

# Lab-7 WAP to study Using recursion in prolog.

Procedure:-

Write predicate fact(n) ,which finds and display factorial of a given number .

Example:- Output:- Goal :- fact(5) 5 != 5\*4\*3\*2\*1= 120 .

CODE:

```

DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Progra...
Files Edit Run Compile Options Setup
Line 1 Col 1 D:\PROLOG\EXP7A.PRO Indent Insert
domains
predicates
    fact(integer, integer)
    fact(integer)
clauses
    fact(0,X):-X=1.
    fact(N,X):-M=N-1,fact(M,Y),X=Y*N.

    fact(N):-fact(N,X),write(X),nl.
  
```

F1-Help F2-Save F3-Load F5-Zoom F6-Next F7-Xcopy F8-Xedit F9-Compile F10-Menu

domains

predicates

fact(integer,integer)

fact(integer)

clauses

fact(0,X):-X=1.

fact(N,X):-M=N-1,fact(M,Y),X=Y\*N.

fact(N):-fact(N,X),write(X),nl.

**OUTPUTS:**


```

DOSBox 0.74-3, CPU speed: 3000 cycles, Frameskip 0, Program: D:\PROLOG\EXP7B.PRO
Files
Goal: fact(0)
1
Yes
Goal: fact(5)
120
Yes
Goal: fact(1)
1
Yes

```

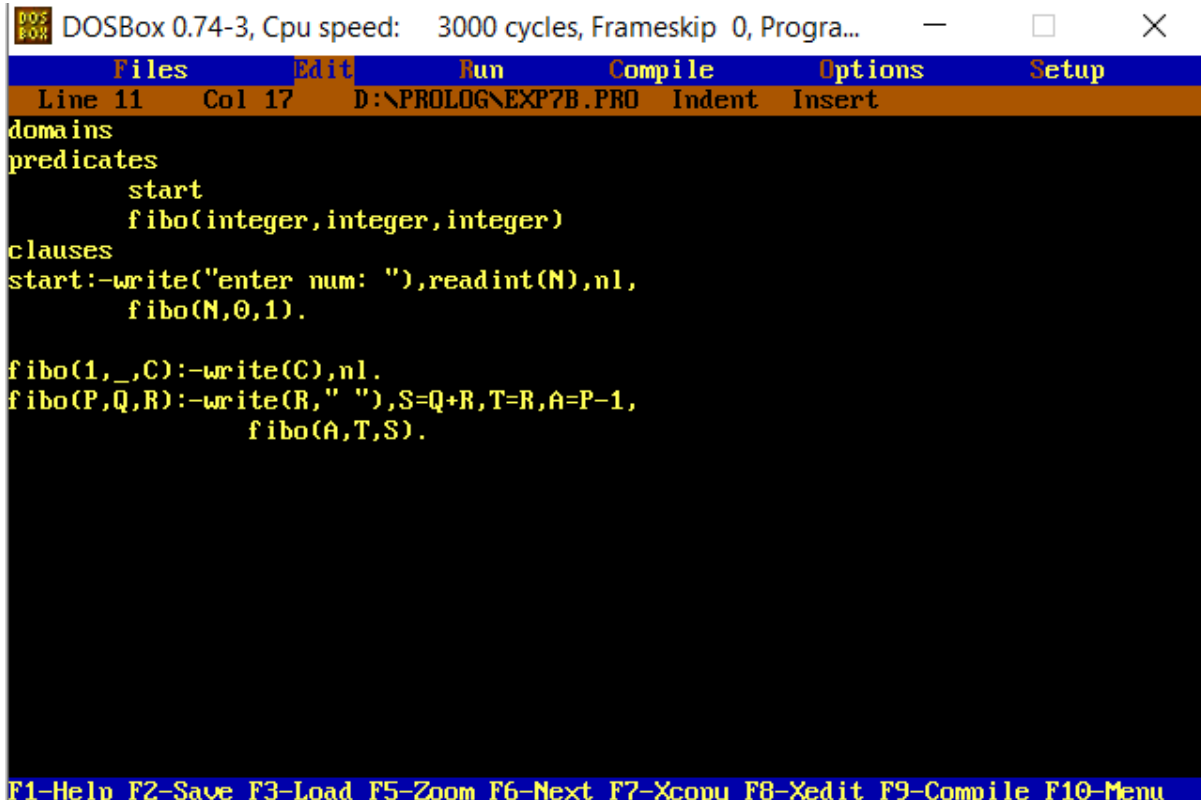
Write predicate fibonacci (n) ,which finds the series for first “n” values .

Example:-

Output:- Total number of numbers needed in output? 6

Fibonacci series of first “6”

numbers:- 1,1,2,3,5,8

**CODE:**


```

DOSBox 0.74-3, CPU speed: 3000 cycles, Frameskip 0, Program: D:\PROLOG\EXP7B.PRO
Files Edit Run Compile Options Setup
Line 11 Col 17 D:\PROLOG\EXP7B.PRO Indent Insert
domains
predicates
    start
    fibo(integer, integer, integer)
clauses
start:-write("enter num: "),readint(N),nl,
    fibo(N,0,1).

fibo(1,_,C):-write(C),nl.
fibo(P,Q,R):-write(R," "),S=Q+R,T=R,A=P-1,
    fibo(A,T,S).
F1-Help F2-Save F3-Load F5-Zoom F6-Next F7-Xcopy F8-Xedit F9-Compile F10-Menu

```

domains

predicates

start

fibonacci(integer, integer, integer)

clauses

start:-write("enter num: "),readint(N),nl,

fibonacci(N,0,1).

fibonacci(1,\_,C):-write(C),nl.

fibonacci(P,Q,R):-write(R," "),S=Q+R,T=R,A=P-1,

fibonacci(A,T,S).

OUTPUTS:

```
Goal: start
enter num: 6
```

```
1 1 2 3 5 8
```

```
Yes
```

```
Goal: start
enter num: 2
```

```
1 1
```

```
Yes
```

```
Goal: start
enter num: 1
```

```
1
```

```
Yes
```

```
Goal:
```

```
F2-Save F3-Load
```