

IT LAB - M.TECH CS  
Lab - 6

October 13, 2017

**Understanding Backtracking Strategy: The Graph (Vertex) Coloring Problem :** Given an undirected graph and an integer  $M$ , determine if the graph can be colored with at most  $M$  colors such that no two adjacent vertices of the graph are colored with the same color. Here coloring of a graph means assignment of colors to all vertices.

**Input:** Input is given in a file with first line containing number of vertices; Next line onwards contains one edge given as a pair of vertices per line. Take the number of colors  $M$  as a command line argument.

**Output:** Print 1 if it is possible to colour vertices and 0 otherwise. Also print the solution of coloring of the vertices.