Algorithm NextVal(k)

{

while (true)

{

x[k] = (x[k]+1) mod (m+1); // next highest color.

if (x[k]=0) then

return; // all colors have been used.

for j=1 to n do // check if this color is distinct vertices

// from adjacent vertices colors.

{

if ((G[k,j]≠0) and x[k]=x[j]) then

break; // if (k,j) is an edge of adjacent

// vertices have same colors.

if (j=n+1) then

return

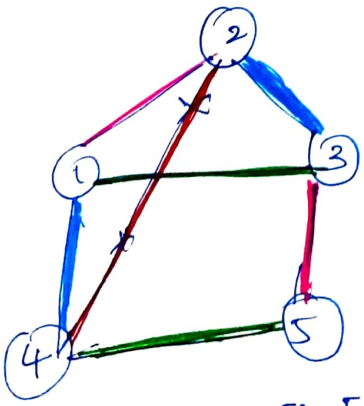
} // otherwise try to find another color.

m = no. of colors = 3

then x = 1, 2, 3

not more than 3.

Ex:



$$G = \begin{array}{c} \\ 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{array} \begin{array}{c} \begin{array}{ccccc} 1 & 2 & 3 & 4 & 5 \end{array} \\ \begin{bmatrix} 0 & 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 & 0 \\ 1 & 1 & 0 & 0 & 1 \\ 1 & 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 1 & 0 \end{bmatrix} \end{array}$$

x[1]	x[2]	x[3]	x[4]	x[5]
0	0	0	0	0
1	2			

K = 1

m = 3

R, B, G

(1, 2, 3)