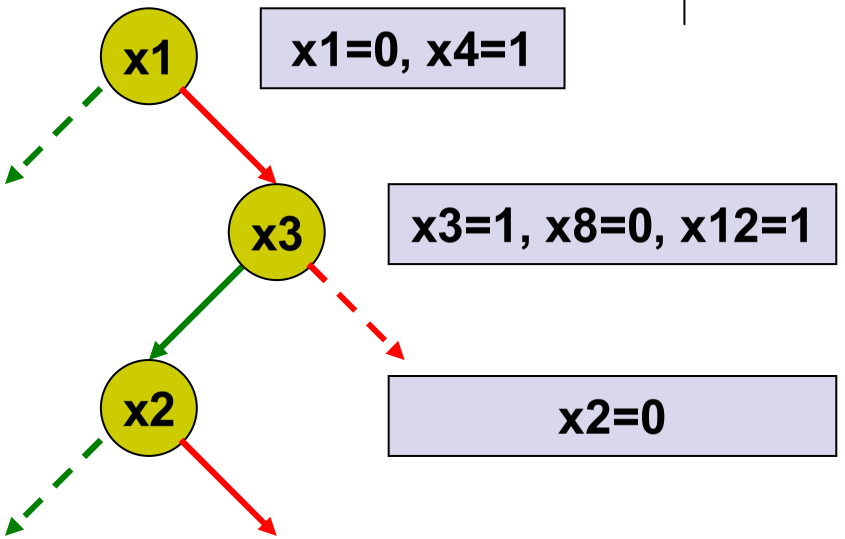

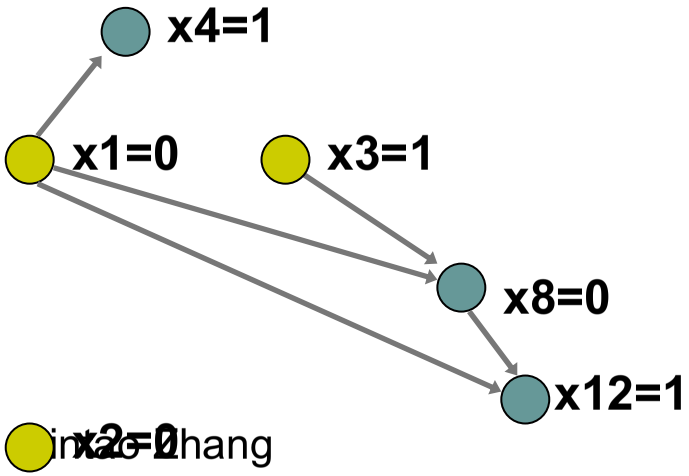

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Conflict Driven Learning and Non-chronological Backtracking

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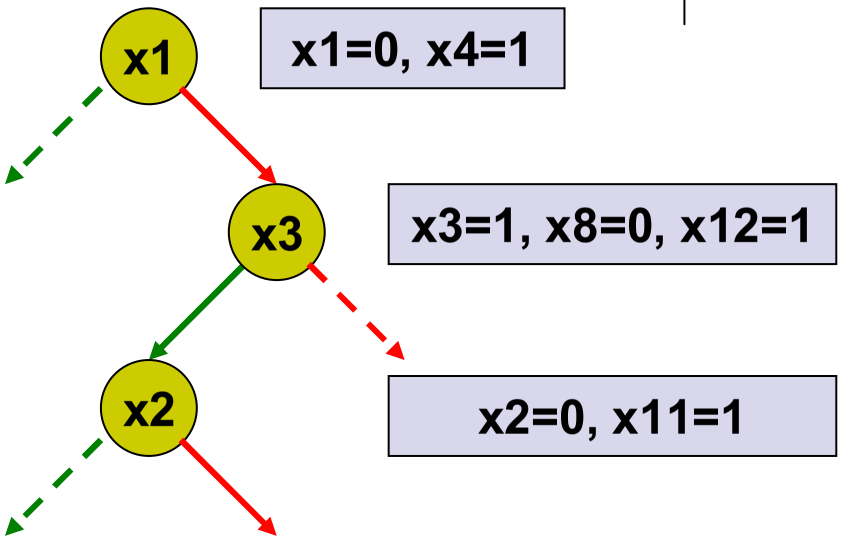

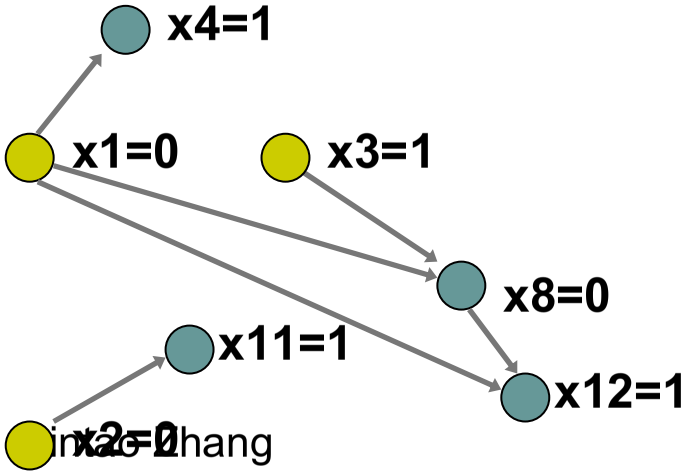

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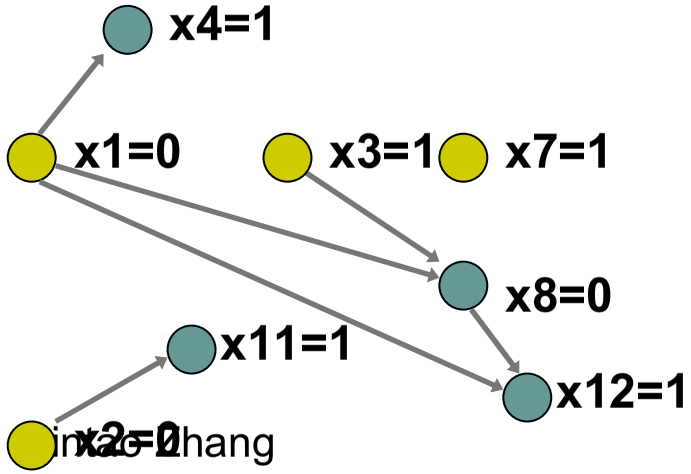

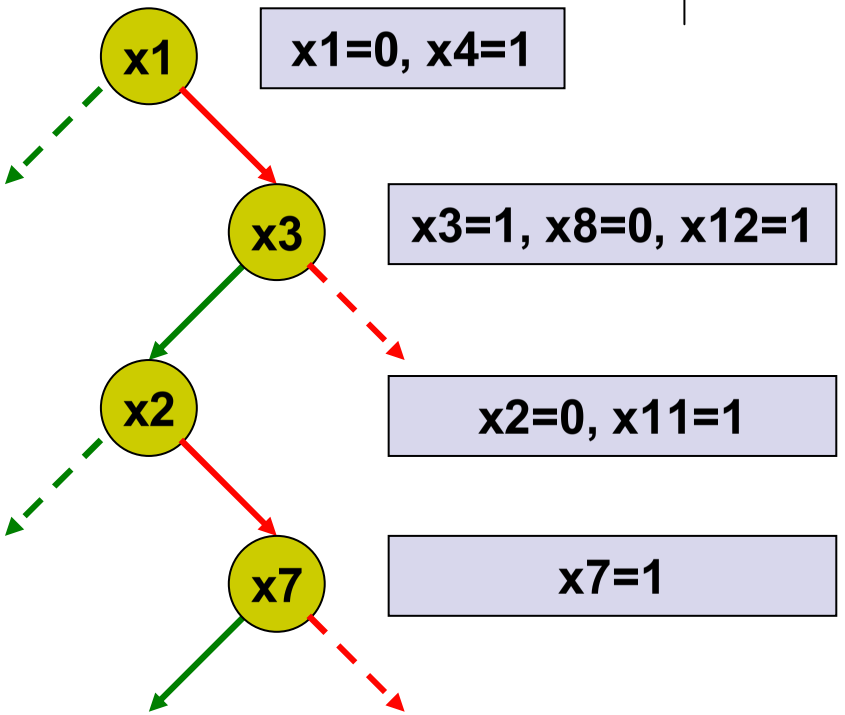

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Conflict Driven Learning and Non-chronological Backtracking

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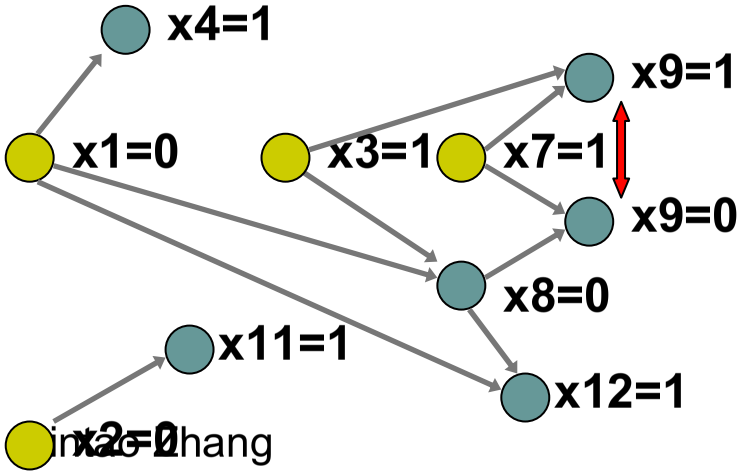

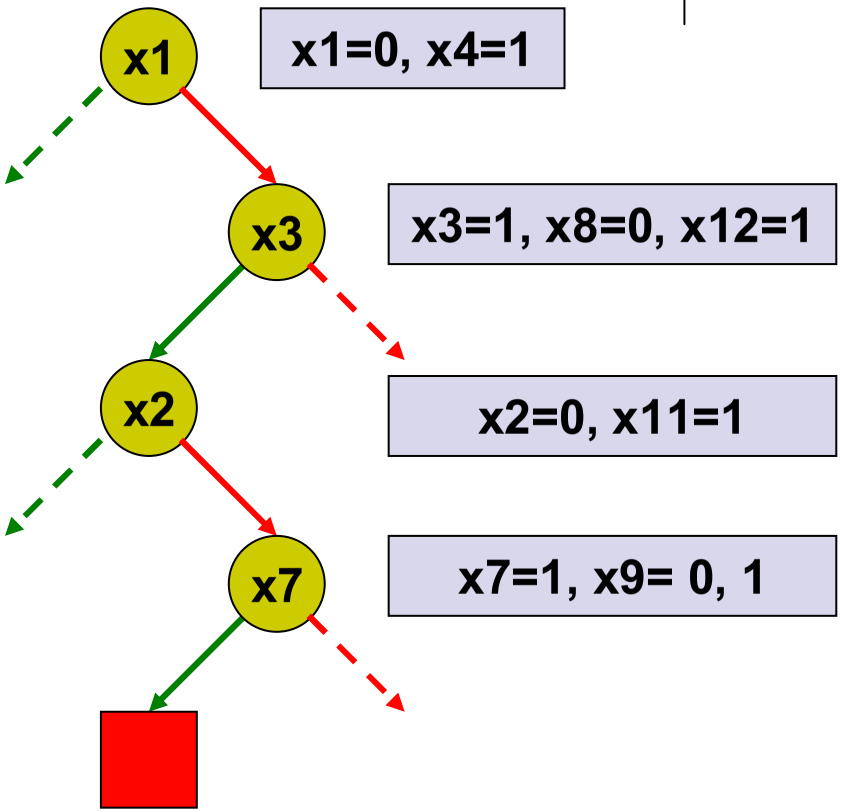

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Conflict Driven Learning and Non-chronological Backtracking

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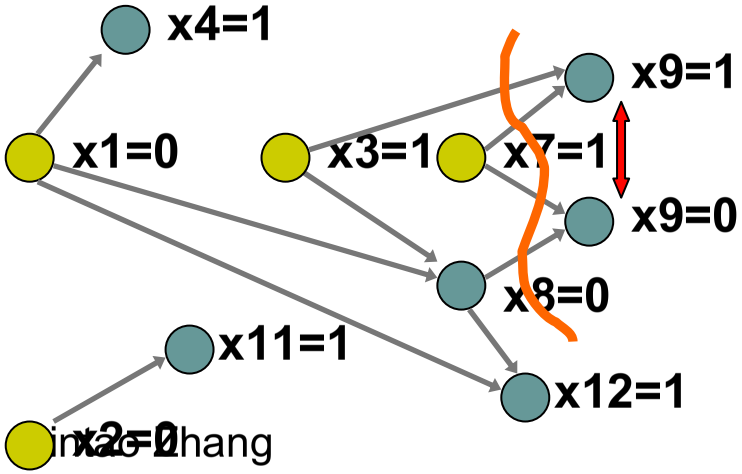

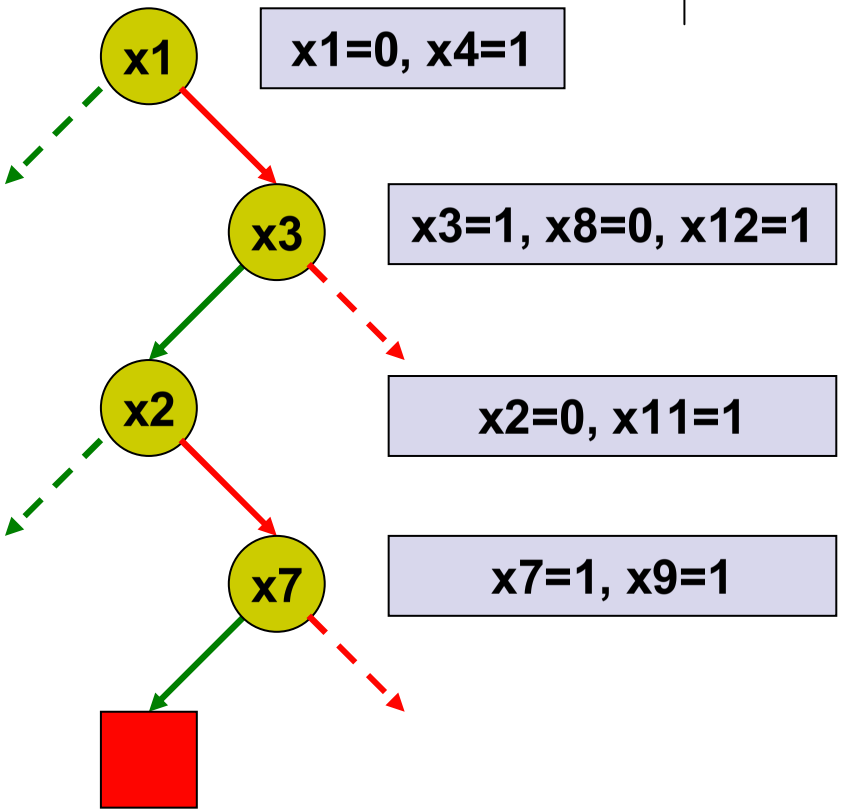

x3=1∧x7=1∧x8=0 → conflict

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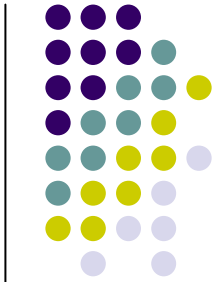
Contra-proposition:



- If a implies b, then b' implies a'

$$x3=1 \wedge x7=1 \wedge x8=0 \rightarrow \text{conflict}$$

$$\text{Not conflict} \rightarrow (x3=1 \wedge x7=1 \wedge x8=0)'$$

$$\text{true} \rightarrow (x3=1 \wedge x7=1 \wedge x8=0)'$$

$$(x3=1 \wedge x7=1 \wedge x8=0)'$$

$$(x3' + x7' + x8)$$

Conflict Driven Learning and Non-chronological Backtracking

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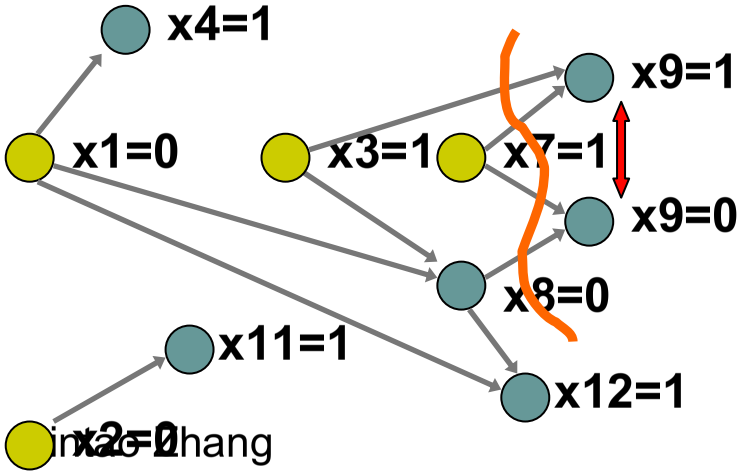
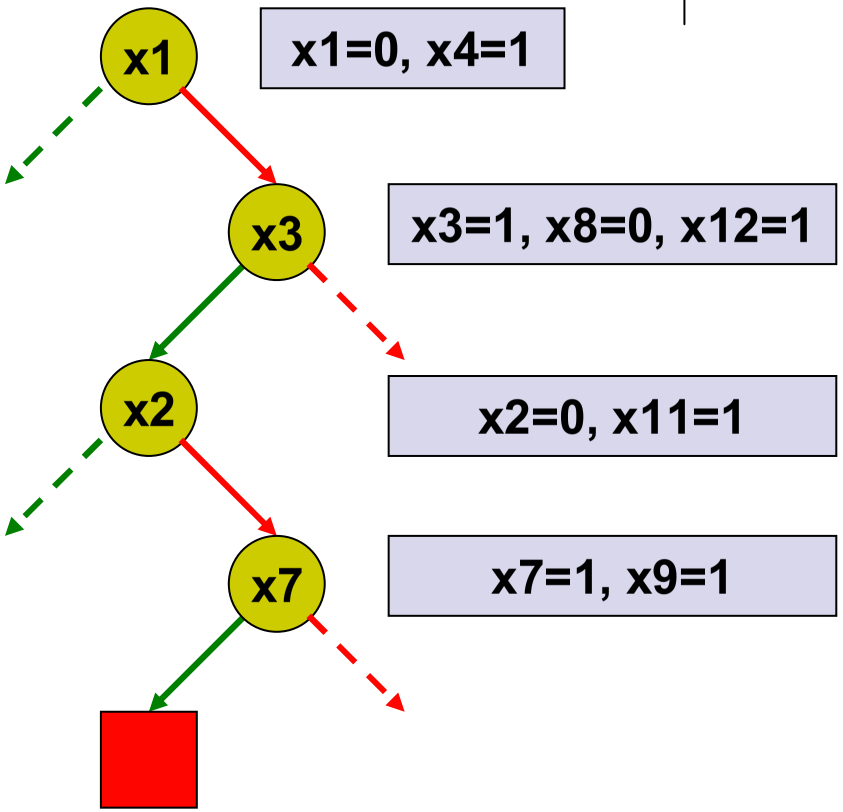
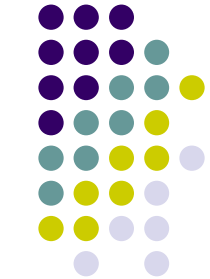




x3=1∧x7=1∧x8=0 → conflict

Add conflict clause: x3'+x7'+x8

Conflict Driven Learning and Non-chronological Backtracking



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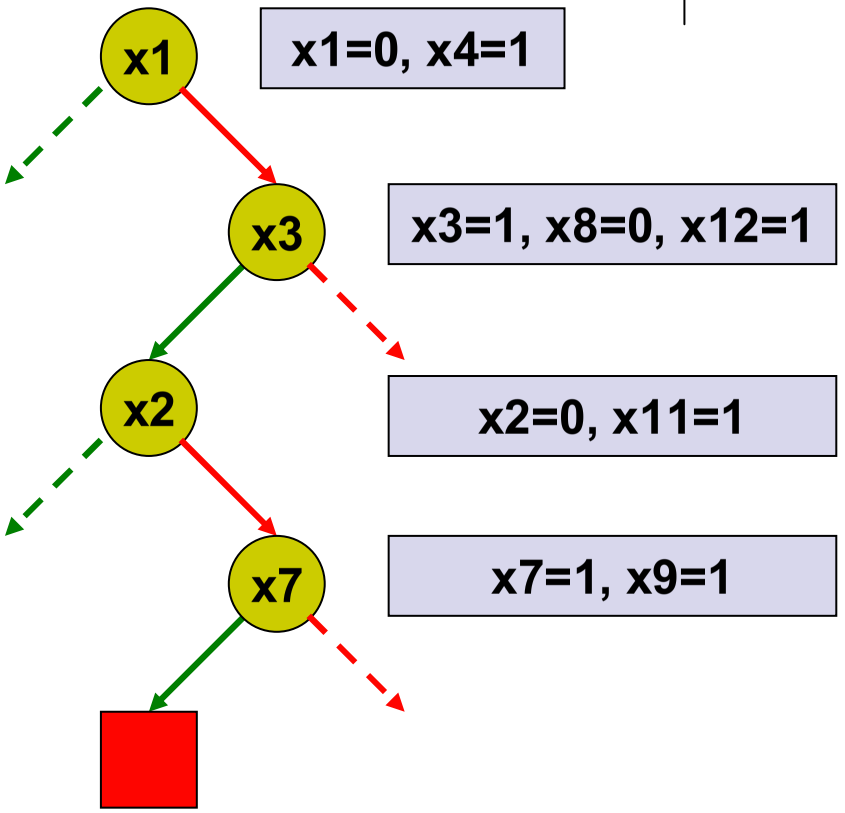
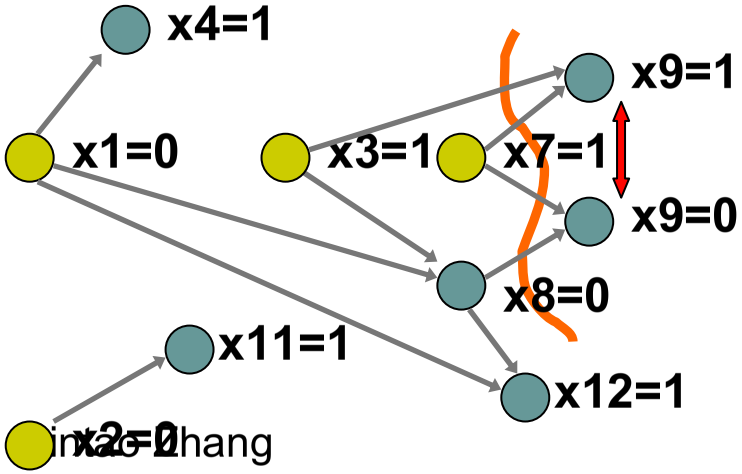
x7' + x3' + x9
x7' + x8 + x9'
x7 + x8 + x10'
x7 + x10 + x12'

x3'+x7'+x8





x3=1∧x7=1∧x8=0 → conflict

Add conflict clause: x3'+x7'+x8

DLL with Non-Chronological Backtracking and Learning

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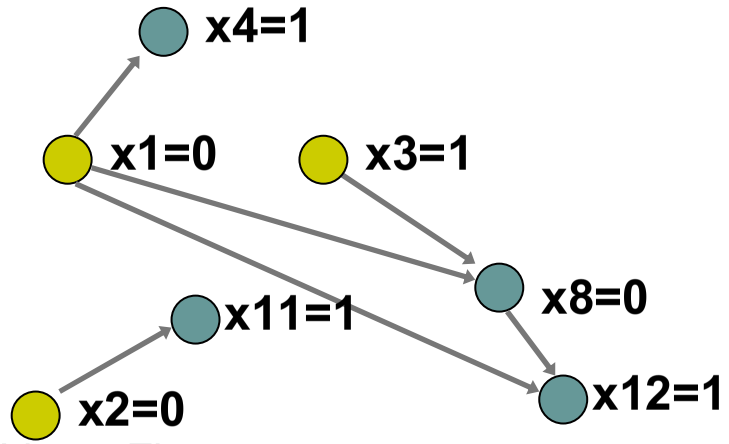
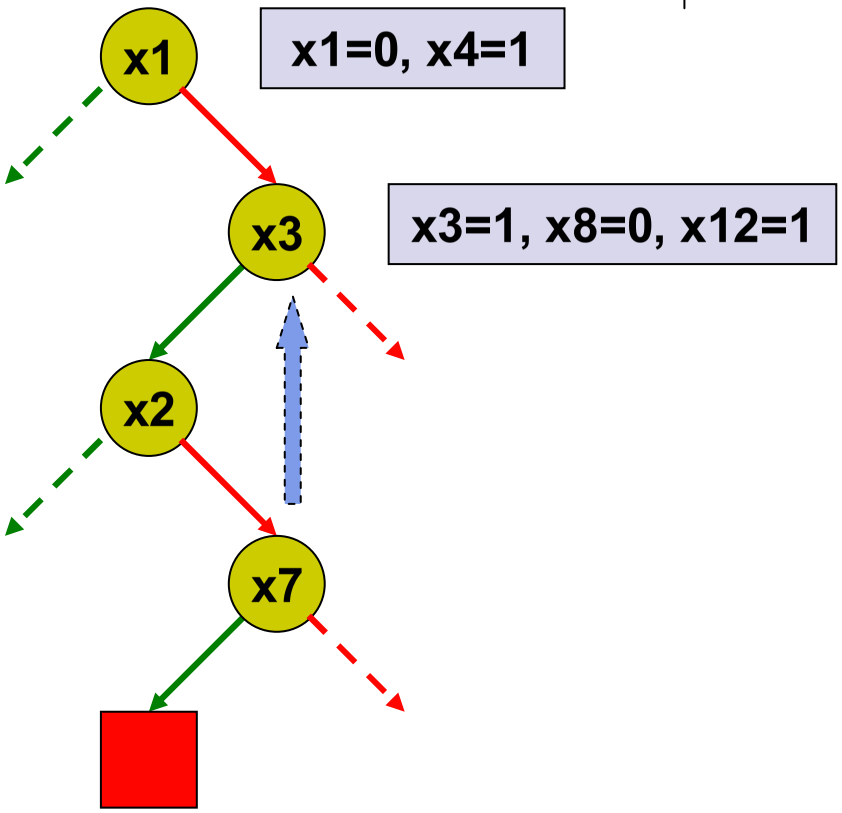
x7 + x10 + x12'
x3' + x8 + x7'





Backtrack to the decision level of x3=1:
x7 = 0

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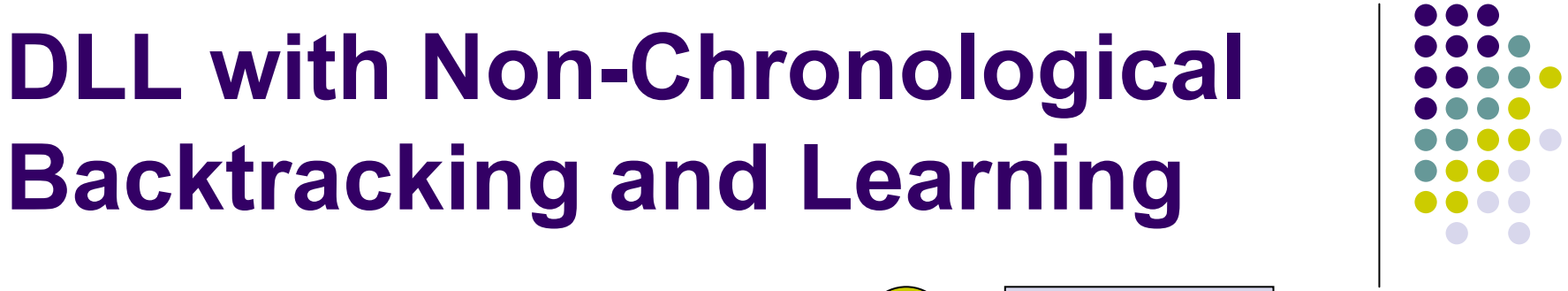
DLL with Non-Chronological Backtracking and Learning



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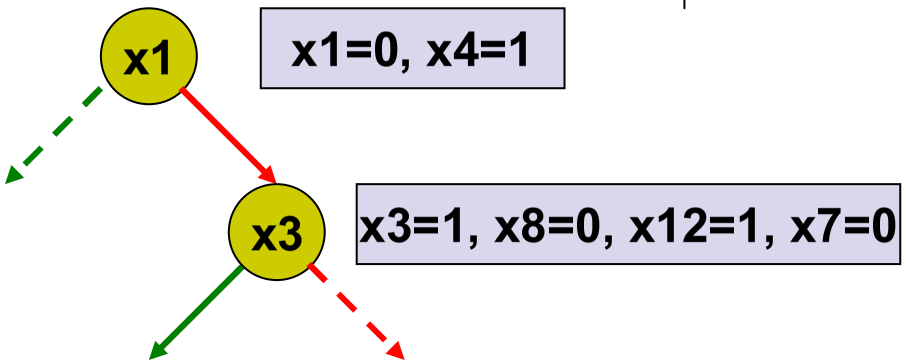

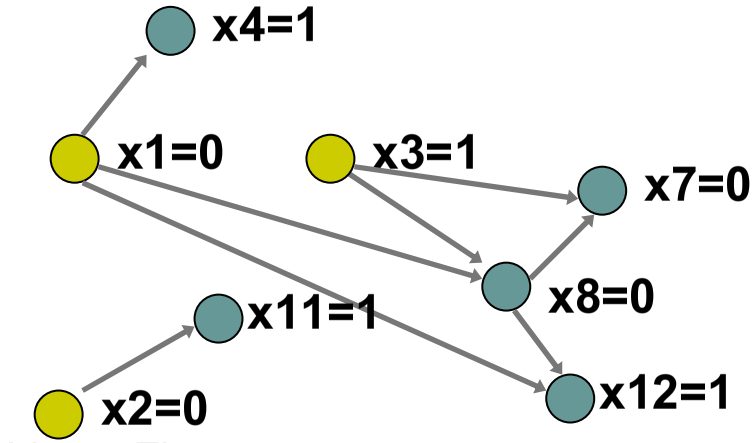

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