

Demystifying Networking
Prof. Sridhar Iyer
Department of Computer Science and Engineering
Indian Institute of Technology, Bombay

Lecture - 01
Introduction

I am Shridhar Iyer Professor in the Department of Computer Science Engineering as well as the Interdisciplinary Program in Education Technology at IIT Bombay. This course on Demystifying Networks is meant for students who do not have a core CS background. Everybody has grappled with questions like how does some technology work and so on. And usually when we look up the technology, there is a lot of jargon that comes which hinders the understanding of the technology at a conceptual level. So, this course is meant to provide a conceptual understanding of some key concepts in networking.

Hence the course will not going to excruciating details of any specific technology nor will the course remain at a very broad level. One other thing that we are trying to do through this course is to relate the concepts to examples that we see in everyday life. Hence there are analogies, there are puzzles and that's the format in which we are trying to create this course. The topics in this course will involve some of the standard topics in networking such as layering, addressing, routing as well as some concepts from security, troubleshooting.

Essentially, what we will try to do is we will try to look at a network from an end to end perspective, such as a client connecting to a web server and we will try to go through all the layers and what happens at each layer to understand the key concepts involved in the process of sending a request to a server and getting the response. The format of the course will be that first we will start with posing a problem, it might be in the form of an animation or it might be in the form of a text that you have to read and then you discuss this amongst your peers. So, there will be a focus question which each of you is expected to answer in the discussion forum and discuss with each other.

Then the week starts where we summarise this problem and identify what are the key takeaways from discussing this problem. After we have done that this entire thing has happened in a real life scenario, after we have done that then what we do is move to the corresponding technical concept, we will try to relate it to the corresponding concept in networks, where a similar ideas are being used and try to learn it in the technical sense. After that of course, you will have to

do some practice. So, there is some activity that you will have to do, maybe in the form of multiple choice questions or maybe you may have to download a packet tracer and work with some files offline. All of these we will provide you with instructions. So, you need not worry about it at this point.

Once that is done we will repeat this for another topic. So, in each week we will largely try to keep it so that, we do a discussion of two topics, the technical concepts for two topics and the corresponding practice for two topics. At the end of it, we will summarise the week for you and lead into an assignment. Of course, there is no getting away from the assignments. This course will not run in a typical format of showing of slides and having instructors talking head videos. In order to make it engaging for you, what we have attempted is to create the course in a conversational style. So, there will be dialogues which will actually drive the learning of the concepts. The dialogues will be sometimes with me and my PhD students, who are the teaching assistants for this course, sometimes it may be just the teaching assistants conversing with each other and sometimes it may be screen captures and voice overs. In blending all these different formats together we have tried to make sure that the course is interesting for you at all times. Now, let me introduce the teaching assistants for this course.

Hello, I am Kavya Alse. I am a PhD student in the Interdisciplinary program in Educational Technology, IIT Bombay.

Hello, my name is Ashutosh Raina and I am also a PhD student in the Interdisciplinary program in Educational Technology, IIT Bombay.

Welcome to this course on Demystifying networks, we hope you enjoy the journey along with us.