

1. We will use SWI Prolog software. It is available in JD 2214 and JD 2217.
2. You can also download and install it from [www.swi-prolog.org](http://www.swi-prolog.org) . It installs easily on Windows. If you have a relatively new Mac, install SWI Prolog and XQuark ( X 11) to get the GUI version.
3. Open SWI Prolog in Windows by clicking on SWI Prolog icon/name.
4. You will see a window (INTERPRETER WINDOW) that is waiting for input with the prompt `?-` . Try the following. Note period at end of each line. Hit <enter> at the end of each line.
  - a. `?- X is ( 4 + 5*6).`
  - b. `?- Y is sqrt( 65).`
  - c. `A is 14, B is 20, C is 1/(A + B).`
  - d. `D is B + 2. // what happened?`
  - e. `E = 2*3 + 4. //no evaluation, just an instantiation.`
  - f. `help(sqrt).`
  - g. `help(member).`
5. If font is too small, set font size in settings menu.
6. In help menu, you can open up the SWI prolog manual in a browser. Once there, select the SWI Prolog reference manual.
7. NOW we will create a new file of Prolog facts and rules. To do this:
  - a. From the interpreter window, create a prolog source file with File-> New. Set File name = *first.pl* and then save it.
  - b. Now you have a second window (EDIT WINDOW) . Enter facts and rules in the edit window. Save occasionally with File -> Save buffer.
  - c. Enter these facts and rules: (no spaces between relation name and first parenthesis. Period is essential.
  - d. `likes(mary,movies).`
  - e. `likes(joe, movies).`
  - f. `likes(jeff, movies).`
  - g. `likes(sue,books).`
  - h. `likes(jeff, books).`
  - i. `likes(robin, books).`
  - j. `likes(mary,books).`
  - k. `likes( bob, music).`
  - l. `likes(sue,music).`
  - m. `interest(X,Y) :- likes(X,Z), likes(Y,Z).`
8. Note: In the EDIT WINDOW you are using an emacs editor. You may need to use the EDIT menu to copy, cut and paste with highlighting. Otherwise just use the arrows. Also you may need to copy the *first.pl* file into WORD to be able to print it.
9. To save and compile *first.pl* use the menus on EDIT WINDOW like this  
File → Save buffer

Compile -> Compile buffer

10. Next type in some queries IN the INTERPRETER WINDOW.

- a. ?-interest(sue,robin).
- b. ?- interest(bob,mary).
- c. ?- interest(X,mary). //Find all X by using the ; instead of <enter>
- d. ?- likes(A,books). //Find all people who like books.
- e. ?-likes(X, theater).
- f. ?-likes(sue,W).

11. Modify *first.pl* so that one is not interested in oneself!

interest(X,Y) :- likes(X,Z), likes(Y,Z), not(X = Y).

Test with query ?-interest(sue,X).

Test with query ?-interest(mary,A).

12. Save *first.pl* and exit SWI prolog. You can exit by closing both windows.

13. Open SWI Prolog. At this point you do not have access to *first.pl* or any other prolog source file. If you want to start a new prolog source file, go to instruction 7. Otherwise you can open a previously saved file like this. I am assuming your file is called *first.pl*.

- a. Use menu on INTERPRETER window File -> Consult. Browse to *first.pl* and select it.
- b. You get right back to the INTERPRETER.
- c. Type in ?-likes(sue,books). You should get true.
- d. If you want to edit first.pl, Use menu on INTERPRETER WINDOW File -> Edit. Browse to *first.pl* and select it. The EDIT WINDOW will appear. You are ready to edit file.

14. To TRACE a prolog query, do this in the INTERPRETER SCREEN

- a. ?-**trace.** //turn trace on  
true  
[trace] 3 ?- **likes(A,books).** //type in query  
Call: (6) likes(\_G2541, books) ? <enter>  
Exit: (6) likes(sue, books) ? <enter>  
A = sue <enter> or ; to get more solutions.

?-**notrace.** //turn trace off

?-**nodebug.** //turn debug off -- just need to do this!

- b. You can type **a** to stop the trace. You can type an **e** to exit the SWI Prolog from trace. Also can type **h** to get commands available during a trace.

15. To add comments to your program, use /\*This is a comment\*/ or %comment