NPTEL

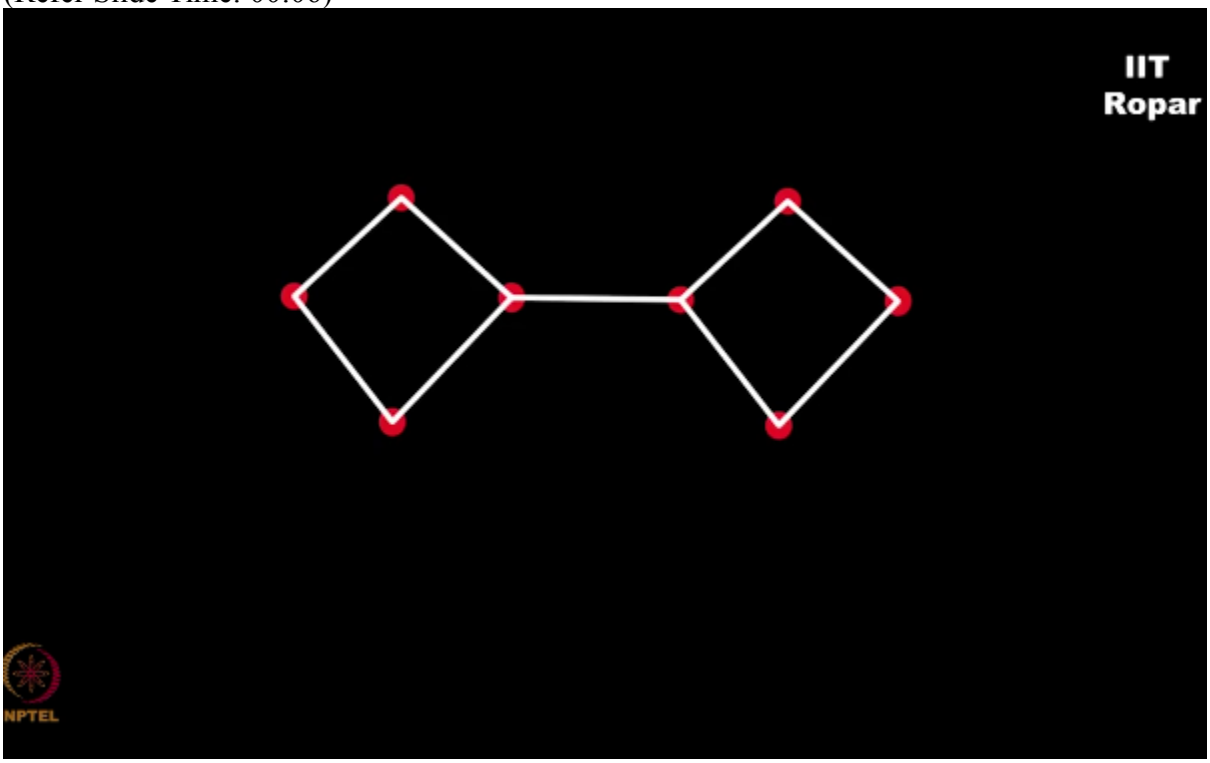
NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Graph Theory - 1

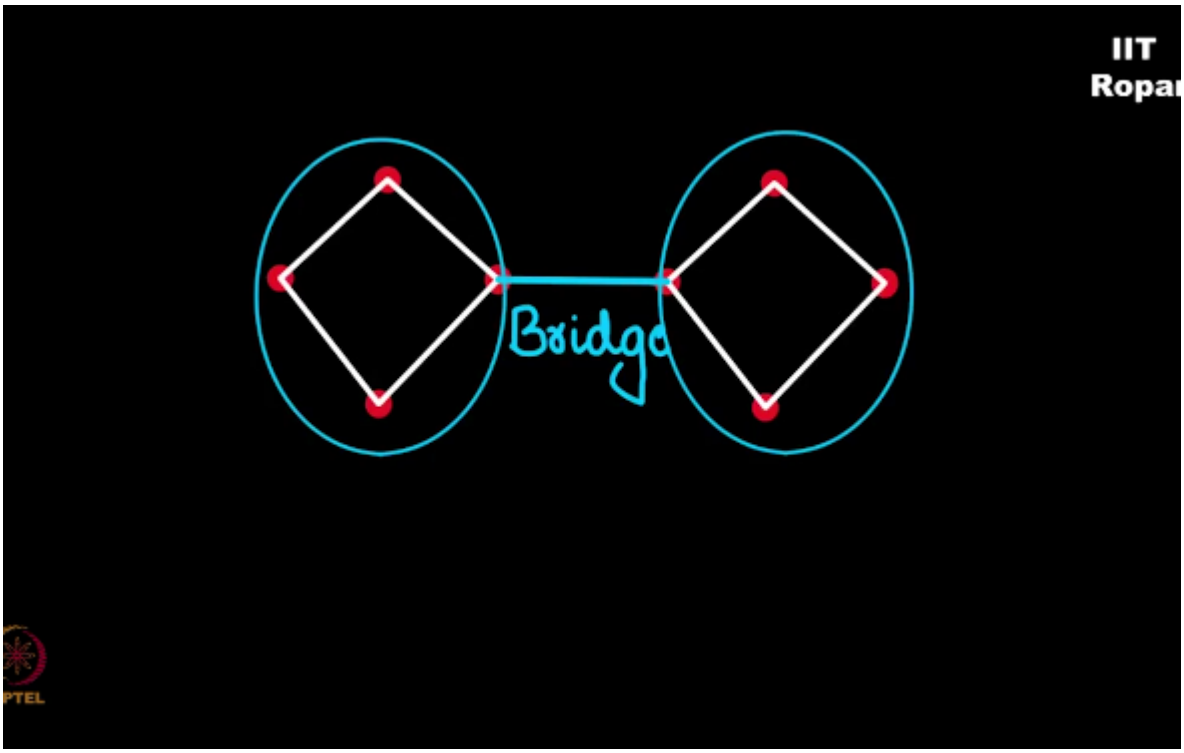
Cut edge

By
Prof. S.R.S Iyengar
Department of Computer Science
IIT Ropar

Do you see this graph here?
(Refer Slide Time: 00:06)

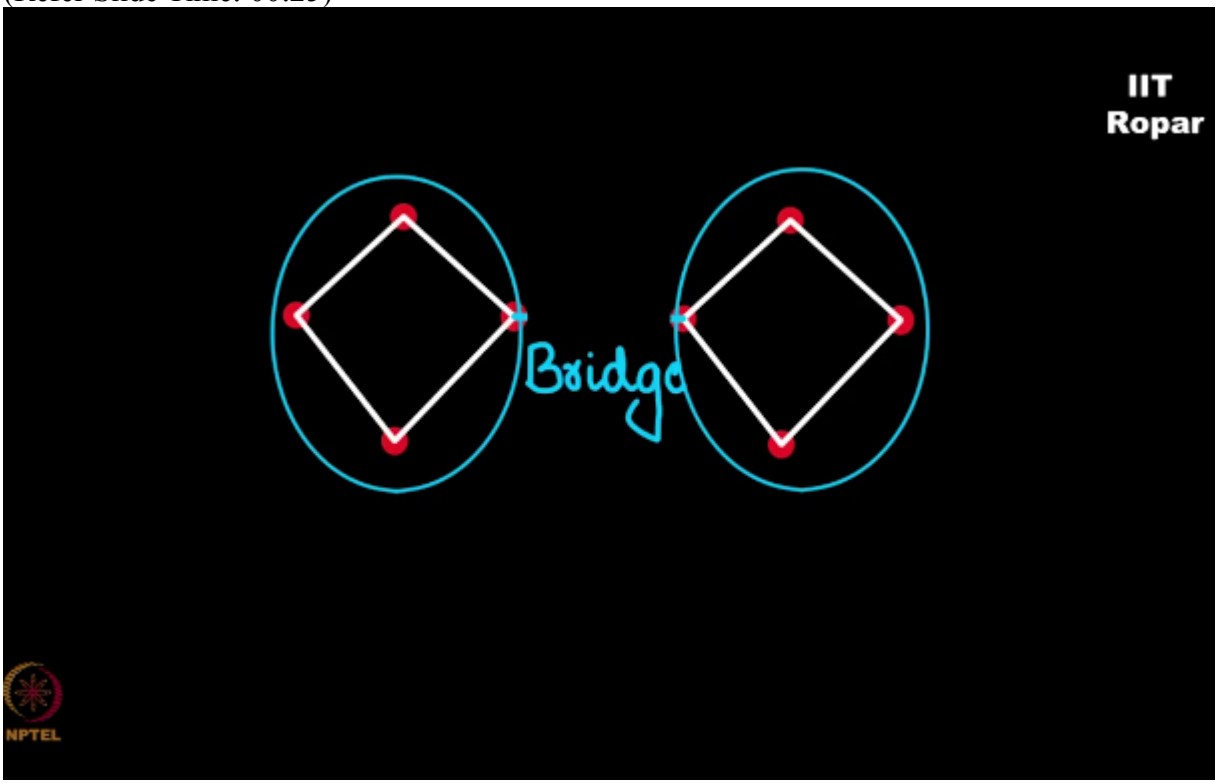


Don’t you feel this edge here acts like a bridge between this portion and this portion,
(Refer Slide Time: 00:14)



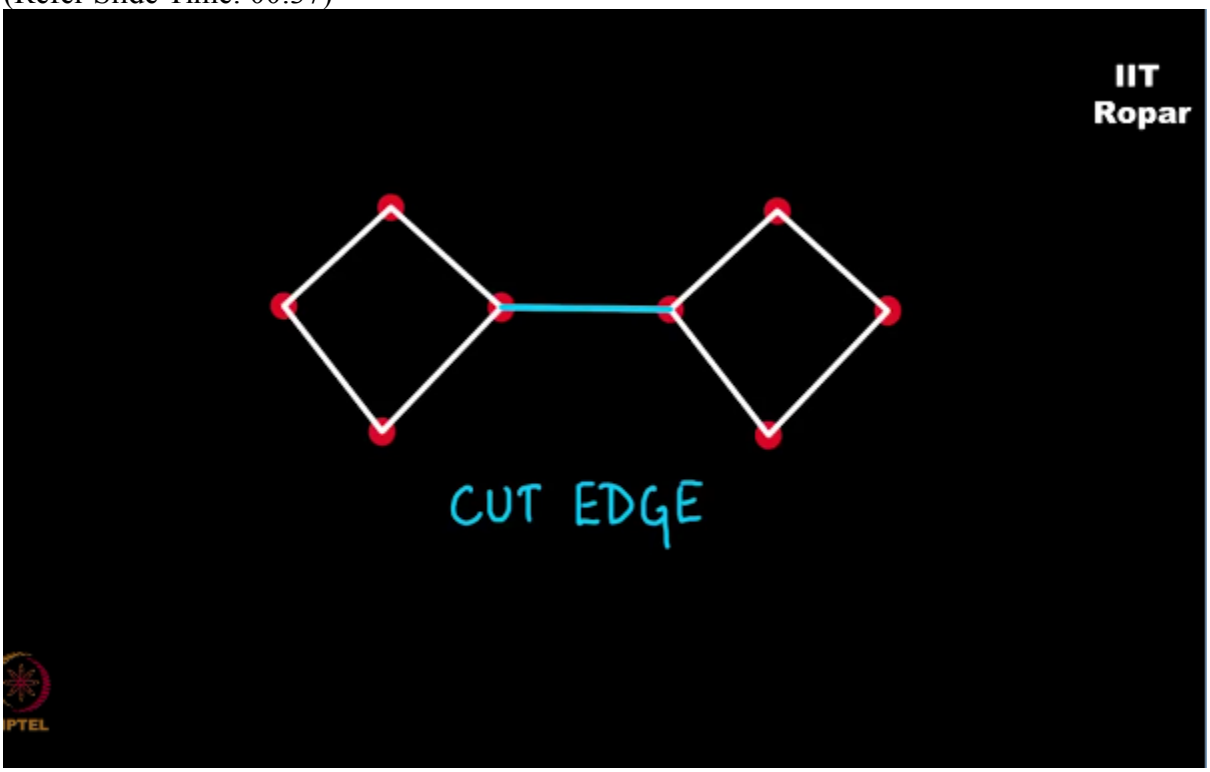
now where am I getting to, you must be able to guess it with the introduction of the professor. Yes, if I remove this edge what will happen to the graph?

(Refer Slide Time: 00:25)



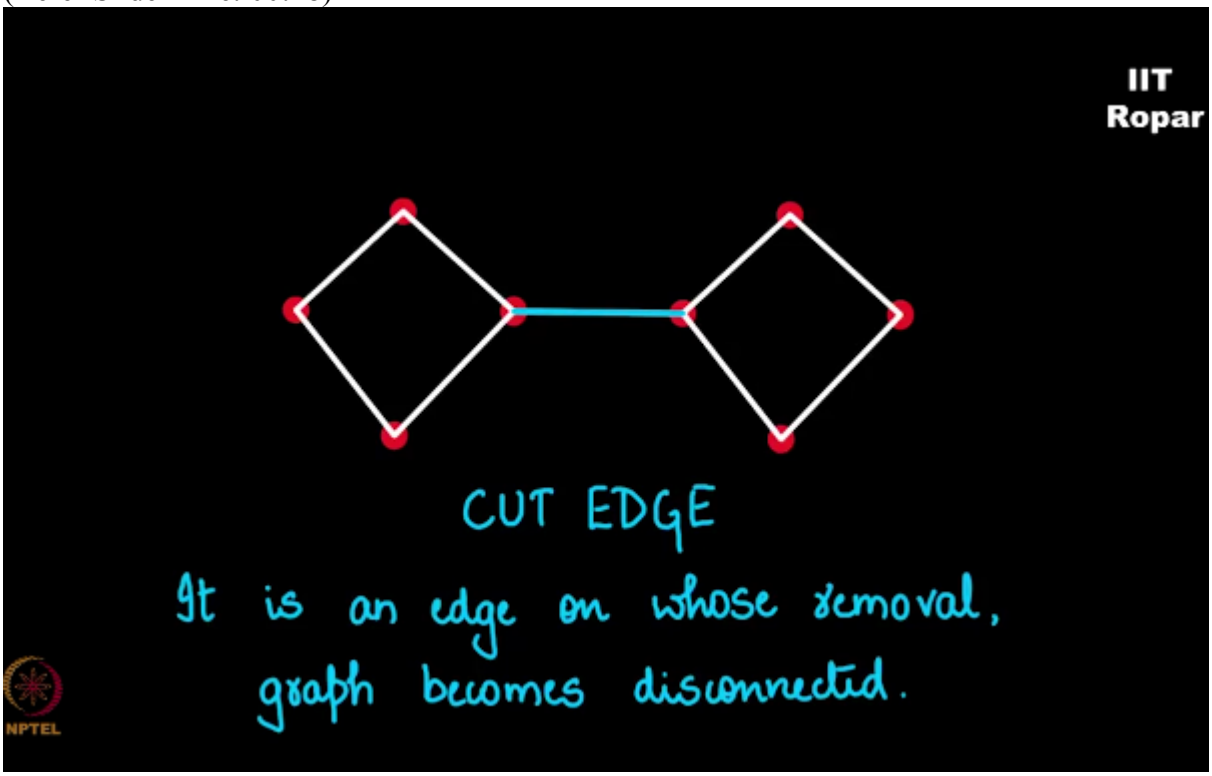
It becomes disconnected, this edge which was acting like a bridge between this portion and this portion is called as a cut edge,

(Refer Slide Time: 00:37)



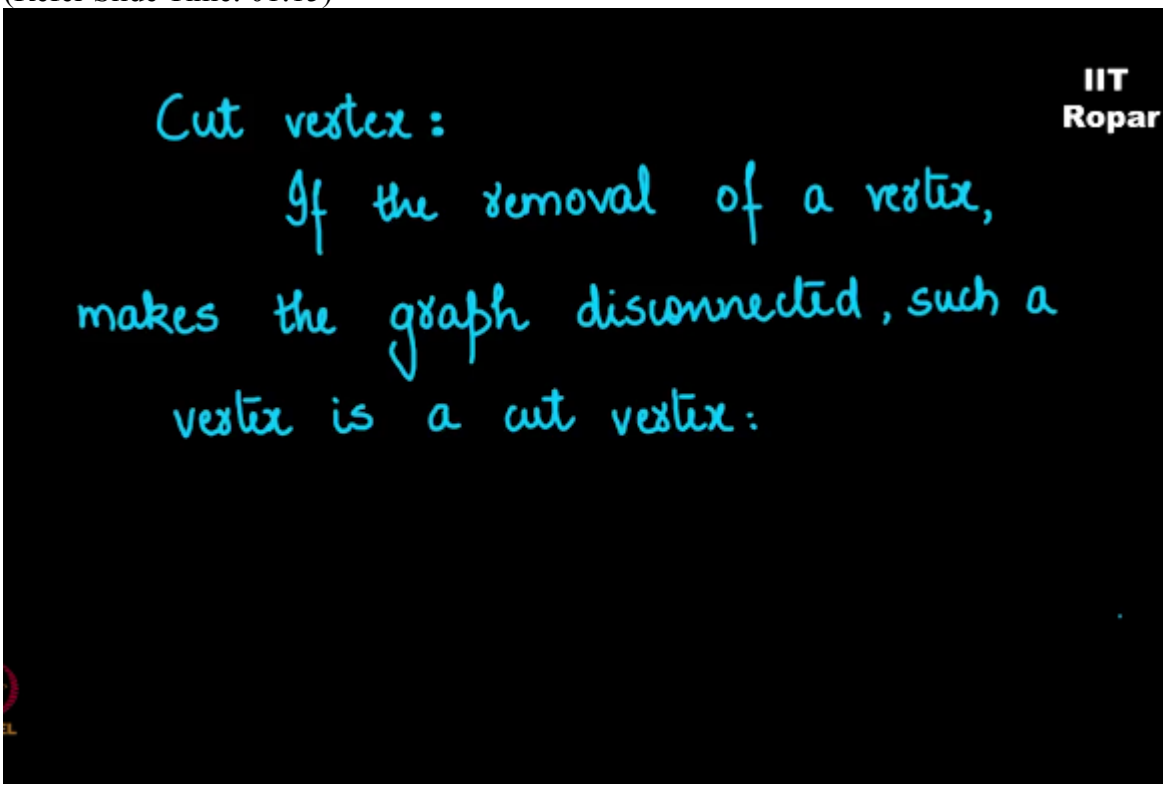
now what do we mean by cut edge? To state it formally it is an edge by whose removal the graph becomes disconnected,

(Refer Slide Time: 00:48)



so if you remove an edge which makes the graph disconnected such an edge is called a cut edge.

So we have seen what is a cut vertex and a cut edge, both are analogously the same, a cut vertex is a vertex removal if it makes the graph disconnected
(Refer Slide Time: 01:15)



such a vertex is called as a cut vertex, and the same goes through for a cut edge that is by its removal, then the removal of such an edge, if the graph becomes disconnected it is called a cut edge.

IIT MADRAS PRODUCTION

Founded by
Department of Higher Education
Ministry of Human Resources Development
Government of India

www.nptel.iitm.ac.in

Copyrights Reserved