

Backtracking

- Read section 12.1 (pages 423-430)
- What is the **state-space tree**? what do its nodes reflect? What about the leaves?
- Which nodes are called ****promising***, and which are called **nonpromising**?
- What does the state-space tree look like for the Hamiltonian circuit problem?
 - How can we know at each step in the Hamiltonian circuit state-space tree what options we should have available and whether we are done?
- What does the state-space tree look like for the subset-sum problem?
 - How does does ordering the set's elements in increasing order benefit the algorithm?
 - What are the two conditions that allow us to stop examining a particular node in the tree?
 - Does the sum $\sigma_{j=i+1}^n a_j$ need to be computed at each node?
- Describe in words the overall process for the backtracking algorithm.
- How can we use backtracking to solve the k -coloring problem?
- Practice problems: 12.1.5, 12.1.6