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Exercise 2

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Exercise 2

10.0/10.0 points (graded)

Consider our representation of permutations of students in a line from Exercise 1. (The teacher only swaps the positions of two students that are next to each other in line.) Let's consider a line of three students, Alice, Bob, and Carol (denoted A, B, and C). Using the Graph class created in the lecture, we can create a graph with the design chosen in Exercise 1: vertices represent permutations of the students in line; edges connect two permutations if one can be made into the other by swapping two adjacent students.

We construct our graph by first adding the following nodes:

```
nodes = []
nodes.append(Node("ABC")) # nodes[0]
nodes.append(Node("ACB")) # nodes[1]
nodes.append(Node("BAC")) # nodes[2]
nodes.append(Node("BCA")) # nodes[3]
nodes.append(Node("CAB")) # nodes[4]
nodes.append(Node("CBA")) # nodes[5]

g = Graph()
for n in nodes:
    g.addNode(n)
```

Add the appropriate edges to the graph.

Hint: How to get started?

Write your code in terms of the `nodes` list from the code above. For each node, think about what permutation is allowed. A permutation of a set is a rearrangement of the elements in that set. In this problem, you are only adding edges between nodes whose permutations are between elements in the set beside each other . For example, an acceptable permutation (edge) is between "ABC" and "ACB" but not between "ABC" and "CAB".

```
1 # Write the code that adds the appropriate edges to the graph
2 # in this box.
3 g.addEdge(Edge(nodes[0], nodes[1]))
4 g.addEdge(Edge(nodes[0], nodes[2]))
5 g.addEdge(Edge(nodes[1], nodes[4]))
6 g.addEdge(Edge(nodes[2], nodes[3]))
7 g.addEdge(Edge(nodes[3], nodes[5]))
8 g.addEdge(Edge(nodes[4], nodes[5]))
```

Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

CORRECT

[See full output](#)

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I will retake MITx 6.00.1x because its work, but after try and many failures frustrate

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