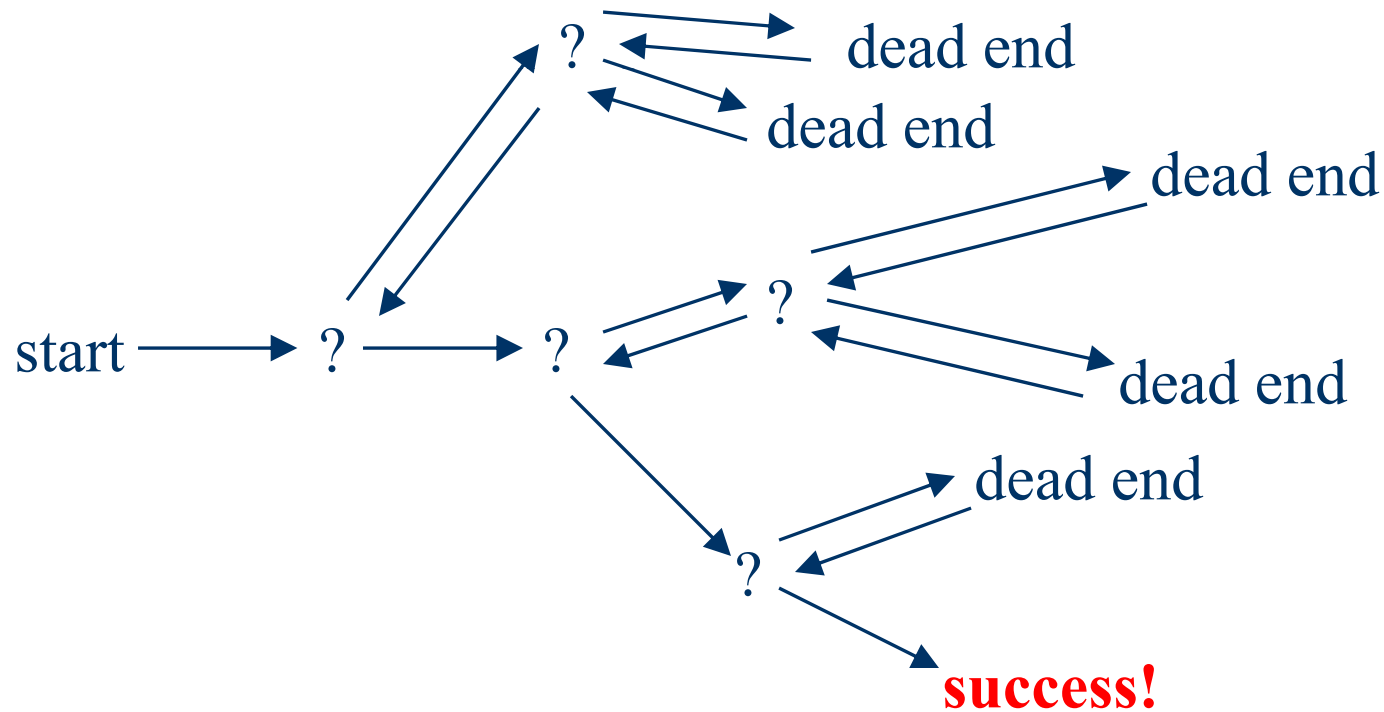


Backtracking

- Suppose you have to make a series of *decisions*, among various *choices*, where
 - You don't have enough information to know what to choose
 - Each decision leads to a new set of choices
 - Some sequence of choices (possibly more than one) may be a solution to your problem

Backtracking: Animation

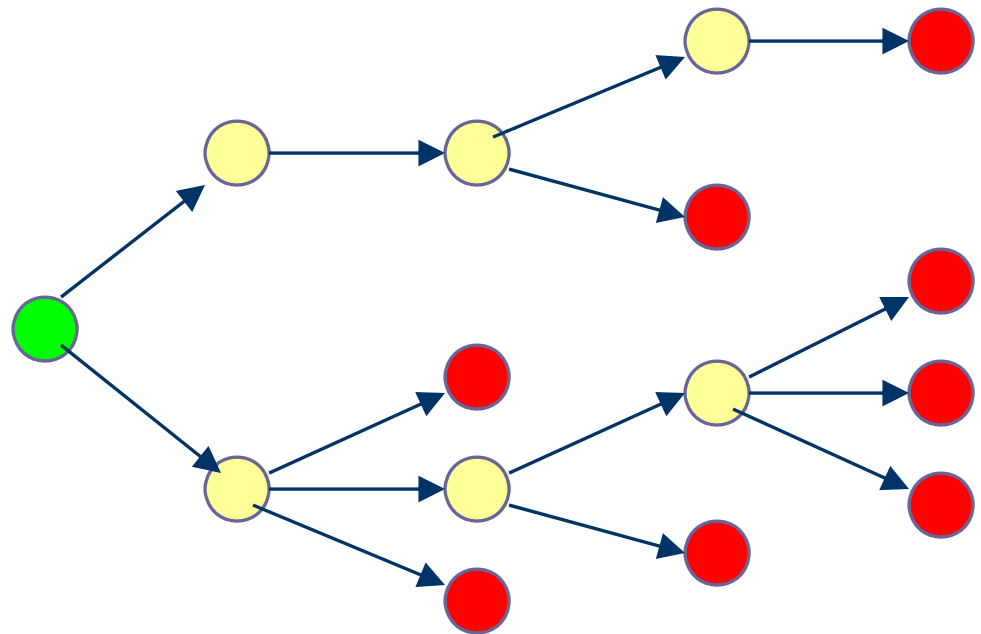


Paris

Backtracking: Terminology

Three kinds of nodes in a tree :

- One root node
- Internal nodes
- Leaf nodes



Backtracking can be thought of as searching a tree for a particular “goal” leaf node

Backtracking: Algorithm

- Explore each node **N**, as follows:
 1. If N is a goal node, return “success”
 2. If N is a leaf node, return “failure”
 3. For each child C of N,
 - 3.1. Explore C
 - 3.1.1. If C was successful, return “success”
 4. Return “failure”



Thank You



Stay Safe