**Chapter 17: Unusual Control Structures**

**Multiple Returns from a Routine**

* Use a return when it enhances readability
* Once you know the answer want to return it immediately
* Use guarded clauses
  + (early returns or exits)
  + These simplify complex error processing
  + Instead of nesting error conditions, have each in line then exit upon failure
* Want to minimize the number of returns in each routine

**Recursion**

* Recursion isn’t useful often
* However, when used judiciously, it produces elegant solutions
* Problem size
  + Small
    - Simple, elegant solutions
  + Slightly larger problems
    - Simple, elegant, hard to understand solutions
  + Most problems
    - Massively complicated solutions
    - Just use simple iterations

Tips for Using Recursion

* Make sure the recursion stops
* Use safety counters to prevent infinite recursion
* Limit recursion to one routine
  + Cyclic recursion where A calls B and C calls A is hard to detect
  + Also hard to keep in brain memory
* Anything that can be cone recursively can be done non recursively that is easier to understand