

Depth First Search

- DFS fundamental graph search algorithm with complexity of $O(V+E)$
- By itself it's not that useful can be augmented to perform other tasks such as count connected components, determine connectivity or find bridges/articulation points

Basic DFS

- We pick a start node, mark the start node as visited and recursively visit nodes that have not been visited yet

```
# n = number of nodes in the graph
# g = adjacency list representing graph
visited = [False * n]

function dfs(node):
    if visited[node]:
        visited[node] = True
    neighbors = g[node]
    for next in neighbors:
        dfs(next)

# start dfs at node 0
start_node = 0
dfs(start_node)
```