

## Homework 4

CS 540  
Spring 1990  
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Prepare a coherent and concise set of notes summarizing the following subsections of section 10.9 in Aho, Sethi, and Ullman:

- Depth-first search
- Edges in a depth-first presentation of a flow graph

The notes should include the following definitions pertaining to flow graphs which satisfy the reachability assumption:

- Depth-first order of nodes
- Depth-first spanning tree
- Tree edge
- Retreating edge
- Advancing edge
- Cross edge

Your definition of depth-first order and spanning tree should resolve the question of their uniqueness for a given flow graph. The notes should not include any theorems involving these definitions, even if they are mentioned in section 10.9. The notes will be graded holistically for each of the following qualities:

- Mathematical precision and completeness
- Complete and grammatically correct sentences without misspellings
- Conciseness
- Overall Appearance