Predicates

Example 1:

prolog code score.pl:

```
score:-
write('Enter your full name: '),read(N),nl,
write('Enter your score [0-100]: '),read(S),process(N,S).
      process(N,S):-
  S>=90->
     write(N),write(' has score '),write(S),
     write(' has grade A'),nl;
S>=80->
write(N),write(' has score '),write(S),
     write(' has grade B'),nl;
S>=70->
     write(N),write(' has score '),write(S),
     write(' has grade C'),nl;
S>=60->
     write(N),write(' has score '),write(S),
     write(' has grade D'),nl;
S<60->
     write(N),write(' has score '),write(S),
     write(' has grade F'),nl;
write('Thank you.').
```

Connsulting and Running:

?- ['score.pl'].

% score.pl compiled 0.00 sec, 1,152 bytes

true.

?- score.

Enter your full name: nagi.

Enter your score [0-100]: 110.

nagi has score 110 has grade A

true.

?- score.

Enter your full name: nagi.

Enter your score [0-100]: 67.

nagi has score 67 has grade D

true.

?- score.

Enter your full name: 'حامد صادق مهدي'.

Enter your score [0-100]: 55.

حامد صادق مهدي has score 55 has grade F

true.

Example 2:

Prolog code roots.pl:

roots:-

write('Solution of secord degree equation.'),nl,

```
write('     Ax^2 +Bx +C =0 '),nl,

write('Enter value for A: '),read(A),nl,

write('Enter value for B: '),read(B),nl,

write('Enter value for C: '),read(C),nl,

D is (B^2-4*A*C),process(A,B,D).

process(A,B,D):-

D=0->

   write('Two equal roots: '),nl,

   X1 is -B/2*A,write('x1= '), write(X1),nl,

   X2 is -B/2*A,write('x2= '), write(X2),nl;

D>0->

    write('Two real roots: '),nl, Y is sqrt(D),

    X1 is (-B+Y)/2*A, write('x1= '),write(X1),nl,

    X2 is (-B-Y)/2*A, write('x2= '),write(X2),nl;

      D<0->

    write('Two complex real roots: '),nl, Y is sqrt(-D),

    Xr is -B/2*A, Xj is Y/2*A,

    write('x1= '),write(Xr),write('+j'),write(Xj),nl,

    write('x2= '),write(Xr),write('-j'),write(Xj),nl;

      write('Thank you').
```

Consulting and Running:

```
?- ['roots.pl'].

% roots.pl compiled 0.00 sec, 60 bytes
```

true.

?- roots.

Solution of secord degree equation.

Ax^2 +Bx +C =0

Enter value for A: 1.

Enter value for B: 2.

Enter value for C: 1.

Two equal roots:

x1= -1

x2= -1

true.

?- roots.

Solution of secord degree equation.

Ax^2 +Bx +C =0

Enter value for A: 1.

Enter value for B: 1.

Enter value for C: 1.

Two complex real roots:

x1= -0.5+j0.866025

x2= -0.5-j0.866025

true.

?- roots.

Solution of secord degree equation.

Ax^2 +Bx +C =0

Enter value for A: 1.

Enter value for B: 3.

Enter value for C: 2.

Two real roots:

x1= -1.0

x2= -2.0

true.

?- roots.

Solution of secord degree equation.

Ax^2 +Bx +C =0

Enter value for A: 2.

Enter value for B: 10.

Enter value for C: -3.

Two real roots:

x1= 1.13553

x2= -21.1355

true.

?- roots.

Solution of secord degree equation.

Ax^2 +Bx +C =0

Enter value for A: -3.

Enter value for B: -6.

Enter value for C: 97.

Two real roots:

```
x1= -60.9615

x2= 42.9615

true.
```