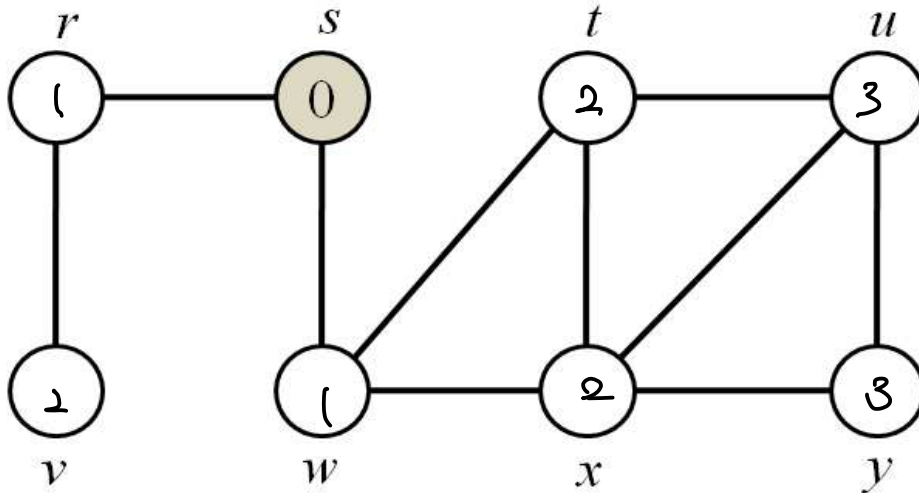


Review 12-2

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1. Show the breadth-first tree of the following graph and the distance from the source to each vertex. (Each adjacency list is ordered alphabetically.)



2. Fill in the blanks in the following pseudocode for BFS.

BFS(G, s)

for each vertex $u \in G.V - \{s\}$

$u.color = \text{WHITE}$

$u.d = \infty$

$u.\pi = \text{NIL}$

$s.color = \text{GRAY}$

$s.d = 0$

$s.\pi = \text{NIL}$

$Q = \emptyset$

 ENQUEUE(Q, s)

while $Q \neq \emptyset$

$u = \text{DEQUEUE}(Q)$

for each $v \in G.Adj[u]$

if $v.color == \text{WHITE}$

$v.color = \text{Gray}$

$v.d = u.d + 1$

$v.\pi = u$

 ENQUEUE(Q, v)

$u.color = \text{BLACK}$