DESIGN AND ANALYSIS OF ALGORITHM

PRACTICAL-8A

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ROLL: 69

BATCH: A4

```
def graph_coloring(graph):
    colors = {}
    available_colors = ["green", "red", "blue"]

    for node in graph:
        used_colors = set()
        for neighbor in graph[node]:
            if neighbor in colors:
                used_colors.add(colors[neighbor])

        for color in available_colors:
            if color not in used_colors:
                colors[node] = color
                break

    return colors

graph = {
    'A': ['B', 'C'],
    'B': ['A', 'C', 'D'],
    'C': ['A', 'B', 'D'],
    'D': ['B', 'C']
}

result = graph_coloring(graph)
print(result)
```

```
{'A': 'green', 'B': 'red', 'C': 'blue', 'D': 'green'}
```