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Quiz 3 Question

BFS DFS

5 points possible (graded, results hidden)

Q. The Data structure used in standard implementation of Depth First Search is?

- [ ] Queue
- [x] Stack
- [ ] Priority Queue
- [ ] Circular Linked List

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- [ ] QMNROP
- [x] QMRNOP
- [ ] QMNORP
- [ ] QNPRMO

Q. Which of the algorithms can be used to create a tree from a connected graph?

- [ ] Only BFS
- [x] Both BFS and DFS
- [ ] Only DFS
- [ ] None of them

Q. With DFS how many nodes can we traverse of a graph which contains cycle?

- [x] all the nodes
- [ ] all the nodes that doesn't belong to the cycle
- [ ] if the number of nodes is n and there is only 1 cycle, it will traverse n-1 nodes

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Q. We need visited/ color flag in traversing algorithms to

- [x] visit the nodes only once
- [ ] backtrack the nodes
- [ ] find out the parent nodes
- [x] check later that all the nodes are visited or not

Submit You have used 1 of 1 attempt

Answer submitted.

DAG TS SCC

5 points possible (graded, results hidden)

Q. The maximum number of edges, a DAG with 4 verteces can have, is-

- ○ 0
- ○ 4
- ○ 6
- ◉ 8
- ○ 12

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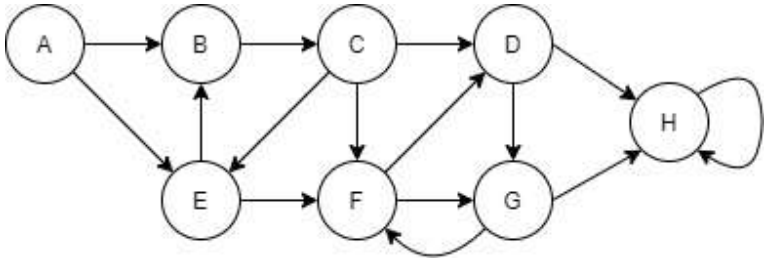

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◉ more than 4

Q. Which of the following statements is **false** for Strongly Connected Components (SCC)?

- ◯ If a digraph has only an SCC, then the graph is said to be strongly connected.
- ◯ Each SCC of a graph G is a subgraph of G.
- ◯ There should be no edges among the SCCs of a graph.
- ◉ It can be used in the classification of edges in bipartite graphs.

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c. Determine starting time $v.t$ for each vertex v
d. Determine finishing time $v.t$ for each vertex v
e. Sort each vertecx in descending order of $v.t$ for each vertex v
f. Sort each vertecx in ascending order of $v.t$ for each vertex v

- ○ a then c then e
- ○ a then c then f
- ◉ a then d then e
- ○ a then d then f
- ○ b then d then e
- ○ b then d then f

Q. Suppose, you are given a digraph whose edge set $E = \{(P,Q),(Q,R),(R,S),(Q,T),(T,U)\}$. Mark all the topologically sorted order from below-

- ☐ P Q R S T U
- ☐ P Q U T S R
- ☑ P Q T R U S
- ☐ P Q R S U T

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Answer submitted.

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