Experiment 1

Foundations of AI

Path traversal using Depth First Search

By- Shivansh Jain,Vit Chennai

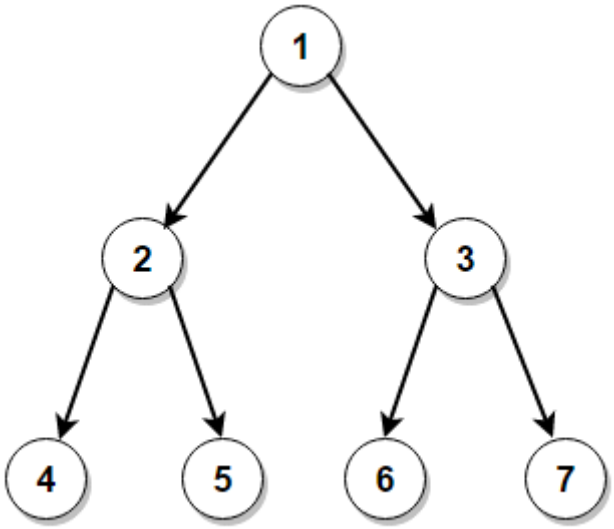
AIM:-

To find the path traversed using DFS (Depth First Search) given the graph and the starting node

RESULTS AND OUTPUT:-

→

Test case 1:-



Graph:-

Filter

	V1	V2	V3	V4	V5	V6	V7
1	FALSE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE
2	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE
3	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE
4	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
5	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
6	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
7	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

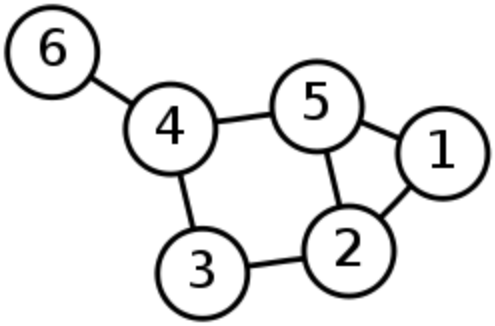
Output :-

Starting node:- 1

```
> path=dfs(graph,1)
> cat("Final path: ", path)
Final path:  1 3 7 6 2 5 4
>
```

→

Test case 2:-



Graph

Filter

	V1	V2	V3	V4	V5	V6
1	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE
2	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE
3	FALSE	TRUE	FALSE	TRUE	FALSE	FALSE
4	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE
5	TRUE	TRUE	FALSE	TRUE	FALSE	FALSE
6	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE

OUTPUT

Starting node:- 6

```
> path=dfs(graph,6)
> cat("Final path: ", path)
Final path:  6 4 5 2 1 3
>
```