# Graph Traversal Depth-First Search #3

| Needed Things | Basically trying out all possible |
| --- | --- |
| • Start Node | actions till the end even if it means |
| • Destination node/target Node | back tracking! |
| • A graph representation | |

## DFS

- Recursive Approach
- Needs exit conditions (Boundary of the matrix / visited node)
- Marking visited nodes

## Time Complexity

$O(V+E)$, when adjecency list is used

$O(V^2)$, when adjecency matrix is used

## Applications

1) Topological sorting
2) Finding connected componets
3) Finding articulation points (cut vertices) of the graph
4) Finding Strongly connected components
5) Solving mazes