Demonstrate recursion in Prolog using Tower of Hanoi problem

Output:

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% c:/Users/Prajwal/Desktop/AI Lab/Experiment - 8/lab.pl
 C:/Users/Frajwal/Desktop/Al Lab/E:
7- move(3.source.target.aux).
Move top disk from source to target
Move top disk from source to aux
Move top disk from source to aux
Move top disk from source to target
Move top disk from aux to source
Move top disk from aux to target
Move top disk from source to target
  true .
 ?- trace.
 true.
[trace] ?- move(3, source, target, aux).

Call: (12) move(3, source, target, aux) ? creep

Call: (13) 3>1 ? creep

Exit: (13) 3>1 ? creep

Call: (13) _27438 is 3+ -1 ? creep

Exit: (13) 2 is 3+ -1 ? creep

Call: (14) 2>1 ? creep

Call: (14) 2>1 ? creep

Exit: (14) 2>1 ? creep

Call: (14) _31504 is 2+ -1 ? creep

Exit: (14) 1 is 2+ -1 ? creep

Call: (14) move(1, source, target, aux) ? creep

Call: (15) write('Move top disk from ') ? creep

Move top disk from

Exit: (15) write('Move top disk from ') ? creep

Call: (15) write(source) ? creep
             Exit: (15) write(source) ? creep
Call: (15) write(' to ') ? creep
 Call: (15) write(' to ') ? creep
to
Exit: (15) write(' to ') ? creep
Call: (15) write(target) ? creep
target
Exit: (15) write(target) ? creep
Call: (15) n1 ? creep
            Exit: (15) nl ? creep
Exit: (14) move(1, source, target, aux) ? creep
Call: (14) move(1, source, aux, _42884) ? creep
Call: (15) write('Move top disk from ') ? creep
et top disk from
Exit: (15) write('Move top disk from ') ? creep
Call: (15) write(source) ? creep
             Exit: (15) write(source) ? creep
Call: (15) write(' to ') ? creep
     to
Exit: (15) write(' to ') ? cr
Call: (15) write(aux) ? creep
 aux

Exit: (15) write(aux) ? creep

Call: (15) nl ? creep
            Exit: (15) nl ? creep
            Exit: (14) move(1, source, aux, _51746) ? creep
Call: (14) move(1, target, aux, source) ? creep
Call: (15) write('Move top disk from ') ? creep
   Move top disk from Exit: (15) write('Move top disk from ') ? creep Call: (15) write(target) ? creep target
             Exit: (15) write(target) ? creep
Call: (15) write(' to ') ? creep
      to
Exit: (15) write(' to ')
creep
Call: (15) write(aux)
creep
             Exit: (15) write(aux) ? creep
Call: (15) nl ? creep
   Exit: (15) nl ? creep
Exit: (14) move(1, target, aux, source) ? creep
Exit: (13) move(2, source, aux, target) ? creep
Call: (13) move(1, source, target, _63062) ? creep
Call: (14) write('Move top disk from ') ? creep
Move top disk from
Exit: (14) write('Move top disk from ') ? creep
Call: (14) write('Move top disk from ') ? creep
    source
             Exit: (14) write(source) ? creep
Call: (14) write(' to ') ? creep
    Exit: (14) write(' to ') ? creep
Call: (14) write(target) ? creep
target
Exit: (14) write(target) ? creep
             Exit: (14) write(target) ? creep
Call: (14) nl ? creep
              Exit: (14) nl ? creep
Exit: (13) move(1, source, target, _7892) ? creep
Call: (13) move(2, aux, target, source) ? creep
Call: (14) 2>1 ? creep
Exit: (14) 2>1 ? creep
Call: (14) __11076 is 2+ -1 ? creep
Exit: (14) 1 is 2+ -1 ? creep
Call: (14) move(1, aux, source, target) ? creep
Call: (15) write('Move top disk from ') ? creep
```

```
Move top disk from
Exit: (15) write('Move top disk from ') ? creep
Call: (15) write(aux) ? creep
 aux
         Exit: (15) write(aux) ? creep
Call: (15) write(' to ') ? cr
         Exit: (15) write(' to ') ? creep
Call: (15) write(source) ? creep
 source
         rce
Exit: (15) write(source) ? creep
Call: (15) nl ? creep
        Exit: (15) nl ? creep
Exit: (14) move(1, aux. source, target) ? creep
Call: (14) move(1, aux. target, _2456) ? creep
Call: (15) write('Move top disk from ') ? creep
top disk from
Exit: (15) write('Move top disk from ') ? creep
Call: (15) write(aux) ? creep
        Exit: (15) write(aux) ? creep
Call: (15) write(' to ') ? creep
Exit: (15) write(' to ') ? creep
Call: (15) write(target) ? creep
    to
target
Exit: (15) write(target) ? creep
Call: (15) nl ? creep
   Exit: (15) nl ? creep
             reep
xit: (14) move(1, aux, target, _31318) ? creep
xit: (14) move(1, source, target, aux) ? creep
xit: (15) write('Move top disk from ') ? creep
xit top disk from ') ?
         Exit:
Call:
Call:
Move
         e top disk from
Exit: (15) write('Move top disk from ') ? creep
Call: (15) write(source) ? creep
source
                        (15) write(source) ? creep
(15) write(' to ') ? creep
   to
Exit: (15) write(' to ')
? creep
Call: (15) write(target) ? creep
target
Exit:
Call:
                        (15) write(target) ? creep
(15) nl ? creep
        Exit: (15) nl ? creep
Exit: (14) move(1, source, target, aux) ? creep
Exit: (13) move(2, aux, target, source) ? creep
Exit: (12) move(3, source, target, aux) ? creep
 [trace] ?- notrace.
 true.
 [debug] ?- nodebug.
 true.
?- move(5, source, target, aux).
Move top disk from source to target
Move top disk from source to aux
Move top disk from source to aux
Move top disk from source to target
Move top disk from aux to source
Move top disk from aux to target
Move top disk from source to target
Move top disk from source to target
Move top disk from source to aux
Move top disk from target to source
Move top disk from target to source
Move top disk from target to source
Move top disk from target to aux
               top disk from aux to
top disk from target
top disk from source
top disk from target
top disk from source
                                                                              to aux
to target
 Move
 Move
 Move
                                                                               to aux
                                                                               to aux
to target
 Move
                           disk from aux to
disk from aux to
disk from source
 Move
                top
top
                                                                              source
 Move
                                                                               target
               top disk
top disk
top disk
 Move
                                                                               to
                                                                                        target
                                         from
from
from
                                                         aux to
target
                                                                              source
to aux
to source
 Move
 Move
                                                         target
auv
 Move
                top
                           disk
                top disk
                                         from
                                                         aux to
 Move
 Move
                                                                               target
Move top disk from source Move top disk from source Move top disk from target Move top disk from source Move top disk from aux to Move top disk from aux to Move top disk from source true
               top disk
                                                                               to
                                                                                        target
                                                                              to aux
to target
                                                                             source
                                                                              target
```