



<b>Event:</b>	<b>SEMINAR</b>
<b>Topic:</b>	<b>Fundamentals of Networks &amp; Embedded Systems, IOT</b>
<b>ResourcePerson:</b>	Mr.Naveen Kumar, Lt. Col Shoibal Chaterjee, Mr.Siddharth
<b>Schedule:</b>	9:45 am onwards
<b>Date:</b>	6 <sup>th</sup> August, 2021
<b>Day:</b>	Saturday
<b>Venue:</b>	Online MS Team Platform
<b>Faculty Incharge:</b>	Ms.Sania Kukkar, Dr.Sonal Dhiaya, Ms. Ayushi Dewan, Dr.Deepak Sonker ,HOD (BCA)
<b>No of Participants :</b>	<b>52</b>

### **Objectives:-**

To learn about:-

- To be aware about fundamentals of computer networking.
- To understand embedded system and applications.
- To learn network simulation process.
- To have an insight to day to day uses of IOT with embedded system

### **Report of Seminar on Fundamentals of Networks & Embedded Systems, IOT:**

Tecnia Institute of Advanced Studies organized a seminar on 6<sup>th</sup> August ,2021. Students of BCA 2<sup>nd</sup> semester& BCA 4<sup>th</sup> semester have taken participation in this Seminar. The Seminar was divided into module and sub modules are:

1. Introduction to Data & Networking
2. Fundamentals & Components of IPV4 and IPV6
3. Tools & Technologies for Subnetting
4. MAC and IP address implementation
5. IOT Devices( Respberry PI, Arduino, Node MCU)
6. Home Automation
7. Cisco Packet Tracer

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The Seminar started with a welcome speech by Dr. Deepak Sonker, H.O.D of BCA department. In his welcome speech, he asked students to remain focused on Seminar and to put their constant efforts to achieve excellence, learn new innovative things and discussed the significance of Advanced Networks. The Seminar was followed by the introduction speech by Mr. Shoibal Chatterjee and describe in brief about the importance of networking these days. He further continued by explaining the benefits of Network adaptations in future. The Seminar was then carried forward by Mr. Naveen Kumar, Founder and CEO of EMTECH FOUNDATIONS and in the last by Mr Siddharth Tiwari , Presently working with Networking Lions.

**Addresses in a NAT**

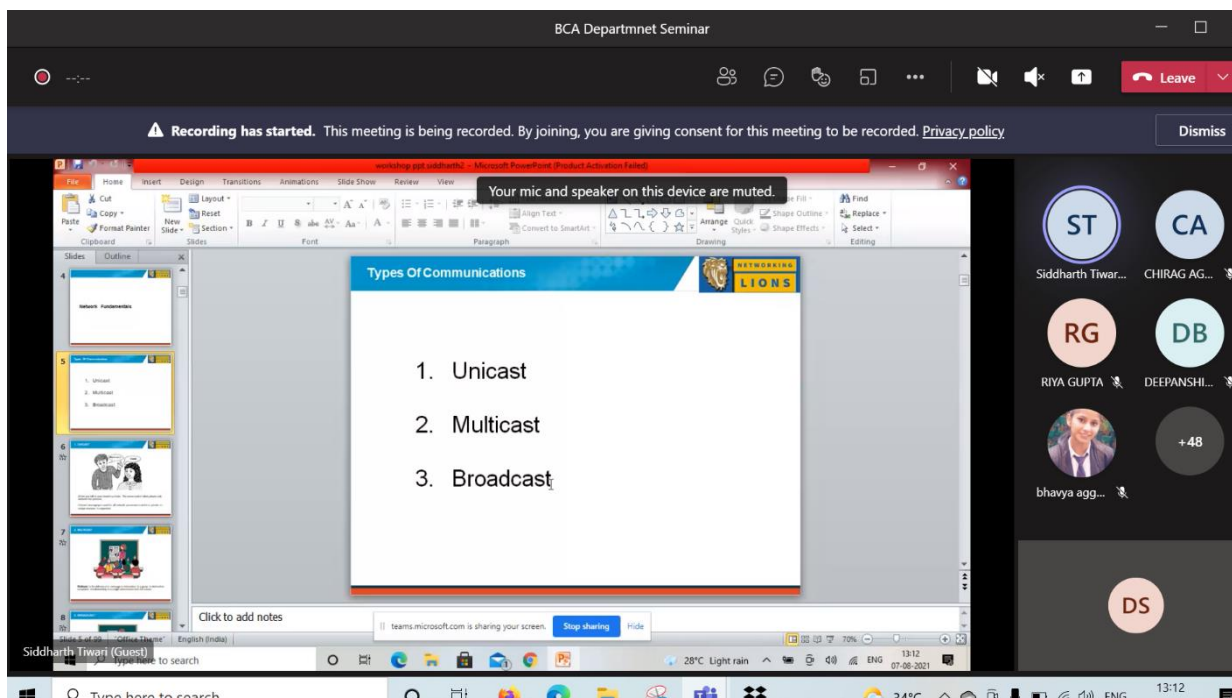
The diagram illustrates a NAT router (pink circle) between a private network (yellow dashed box) and the Internet (oval). On the private side, a host with IP 172.18.3.1 sends an outgoing packet with source 172.18.3.1 and destination 172.18.3.1. The NAT router replaces the source address with the global NAT address 200.24.5.8. On the Internet side, the packet has source 200.24.5.8 and destination 200.24.5.8. An incoming packet from the Internet with source 200.24.5.8 and destination 200.24.5.8 is received by the NAT router, which replaces the destination address with the appropriate private address 172.18.3.1.

- All the outgoing packets go through the NAT router, which replaces the source address in the packet with the global NAT address.
- All incoming packets also pass through the NAT router, which replaces the destination address in the packet (the NAT router global address) with the appropriate private address.

## Seminar on Data network fundamentals

**Brief History.....**

- Software called the **Network Control Protocol (NCP)** provided communication between the hosts.
- In 1972, **Vint Cerf and Bob Kahn**, both of whom were part of the core ARPANET group, collaborated on the Internetting Project 1.
- **Cerf and Kahn's landmark 1973** paper outlined the protocols to achieve end-to-end delivery of packets. This paper on **Transmission Control Protocol (TCP)** included concepts such as encapsulation, the datagram, and the functions of a gateway.
- Shortly thereafter, authorities made a decision to **split TCP into two protocols: Transmission Control Protocol (TCP) and Internetworking Protocol (IP).**
- **IP** would handle **datagram routing** while **TCP** would be responsible for **higher-level functions** such as segmentation, reassembly, and error detection. The internetworking protocol became known as **TCPIP**.



Mr. Shoibal explained in detailed about the real world examples also explained the use and importance of unicast, multicast and broadcast networks. In the end of the Seminar, there was a question-answer round, where the students clarified their doubts regarding Networking certifications.

### Learning Outcomes:-

- Student Have learn about fundamentals of computer networking.
- Student Have learn embedded system and applications.
- Student Have learn network simulation process.
- Student Have learn uses of IOT with embedded system

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S.no	Enrollment number	Name of student
1	117002020	Harshitbansal
2	717002020	Vaibhavsethi
3	817002020	kunikamaindola
4	1117002020	Bhavya sharma
5	1317002020	diksha dureja
6	1817002020	Govind
7	1917002020	Kunalkumar
8	2017002020	Anadita
9	2117002020	Vasu Jain
10	2217002020	Yash sharma
11	2517002020	Bhumikagogna
12	2717002020	Muditmarkan
13	2917002020	Adityagoyal
14	3517002020	Yash parshar
15	3617002020	Vanshikaaggarwal
16	3817002020	Bhavya aggarwal
17	3917002020	Anshgupta
18	4017002020	Priyanshi
19	4317002020	Prachi garg
20	4617002020	Geetanshiarora
21	3017002020	Darsh verma
22	3517002020	Anjali jain
23	3617002020	Yamini mishra
24	3717002020	Jethin Thomas
25	3817002020	Rishabh
26	4117002020	Manav gupta (Guest)
27	4217002020	Janualabdin
28	4317002020	Shivani
29	4517002020	Abhishek Roy
30	4617002020	Sudipto
31	3017002020	Chahat
32	3117002020	Ayushi Panwar
33	3317002020	Ujjwal
34	3417002020	Nakul gupta
35	3517002020	Dhruv Rawat
36	3617002020	Yash bisht
37	3717002020	Aditya tiwari
38	3817002020	Deepanshu
39	3917002020	Manav khanna
40	4017002020	Ashima khurana
41	4117002020	Avinashkumar
42	4217002020	Sanyaverma
43	4317002020	Naman jain
44	4417002020	Vipin
45	4517002020	Harsh Tanwar
46	4617002020	Shubhsm

47	2517002020	Archit
48	2617002020	Gaurav sethi
49	2717002020	Deepanshi Bansal
50	2817002020	Sanyam
51	2917002020	Deepanshu tomar
52	4218002020	Ishti



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