# hw1_search_q3_breadth_first_graph_search

Question 3: Breadth-First Graph Search

0.0/6.0 points (graded)

Consider a breadth-first graph search on the graph below, where S is the start and G is the goal state. Assume that ties are broken alphabetically (so a partial plan S->X->A would be expanded before S->X->B and S->A->Z would be expanded before S->B->A). You may find it helpful to execute the search on scratch paper.

Please enter the final path returned by breadth-first graph search in the box below. Your answer should be a string with S as your first character and G as your last character. Don't include arrows or spaces in your submission. For example, if you believe the path is S->X->G, please enter SXG in the box.

SBG
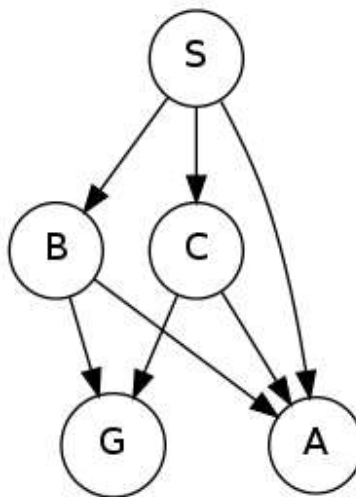
Answer: SBG
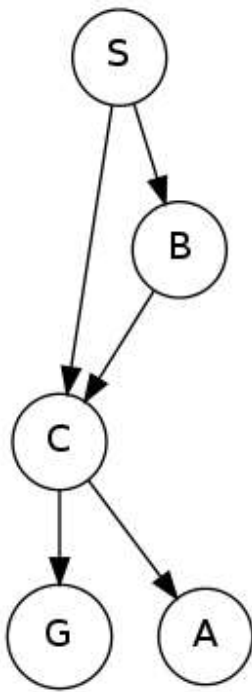
This problem creates randomly generated graphs. The solution here is for the above graph, which may be different from the graph in your homework.

Step 1: Expand S
Fringe: S-B, S-C
Closed Set: S

Step 2: Expand S-B
Fringe: S-C, S-B-C
Closed Set: S, B

Step 3: Expand S-C
Fringe: S-B-C, S-C-A, S-C-G
Closed Set: S, B, C

Step 4: Pop S-B-C from our fringe, but do not expand it, because C is in our closed set
Fringe: S-C-A, S-C-G
Closed Set: S, B, C

Step 5: Expand S-C-A
Fringe: S-C-G
Closed Set: S, B, C, A

Step 6: Expand S-C-G, finding the goal

Submit

ⓘ   Answers are displayed within the problem