**Assignment No : 5**

class Graph():

def \_\_init\_\_(self, vertices):

self.V = vertices

self.graph = [[0 for column in range(vertices)] for row in range(vertices)]

def isSafe(self, v, colour, c):

for i in range(self.V):

if self.graph[v][i] == 1 and colour[i] == c:

return False

return True

def graphColourUtil(self, m, colour, v):

if v == self.V:

return True

for c in range(1, m + 1):

if self.isSafe(v, colour, c) == True:

colour[v] = c

if self.graphColourUtil(m, colour, v + 1) == True: return True

colour[v] = 0

def graphColouring(self, m):

colour = [0] \* self.V

if self.graphColourUtil(m, colour, 0) == None: return False

print("Solution exist and Following are the assigned colours:") for c in colour:

print(c, end=' ')

return True

if \_\_name\_\_ == '\_\_main\_\_':

g = Graph(4)

g.graph = [[0, 1, 1, 1], [1, 0, 1, 0], [1, 1, 0, 1], [1, 0, 1, 0]] m = 3

g.graphColouring(m)

OUTPUT:

