

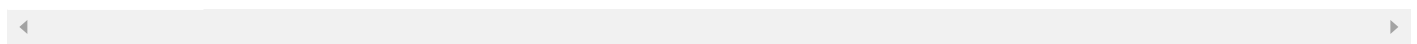
Programming Assignment: Beating graph coloring (graded)

You have not submitted.

Deadline

The assignment was due on Apr 25, 7:59 AM BST

Instructions	My submissions	Discussions
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Can you color an undirected graph with `num_colors` so that every two connected nodes have different color?

Implement function

```
def solve(  
    adj_lists: 'List[List[int]]',  
    num_colors: int,  
) -> List[int]:
```

returning colors (ints from [0; num_colors)) of nodes or and empty list if no coloring is possible.

You can iterate `adj_lists` like this:

```
for node, adj_nodes in enumerate(adj_lists):  
    for adj_node in adj_nodes:
```

Graph sizes are growing from 4 to 1000. Time limit is 1 sec.

Example:

```
adj_lists[[1, 2], [0, 2, 3], [0, 1], [1]] # 0-1-2 form a triangle and 3 is connected to  
1
```

```
n = 3
```

possible answers are [0, 1, 2, 0], or [0, 1, 2, 2], or [2, 0, 1, 2] or others.

Example:

```
adj_lists[[1, 2], [0, 2, 3], [0, 1], [1]] # 0-1-2 form a triangle and 3 is connected to  
1
```

```
n = 2
```

the answer is [] as 0-1-2 form a triangle so 2 colors is not enough, as there are always 2 nodes in it having the same color.

H