Lab Exercise 1.

```
exercise1_lab.pl - Notepad                            —    □    ×
File  Edit  Format  View  Help
/*facts*/
parent(pam,bob).
parent(tom,bob).
parent(tom,liz).
parent(bob,ann).
parent(bob,pat).
parent(pat,jim).

male(tom).
male(bob).
male(jim).
female(pam).
female(liz).
female(ann).
female(pat).

/*rules*/
mother(X,Y):-parent(X,Y),female(X).
father(X,Y):-parent(X,Y),male(X).
sister(X,Y):-parent(Z,X),parent(Z,Y),female(X),X\=Y.
brother(X,Y):-parent(Z,X),parent(Z,Y),X\=Y.
grandparent(X,Z):-parent(X,Y),parent(Y,Z).
uncle(X,Y):-parent(Z,Y),brother(Z,X).
ancestor(X,U):-parent(X,Y),parent(Y,Z), parent(Z,U).
```

Results of Lab Exercise 1.

```
SWI-Prolog -- c:/Users/Thanesh/Desktop/Prolog/exercise1_lab.pl          —    □    ✕

File  Edit  Settings  Run  Debug  Help
Welcome to SWI-Prolog (threaded, 64 bits, version 8.0.3)
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Please run ?- license. for legal details.

For online help and background, visit http://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- male(X).
X = tom ;
X = bob ;
X = jim.

?- female(X).
X = pam ;
X = liz ;
X = ann ;
X = pat.

?- mother(X, bob).
X = pam ;


?- father(X,Y).
X = tom,
Y = bob ;
X = tom,
Y = liz ;
X = bob,
Y = ann ;
X = bob,
Y = pat ;


?- ancestor(pam, jim).
true.

?- sister(ann, pat).
true.

?- ▮
```

Lab Exercise 2.

```
exercise2_lab.pl - Notepad                                    —    □    ✕

File  Edit  Format  View  Help
/*facts*/
male(john).
male(fred).
male(harry).

female(mary).
female(julie).
female(susan).
female(anne).

blonde_hair(john).
blonde_hair(julie).
blonde_hair(susan).
dark_hair(fred).
dark_hair(harry).
brunette_hair(mary).
brunette_hair(anne).

owns(fred, gold).
owns(julie, gold).
owns(anne, house).
owns(john, car).

/*rules*/
likes(john, X):-female(X), blonde_hair(X), rich(X).
likes(fred, X):-female(X), brunette_hair(X).
likes(harry, X):-female(X), rich(X).
likes(mary, X):-male(X), dark_hair(X).
likes(julie, X):-male(X), dark_hair(X), rich(X).
rich(X):-owns(X, gold).
```
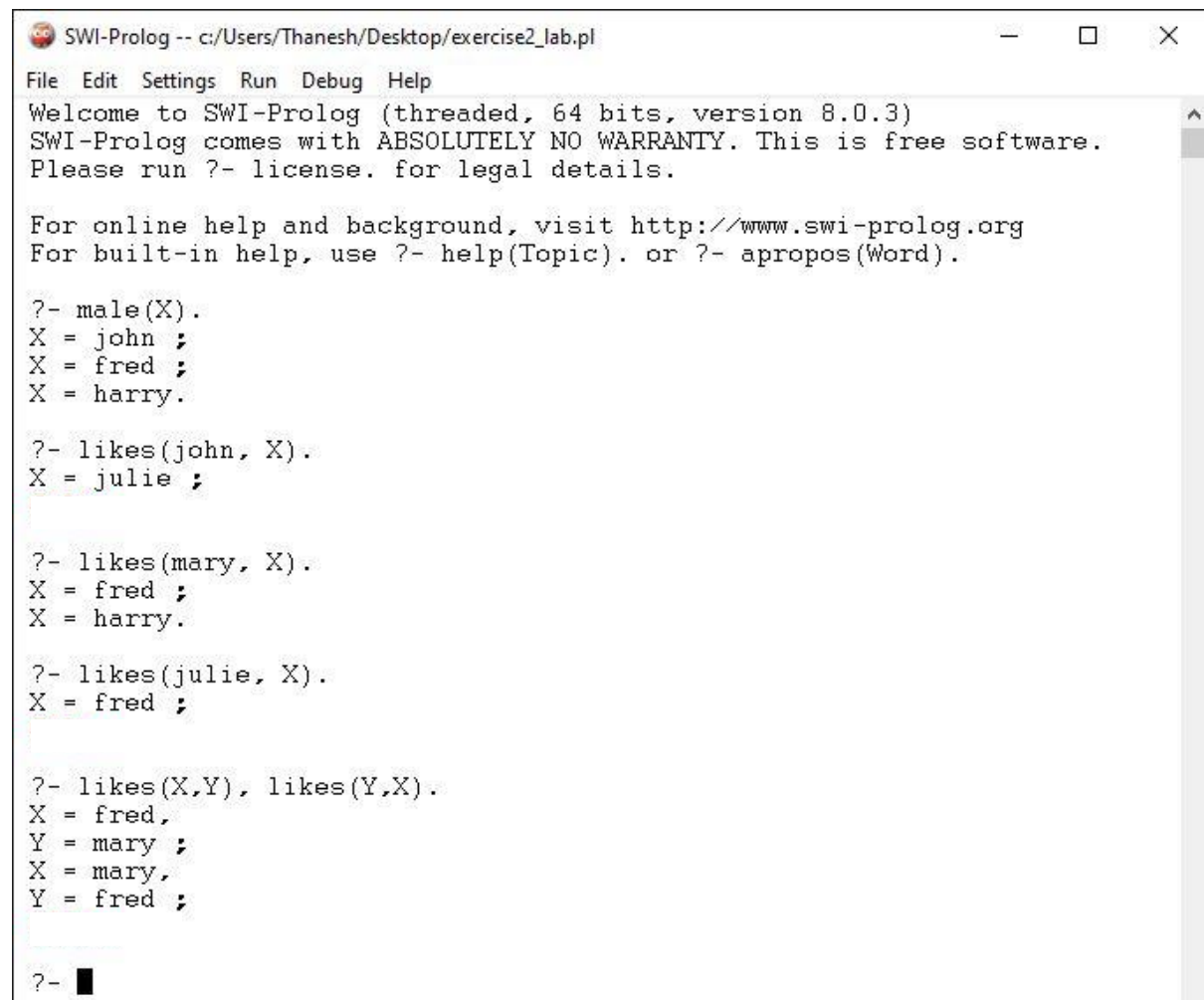
Results of Lab Exercise 2.

SWI-Prolog -- c:/Users/Thanesh/Desktop/exercise2_lab.pl   —   □   ✕

File Edit Settings Run Debug Help

```
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For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- male(X).
X = john ;
X = fred ;
X = harry.

?- likes(john, X).
X = julie ;


?- likes(mary, X).
X = fred ;
X = harry.

?- likes(julie, X).
X = fred ;


?- likes(X,Y), likes(Y,X).
X = fred,
Y = mary ;
X = mary,
Y = fred ;


?- █
```