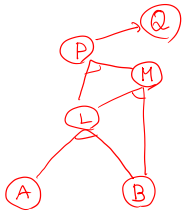
Forward chaining

- Idea: fire any rule whose premises are satisfied in the KB, add its conclusion to the KB, until query is found
- Goal: Q? True / False

$P \Rightarrow Q$
$L \wedge M \Rightarrow P$
$B \wedge L \Rightarrow M$
$A \wedge P \Rightarrow L$
$A \wedge B \Rightarrow L$
A — True
B — True



27

27

Backward chaining

- Idea: work backwards from the query q:
  - to prove q by BC,
    - check if q is known already, or
    - prove by BC all premises of some rule concluding q
- Avoid loops: check if new subgoal is already on the goal stack
- Avoid repeated work: check if new subgoal
  - 1) has already been proved true, or
  - 2) has already failed

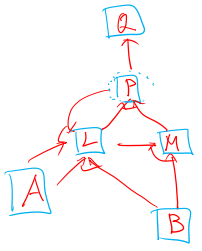
28

28

Backward chaining example

- Goal: Q?

goal or subgoal
true if premises are true
true



$P \Rightarrow Q$
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29

29