**Exp 11 : Write the python program for Map Coloring to implement CSP**.

**Input:**

def is\_safe(node, color, assignment, graph):

    for neighbor in graph[node]:

        if neighbor in assignment and assignment[neighbor] == color:

            return False

    return True

def backtracking(graph, colors, assignment):

    if len(assignment) == len(graph):

        return assignment

    unassigned = [node for node in graph if node not in assignment]

    node = unassigned[0]

    for color in colors:

        if is\_safe(node, color, assignment, graph):

            assignment[node] = color

            result = backtracking(graph, colors, assignment)

            if result:

                return result

            del assignment[node]

    return None

graph = {

    'WA': ['NT', 'SA'],

    'NT': ['WA', 'SA', 'Q'],

    'SA': ['WA', 'NT', 'Q', 'NSW', 'V'],

    'Q': ['NT', 'SA', 'NSW'],

    'NSW': ['Q', 'SA', 'V'],

    'V': ['SA', 'NSW'],

    'T': []

}

colors = ['Red', 'Green', 'Blue']

solution = backtracking(graph, colors, {})

if solution:

    print("Map Coloring Solution:")

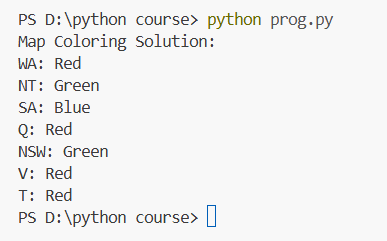
    for region in solution:

        print(f"{region}: {solution[region]}")

else:

    print("No solution found.")

**output:**

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