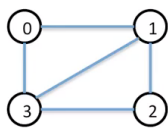


ANSWERS TO THE QUESTIONS

Backtracking and the Graph Colouring Problem

Watch the following video where you can find an explanation about the backtracking algorithm applied to a Graph Colouring Problem:



<https://www.youtube.com/watch?v=miCYGGrTwFU>

Stop the recording whenever you want and watch the video again to check the answers.:

1. **n**: refers to the number of nodes (cities) and **m**: **m refers to the number of colours available to colour the cities**
2. Which represents the content of the adjacency matrix?
G keeps information about the connection between two nodes, 1 if two nodes are connected, and 0 otherwise
3. Linking:

• a node to be coloured	• k
• every colour	• c
• the colour assignment for each node	• x
• a node to check if it is adjacent to other	• i
• blue colour	• 3
• green colour	• 2
• red colour	• 1
• the adjacency matrix	• G

4. True or False:

- Zero means that two nodes are connected **FALSE**
- Nodes Zero and two are not connected **TRUE**
- k is the node we're trying to colour **TRUE**
- return breaks the recursion **TRUE**
- A node is adjacent to itself **TRUE**
- **isSafe** function checks if the node k is adjacent to the node i that is being checked in the loop **TRUE**
- Eventually is synonym of Finally **TRUE**
- Edges are the same as Arcs between nodes **TRUE**
- Edges are vertices **FALSE**