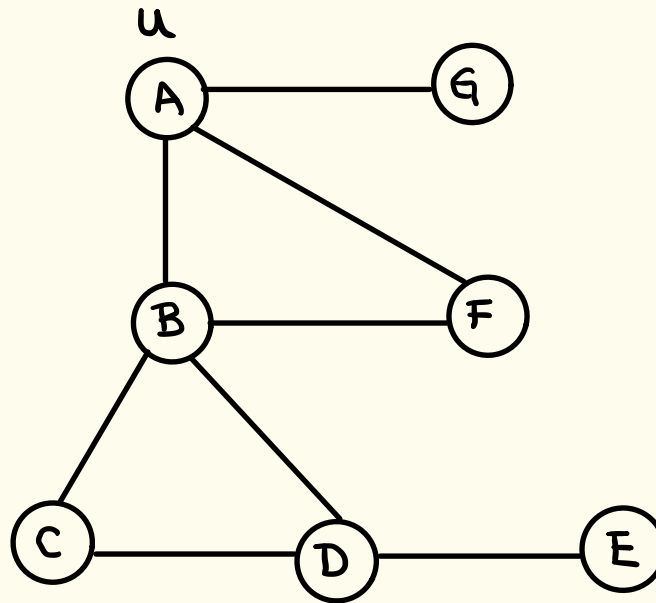
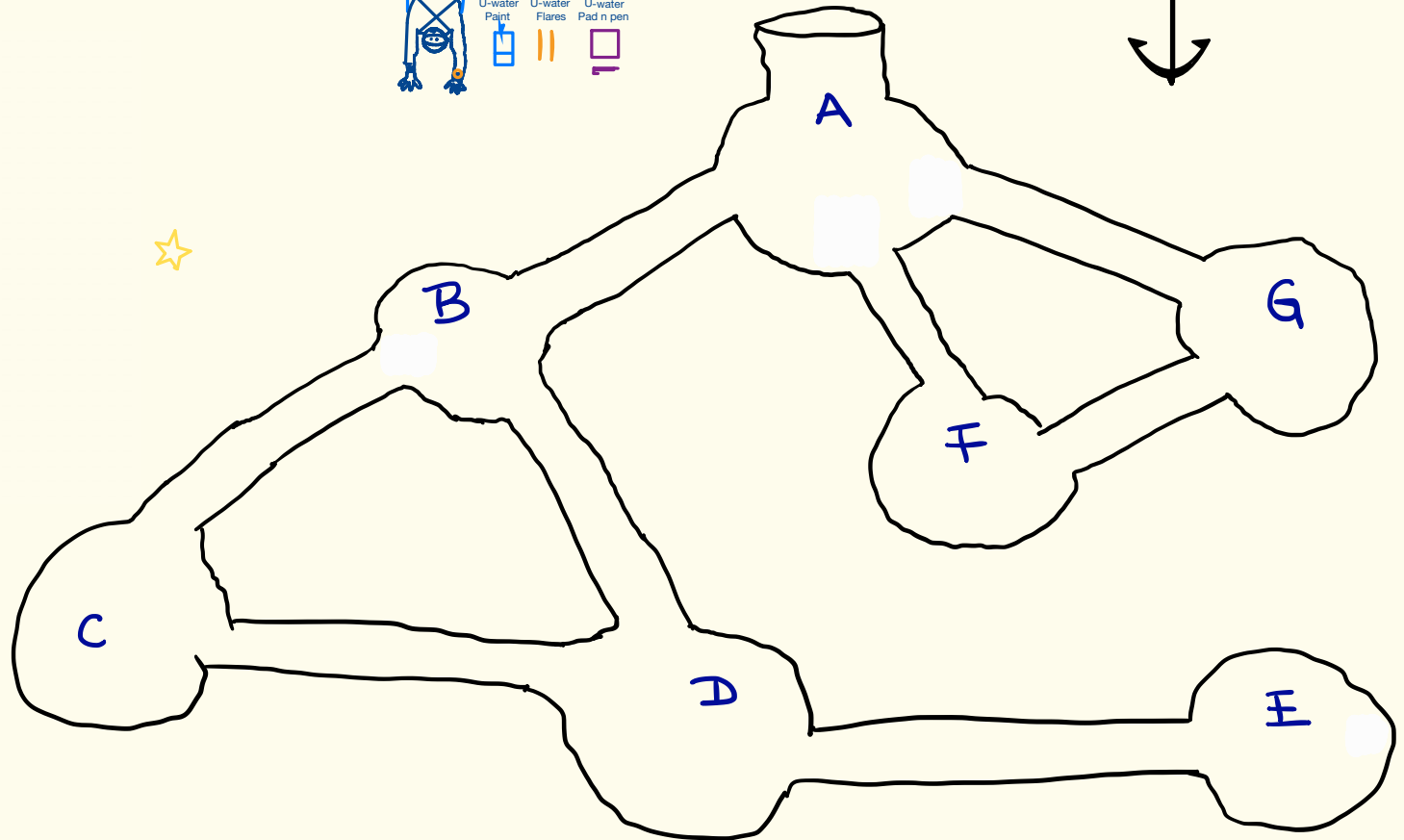
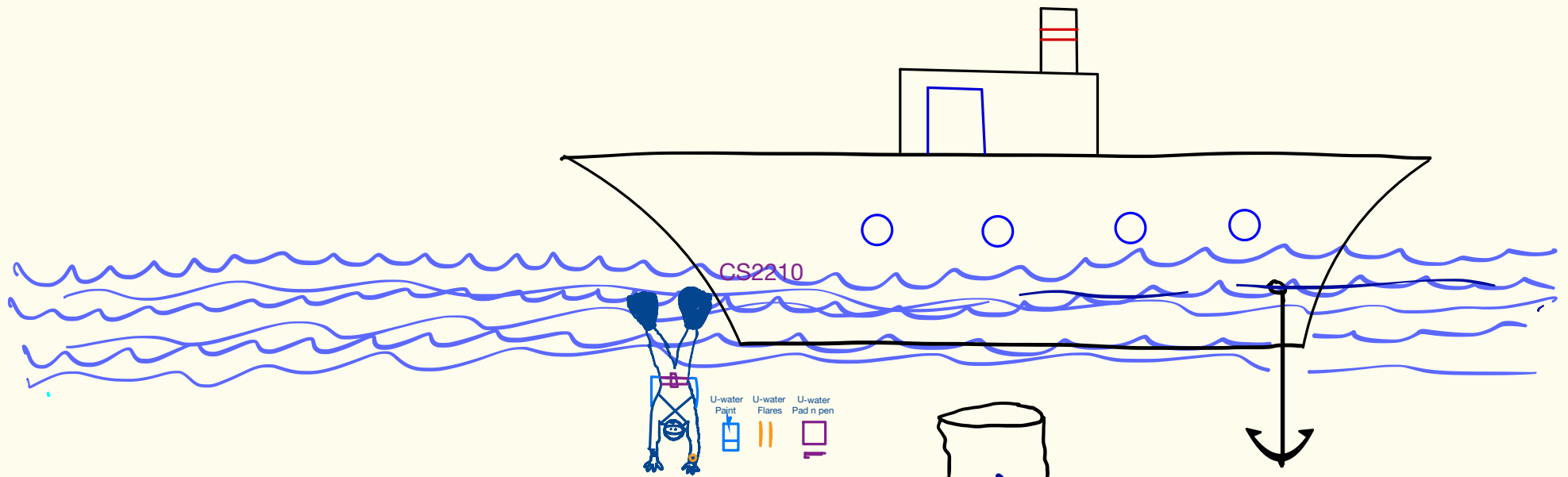


# Graph Traversals

The process of starting at a vertex  $u$  and processing all the vertices and edges reachable from  $u$  is called a **graph traversal**.

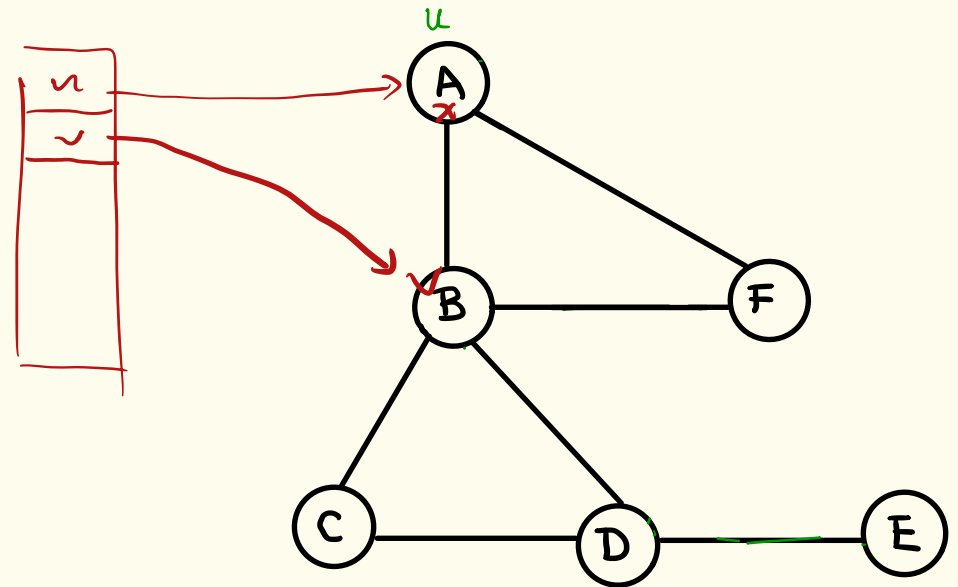




## Algorithm DFS (u)

In: Vertex  $u$  of a graph  $G = (V, E)$

Out: { A DFS traversal of  $G$  starting at  $u$  }



Mark  $u$ ,

For each edges  $(u, v)$  incident on  $u$  do {

if  $(u, v)$  is not labelled then {

label  $(u, v)$  as discovery

if  $(hasCycle(v))$  return true.

else label  $(u, v)$  as back

return true

return false