Shri Vile Parle Kelavani Mandal's

INSTITUTE OF TECHNOLOGY

DHULE (M.S.)

DEPARMENT OF COMPUTER ENGINEERING

Subject : Artificial Intelligence Lab

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Class : B.tech Final Year **Batch : B2** **Division: -**

Expt. No. :03 **Date : 28/08/2025**

Title : Implement The DFS in Prolog.

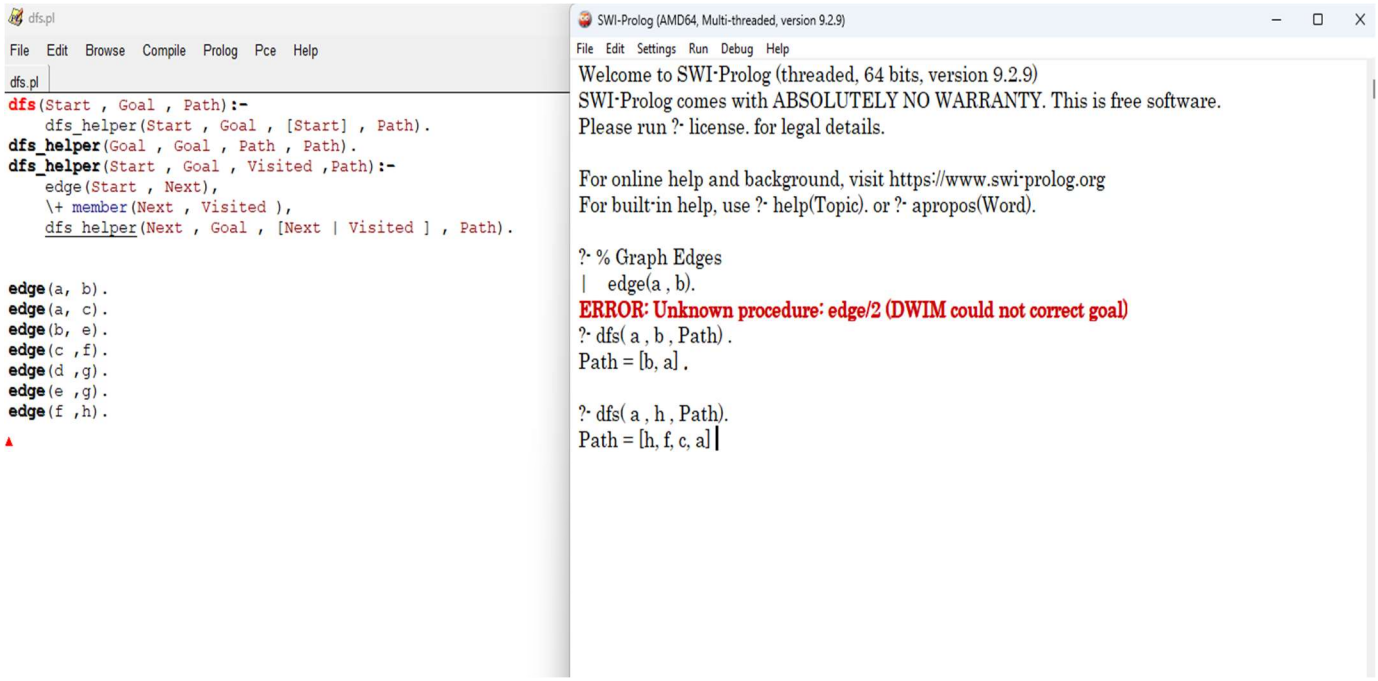
Remark

Signature

Code:

```
dfs(Start , Goal , Path):-
    dfs_helper(Start , Goal , [Start] , Path).
dfs_helper(Goal , Goal , Path , Path).
dfs_helper(Start , Goal , Visited ,Path):-
    edge(Start , Next),
    \+ member(Next , Visited ),
    dfs_helper(Next , Goal , [Next | Visited ] , Path).
edge(a, b).
edge(a, c).
edge(b, e).
edge(c ,f).
edge(d ,g).
edge(e ,g).
edge(f ,h).
```

Output:


dfs.pl
File Edit Browse Compile Prolog Pce Help
dfs.pl
dfs(Start , Goal , Path):-
dfs_helper(Start , Goal , [Start] , Path).
dfs_helper(Goal , Goal , Path , Path).
dfs_helper(Start , Goal , Visited ,Path):-
edge(Start , Next),
\+ member(Next , Visited),
dfs_helper(Next , Goal , [Next | Visited] , Path).
edge(a, b).
edge(a, c).
edge(b, e).
edge(c ,f).
edge(d ,g).
edge(e ,g).
edge(f ,h).
SWI-Prolog (AMD64, Multi-threaded, version 9.2.9)
File Edit Settings Run Debug Help
Welcome to SWI-Prolog (threaded, 64 bits, version 9.2.9)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.
For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).
?- % Graph Edges
| edge(a , b).
ERROR: Unknown procedure: edge/2 (DWIM could not correct goal)
?- dfs(a , b , Path) .
Path = [b, a] .
?- dfs(a , h , Path).
Path = [h, f, c, a]