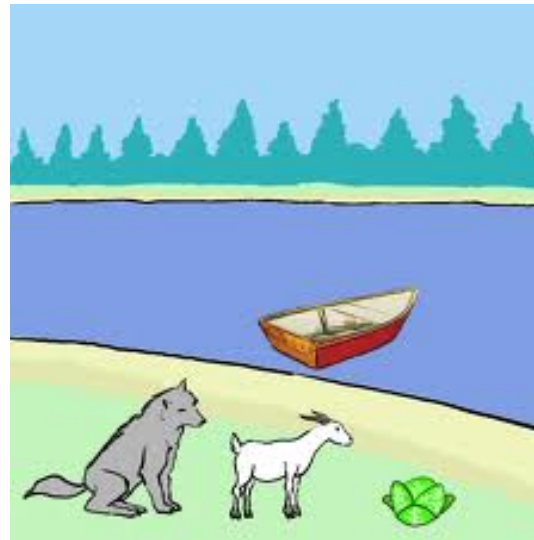




Search: modeling



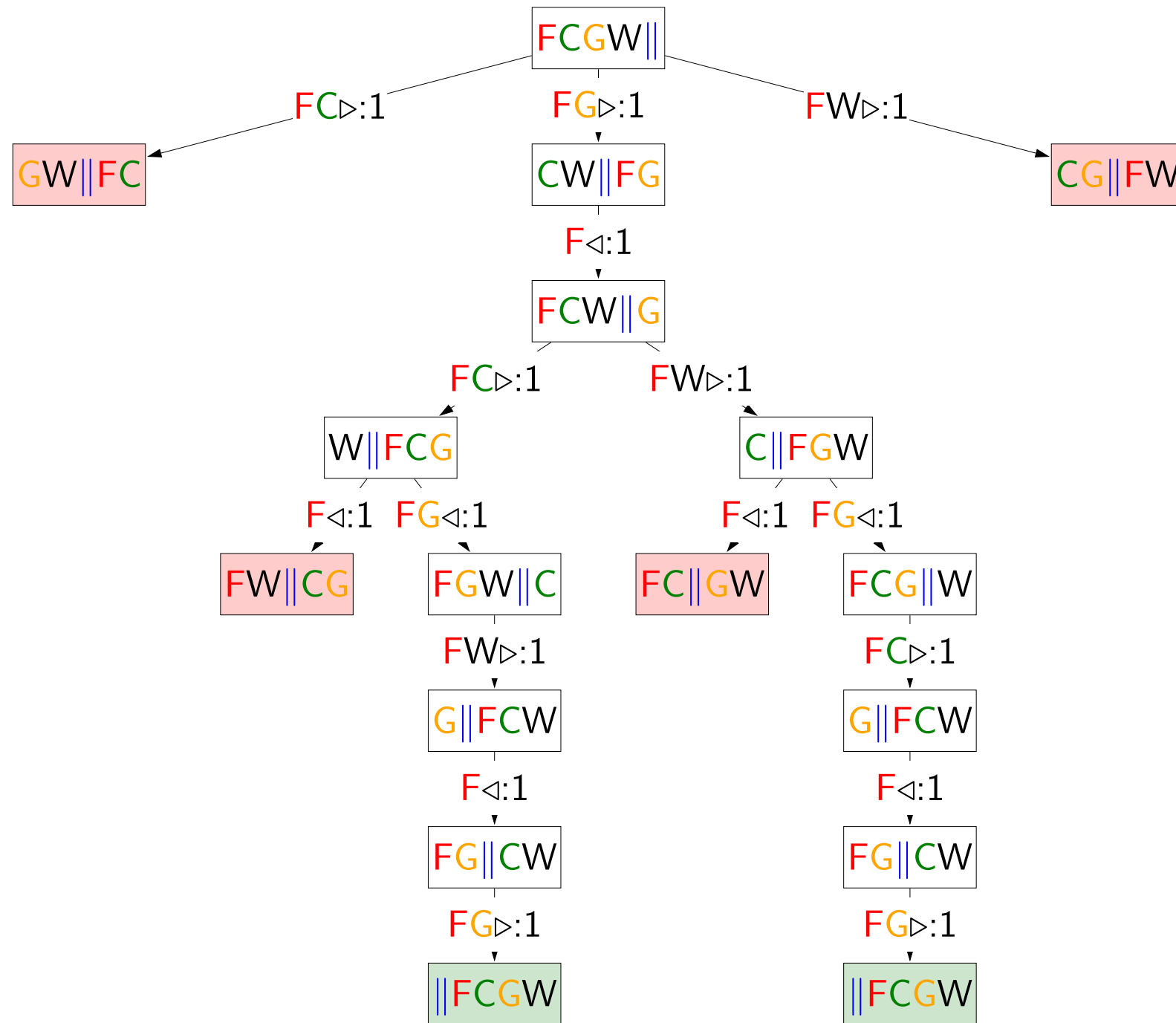


Farmer Cabbage Goat Wolf

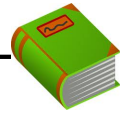
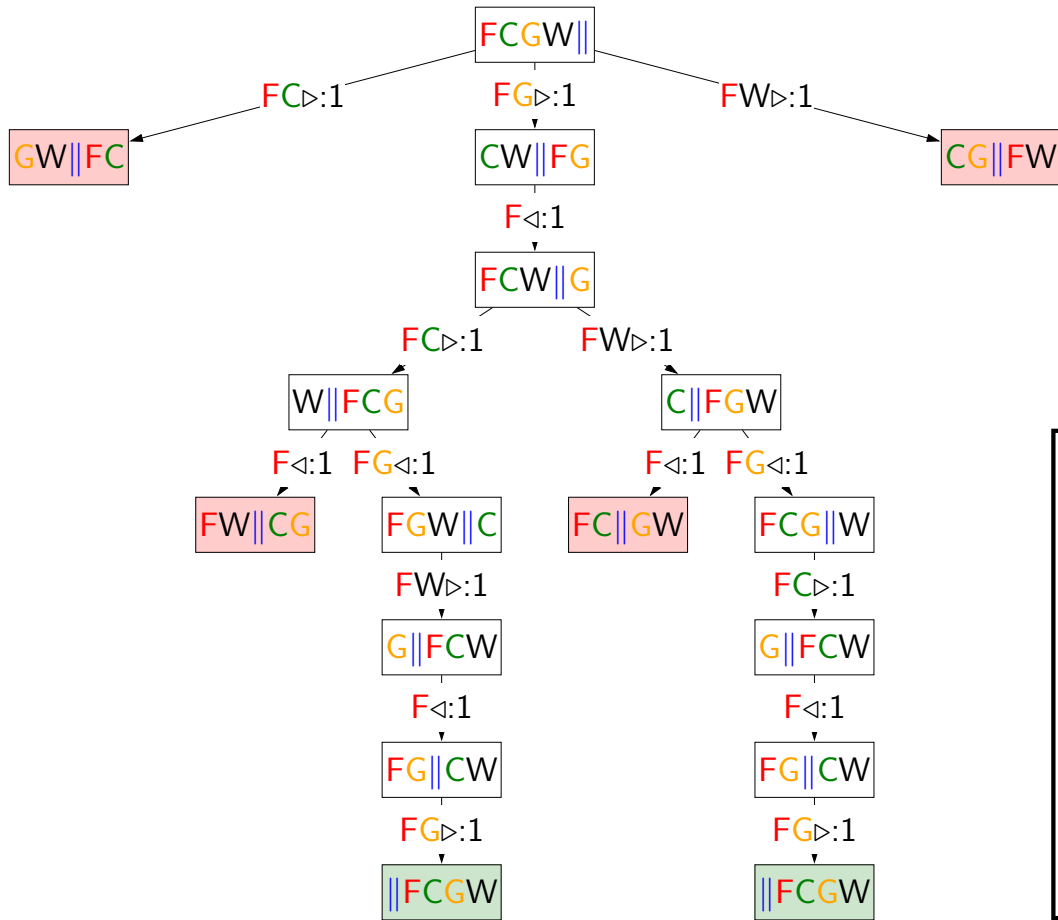
Actions:

F▷	F◁
FC▷	FC◁
FG▷	FG◁
FW▷	FW◁

Approach: build a **search tree** ("what if?")



Search problem



Definition: search problem

- s_{start} : starting state
- $\text{Actions}(s)$: possible actions
- $\text{Cost}(s, a)$: action cost
- $\text{Succ}(s, a)$: successor
- $\text{IsEnd}(s)$: reached end state?



Transportation example



Example: transportation

Street with blocks numbered 1 to n .

Walking from s to $s + 1$ takes 1 minute.

Taking a magic tram from s to $2s$ takes 2 minutes.

How to travel from 1 to n in the least time?

[semi-live solution: `TransportationProblem`]