Lab 2: Developing Agent Programs for Real World Problems

Tejas Ashok

RA1911030010090

**Graph Coloring**

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

A screenshot of a computer

Description automatically generated