Algorithm 2.1.1: Depth-First Search

Input: A graph $G = (V, E)$, where $V = \{1, 2, ..., n\}$ and $L[v]$ is a pointer to the list of vertices adjacent to vertex v.

Output: Traversal of all vertices in V in a depth-first order.

```
procedure DepthFirstSearch(G){
   for v := 1 to n do
      mark[v] := new;
   for v := 1 to n do
      if mark[v] = new; then
         dfs(v);
}
procedure dfs(v){
   mark[v] := old;
   for each vertex w on L[v] do
      if mark[w] = new then
         dfs(w);
}
```