DEVELOPING AGENT PROGRAMS FOR REAL WORLD PROBLEMS

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CODE:

```
class Graph:
    def __init__(self, edges, n):
        self.adjList = [[] for _ in range(n)]
        # add edges to the undirected graph
        for (src, dest) in edges:
            self.adjList[src].append(dest)
            self.adjList[dest].append(src)


def colorGraph(graph, n):
    result = {}
    for u in range(n):
        assigned = set([result.get(i) for i in graph.adjList[u] if i in result])
        color = 1
        for c in assigned:
            if color != c:
                break
            color = color + 1
        result[u] = color
    for v in range(n):
        print(f'Color assigned to vertex {v} is {colors[result[v]]}')


if __name__ == '__main__':
    colors = ['', 'BLUE', 'GREEN', 'RED', 'YELLOW', 'ORANGE', 'PINK',
```

'BLACK', 'BROWN', 'WHITE', 'PURPLE', 'VOILET']

edges = [(0, 1), (0, 4), (0, 5), (4, 5), (1, 4), (1, 3), (2, 3), (2, 4)]

n = 6

graph = Graph(edges, n)

colorGraph(graph, n)

OUTPUT: