Chapter 8 - Debugging Prolog Programs

* Laying out Programs
  + Procedure- collection of clauses for a given predicate
* Common Errors
  + Errors of syntax
    - Ex. forgetting to add a dot at the end of clause, using wrong bracket pairs, etc.
  + Errors of control flow
  + Fallacy- when Prolog searches the database to match a goal against something in the database, the match either succeeds or fails
* The Tracing Model
  + 4 kinds of events that can occur during the execution of a Prolog program:
    - CALL- occurs when Prolog starts trying to satisfy a goal
    - EXIT- occurs when some goal has just been satisfied
    - REDO- occurs when the system comes back to a goal, trying to re-satisfy it
    - FAIL- occurs when a goal fails
* Tracing and Spy Points
  + Program may provide an independent choice of leashed or unleashed tracing for each of the 4 kinds of events
    - CALL- when an attempt is first made to satisfy a goal; when a goal is encountered for the first time
    - EXIT- when a goal has successfully been satisfied
    - REDO- when an attempt is about to be made to re-satisfy a goal
    - FAIL- when a goal is about to fail, because all attempts to re-satisfy it have failed
* Fixing Bugs
  + Your computer system may allow you to use an editor and then return to Prolog with the same database as before
  + If your Prolog system does not allow you to return to a previous state after using an editor, after changing your program files you will have to run Prolog and consult all your program files from scratch