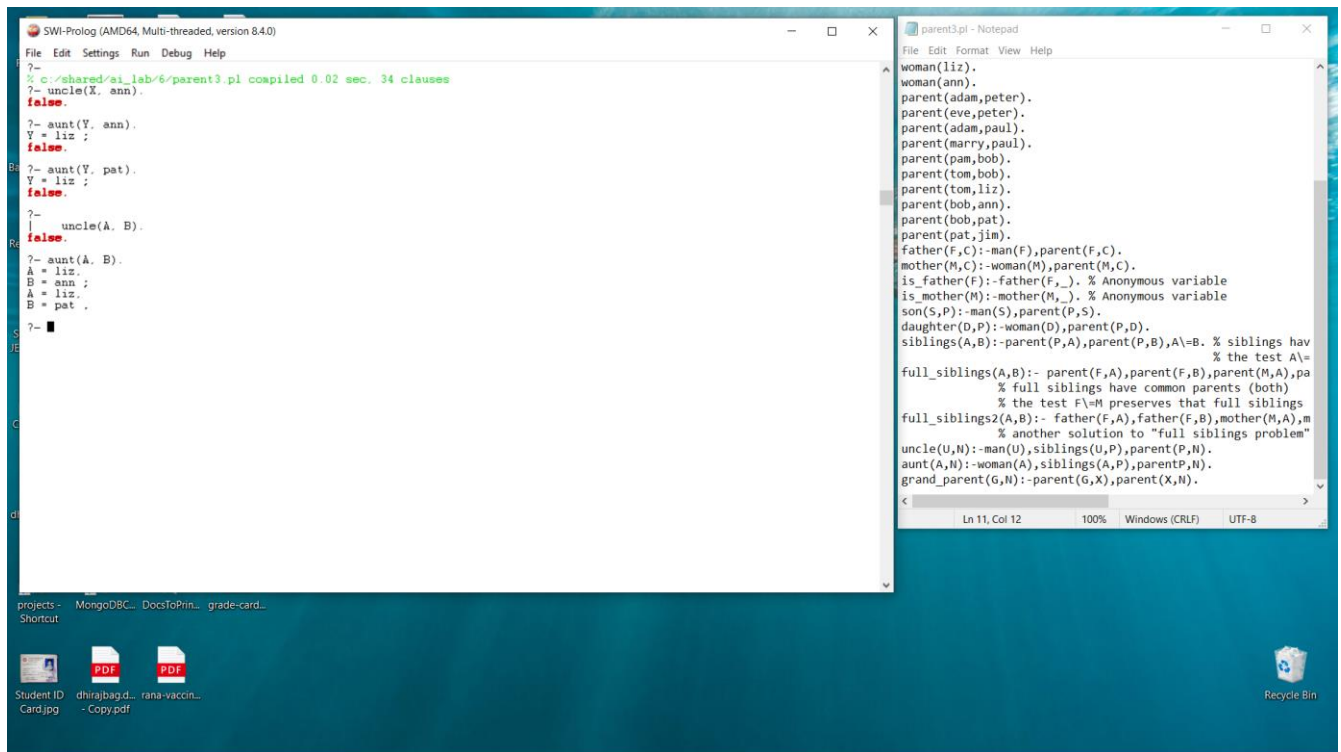


Assignment 6: Prolog Assignment – parent3.pl

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Ran queries and received output as follows:



The screenshot shows a Prolog environment with two windows. The left window, titled 'SWI-Prolog (AMD64, Multi-threaded, version 8.4.0)', displays a query and its output. The right window, titled 'parent3.pl - Notepad', displays the Prolog code.

SWI-Prolog Output:

```
?- uncle(X, ann).
false.
?- aunt(Y, ann).
Y = liz ;
false.
?- aunt(Y, pat).
Y = liz ;
false.
?- uncle(A, B).
false.
?- aunt(A, B).
A = liz,
B = ann ;
A = liz,
B = pat ;
?- 
```

parent3.pl Code:

```
woman(liz).
woman(ann).
parent(adam,peter).
parent(eve,peter).
parent(adam,paul).
parent(marry,paul).
parent(pam,bob).
parent(tom,bob).
parent(tom,liz).
parent(bob,ann).
parent(bob,pat).
parent(pat,jim).
father(F,C):-man(F),parent(F,C).
mother(M,C):-woman(M),parent(M,C).
is_father(F):-father(F,_). % Anonymous variable
is_mother(M):-mother(M,_). % Anonymous variable
son(S,P):-man(S),parent(P,S).
daughter(D,P):-woman(D),parent(P,D).
siblings(A,B):-parent(P,A),parent(P,B),A\=B. % siblings have
% the test A\=
full_siblings(A,B):-parent(F,A),parent(F,B),parent(M,A),parent(M,B). % full siblings have common parents (both)
% the test F\=M preserves that full siblings
full_siblings2(A,B):-father(F,A),father(F,B),mother(M,A),mother(M,B). % another solution to "full siblings problem"
uncle(U,N):-man(U),siblings(U,P),parent(P,N).
aunt(A,N):-woman(A),siblings(A,P),parent(P,N).
grand_parent(G,N):-parent(G,X),parent(X,N).
```

As per the knowledge base:

“Bob” has two children – “ann” and “pat”.

Both “bob” and “liz” have the same parent “tom” and “liz” is a woman.

Therefore, “liz” is an aunt of both “ann” and “pat”.

They have no more a aunt or uncle.