# Program 21
# Towers of Hanoi

**AIM :**

To implement a prolog program to implement towers of hanoi

**PROGRAM :**

```prolog
loc(left).
loc(center).
loc(right).

move(1, From, To, _) :-
  write('Move disk from '),
  write(From),
  write(' to '),
  write(To),
  nl.

move(N, From, To, Aux) :-
  N > 1,
  M is N - 1,

  move(M, From, Aux, To),

  move(1, From, To, _),

  move(M, Aux, To, From).

hanoi(N) :-
  move(N,left,right,center).
```

**OUTPUT:**

```
S GNU Prolog console                                                              —

File  Edit  Terminal  Prolog  Help
| ?- N is 3.

N = 3

yes
| ?- hanoi(3).
uncaught exception: error(existence_error(procedure,write/4),move/0)
| ?- hanoi(N).
uncaught exception: error(existence_error(procedure,write/4),move/0)
| ?- consult('C:/GNU-Prolog/bin/21_towers of hanoi.pl').
compiling C:/GNU-Prolog/bin/21_towers of hanoi.pl for byte code...
C:/GNU-Prolog/bin/21_towers of hanoi.pl compiled, 18 lines read - 1832 bytes written, 0 ms

yes
| ?- hanoi(3).
Move disk from left to right
Move disk from left to center
Move disk from right to center
Move disk from left to right
Move disk from center to left
Move disk from center to right
Move disk from left to right

true ? |
```

**RESULT:**

The Program has successfully been executed.