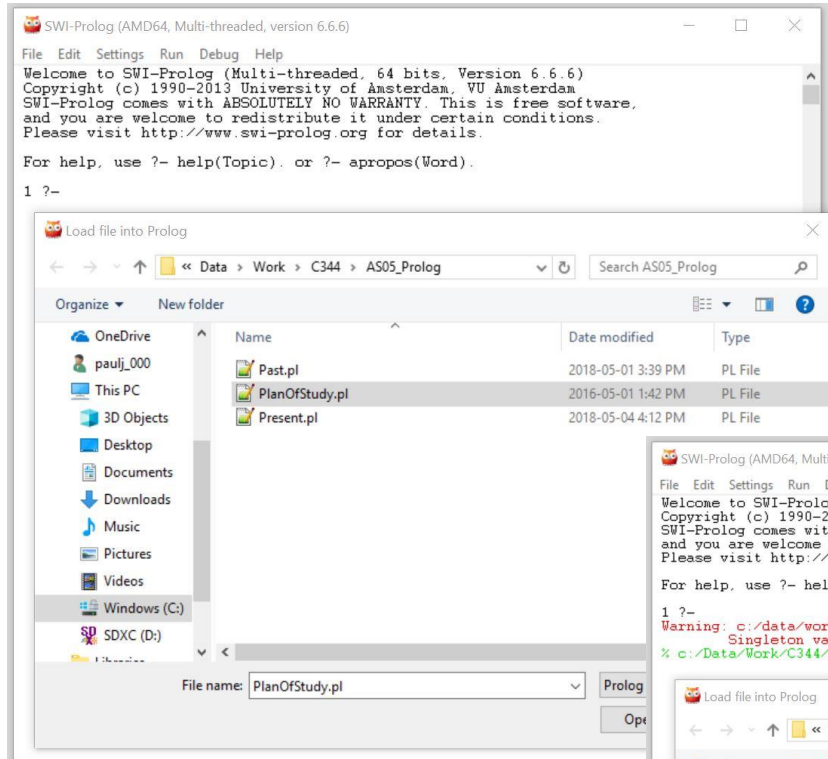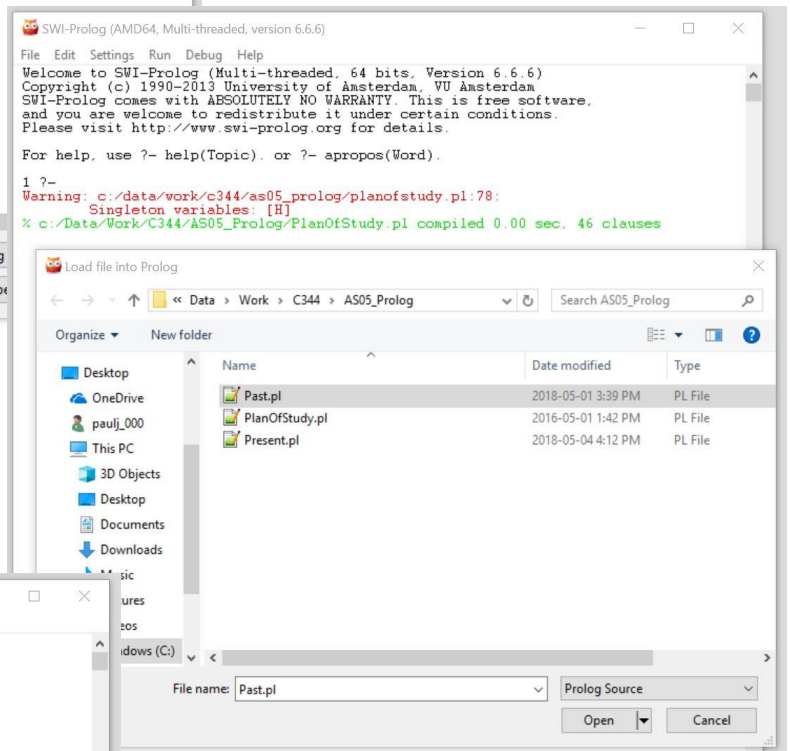**Assignment 05 – Some Prolog** (Due: Wednesday May 16, 2018)

For this assignment you are given the Prolog source program components, `PlanOfStudy.pl`, `Past.pl` and `Present.pl`, that together provide relevant rules and facts for the modeling of a CAPP Report (as used for Academic Advising.) Consider the following screen shots that illustrate the use of SWI-Prolog with the given components.
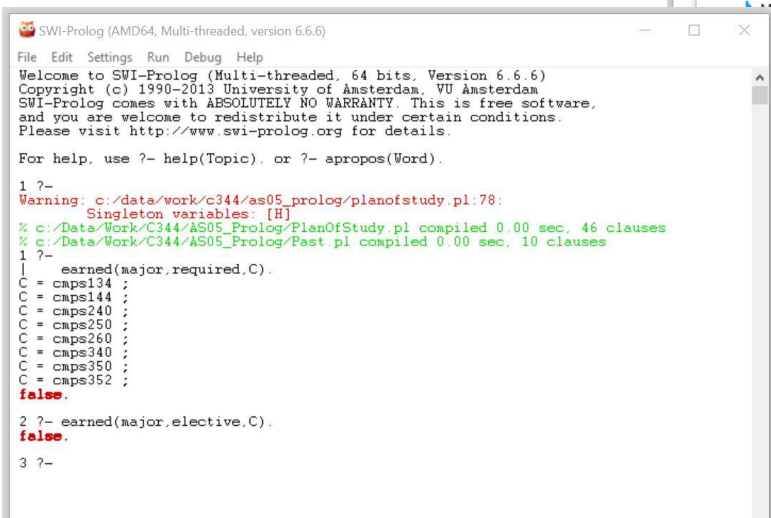

First use the `Consult` command under the `File` menu to "load" `PlanOfStudy.pl`.

Then again use `Consult` to "load" `Past.pl`.

At this point you can enter queries, such as:

        `earned(major,required,C).`

and

        `earned(major,elective,C).`

that yield the results shown. You should be able to verify these results from your study of the given components.

The additional queries, `passed(X).` and `remainingList(major,required,L).` yield the following.

```
3 ?- passed(X).
X = cmps134 ;
X = cmps144 ;
X = cmps240 ;
X = cmps250 ;
X = cmps260 ;
X = cmps340 ;
X = cmps350 ;
X = cmps352 ;
X = cmps362.

4 ?- remainingList(major,required,L).
L = [cmps344, cmps374, cmps490].

5 ?-
```

The file, `Present.pl`, contains additional facts (essentially data indicating that additional courses have been passed) which can be "consulted" so as to update the state of the program and then get updated results through further queries. The following illustrates such.

```
5 ?-
Warning: c:/data/work/c344/as05_prolog/present.pl:5:
        Redefined static procedure passed/1
        Previously defined at c:/data/work/c344/as05_prolog/past.pl:5
% c:/Data/Work/C344/AS05_Prolog/Present.pl compiled 0.00 sec, 4 clauses
5 ?- remainingList(major,required,L).
L = [cmps344, cmps490].

6 ?- earned(major,elective,C).
false.

7 ?- earned(major,option,C).
C = cmps362 ;
C = cmps372 ;
false.

8 ?-
```

Your task for this assignment is to do as much of the following as you can:

1. Modify the `Past.pl` file to reflect your CAPP Report as of the start of the Spring 2018 Semester.
2. Modify the `Present.pl` file to reflect your CAPP Report as of the start of the Fall 2018 Semester (assuming that you have passed all of the courses you are currently taking.)
3. Use your `Past.pl` and `Present.pl` files to test out and shake out the given `PlanOfStudy.pl`. I am suspicious that the design and implementation of the rules there may not be quite right, nor complete and that they can also be expressed better. Document any issues you encounter and make modifications as appropriate to address these issues.
4. Augment `PlanOfStudy.pl`, `Past.pl` and `Present.pl` with the degree requirements pertaining to the Cognate Area and develop an annotated illustration of their operation. These modifications to `Past.pl` and `Present.pl` will simply be the addition of those courses, relevant to the Cognate Area, that you have passed. The modifications to `PlanOfStudy.pl` will require more thought and this is really where the thinking and work of this assignment takes place.

For Items 3 and 4 you are to prepare a MS Word document file (names `AS05.docx`) to present your results as clearly and completely as you can.

Good luck,
P.M.J.