

**18BECE30558**  
**TITHI PATEL**

## **PRACTICAL-4**

**Program (1):** Program to implement factorial.

The screenshot shows a Prolog IDE with a menu bar (Files, Edit, Run, Compile, Options, Setup) and a status bar (F2-Save, F3-Load, F6-Switch, F9-Compile, Alt-X-Exit). The main editor window displays a Prolog program for calculating factorials. The program defines a domain for integers, a predicate for factorial, and two clauses: a base case and a recursive case. The goal is to calculate the factorial of 6, which is 720. However, the program has crashed with a stack overflow error, indicated by the message '1002 Stack overflow. Re-configure with Options if necessary.' and the instruction 'Press the SPACE bar'.

```
Line 1 Col 15 E:\PROLOG\PR4(1).PRO Indent
/*18BECE30558_TITHI PATEL*/
domains
    n,f=integer
predicates
    factorial(n,f)
clauses
    factorial(0,1).
    factorial(N,F):-
        N1=N-1,factorial(N1,F1),
        F=N*F1.
```

Goal: factorial(6,X)  
X=720

1002 Stack overflow. Re-configure with Options if necessary.  
Press the SPACE bar

F2-Save F3-Load F6-Switch F9-Compile Alt-X-Exit

**Program (2):** Program to implement factorial using cut and fail predicates.

Files	Edit	Run	Compile	Options	Setup
<b>Editor</b>				<b>Dialog</b>	
Line 1 Col 23 E:\PROLOG\PR4(I).PRO Indent				Goal: factorial(6,X)	
/*18BECE30558_TITHI PATEL*/				X=720	
domains				Goal: factorial(8,X)	
n,f=integer				X=-25216	
predicates				1 Solution	
factorial(n,f)				Goal: _	
clauses					
factorial(0,1) if !.					
factorial(N,F):-					
N1=N-1,factorial(N1,F1),					
F=N*F1.					
<b>Message</b>				<b>Trace</b>	
Press the SPACE bar					
Compiling E:\PROLOG\PR4(I).PRO					
Compiling E:\PROLOG\PR4(I).PRO					
factorial					
F2-Save F3-Load F5-Zoom F6-Next F8-Previous goal Shift-F10-Resize F10-End					

