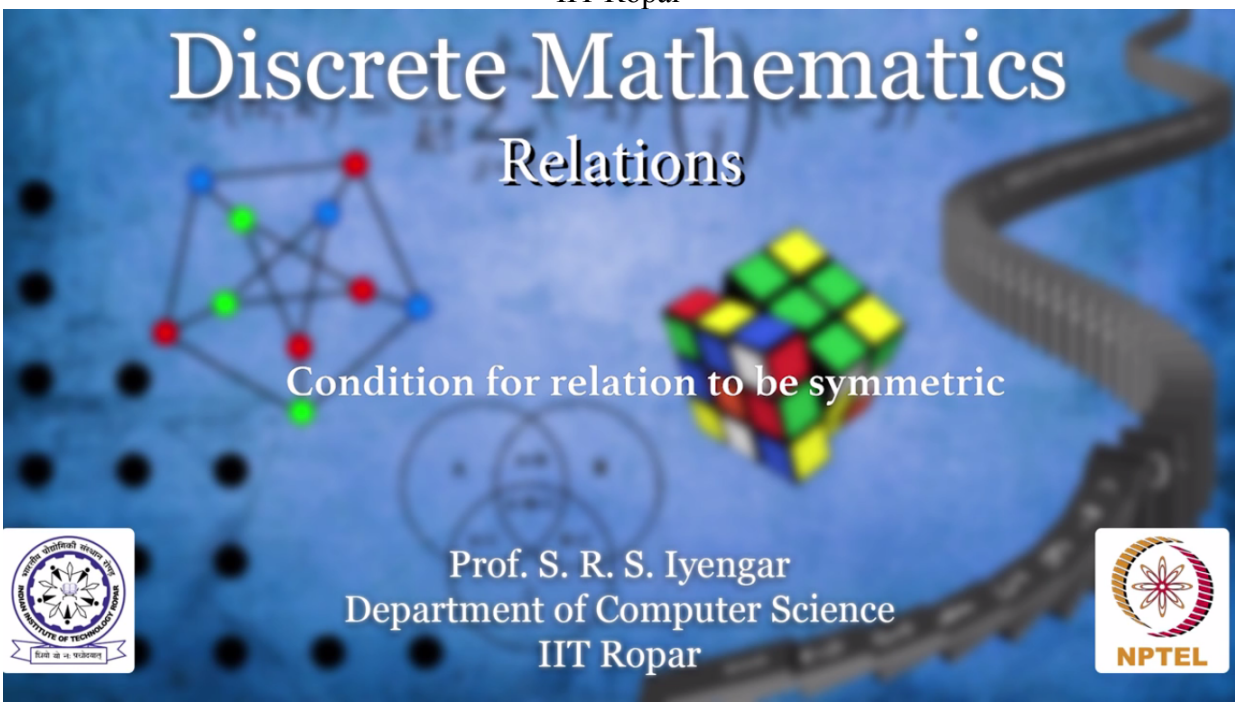
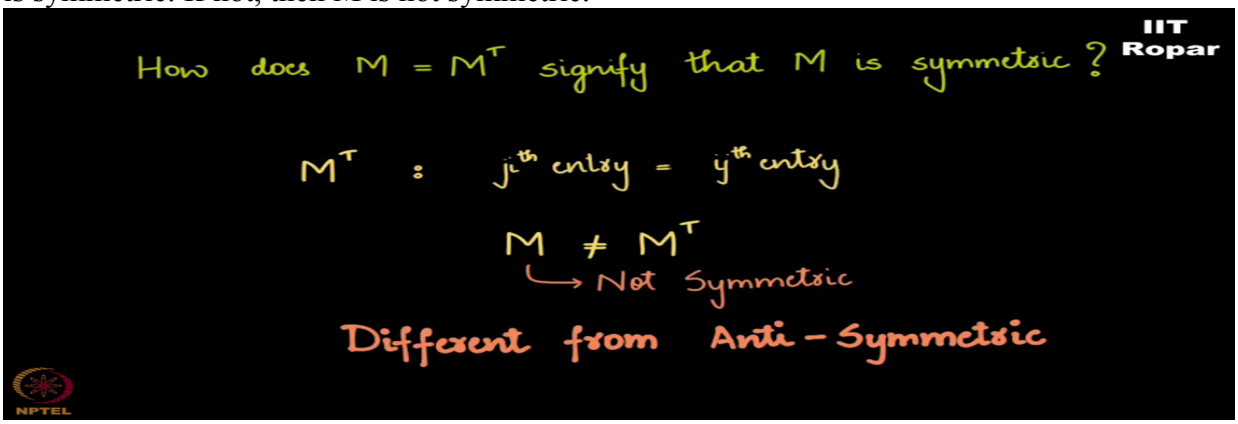
NPTEL
NPTEL ONLINE COURSE
Discrete Mathematics Relations
Condition for relation to be symmetric
With
Prof. S.R.S. Iyengar
Department of Computer Science
IIT Ropar



How does $M = M^T$ signify that M is symmetric? Observe. Symmetric means ij^{th} entry should be equal to ji^{th} entry. When you take the transpose of M, your ij^{th} entry becomes ji^{th} entry. Your ji^{th} entry becomes ij^{th} entry and when you say it should be equal, you are essentially saying the same thing; the ij^{th} entry should be equal to ji^{th} entry. The English statement of ij^{th} entry should be equal to ji^{th} entry is captured by this mathematical equation M should be equal to M^T, then M is symmetric. If not, then M is not symmetric.



A word of warning, not symmetric is different antisymmetric. I leave it to you to observe what I just now said.

Online Editing and Post Production

Karthik
Ravichandran
Mohanarangan
Sribalaji
Komathi
Vignesh
Mahesh Kumar

Web-Studio Team

Anitha
Bharathi
Catherine
Clifford
Deepthi
Dhivya
Divya
Gayathri
Gokulsekar
Halid
Hemavathy
Jagadeeshwaran
Jayanthi
Kamala
Lakshmipriya
Libin
Madhu
Maria Neeta
Mohana
Mohana Sundari
Muralikrishnan
Nivetha
Parkavi
Poornika
Premkumar
Ragavi
Renuka
Saravanan
Sathya
Shirley
Sorna
Subhash
Suriyaprakash
Vinothini

Executive Producer

Kannan Krishnamurty

NPTEL Coordinator

Prof. Andrew Thangaraj
Prof. Prathap Haridoss
IIT Madras Production
Funded by
Department of Higher Education
Ministry of Human Resource Development
Government of India
www.nptel.ac.in