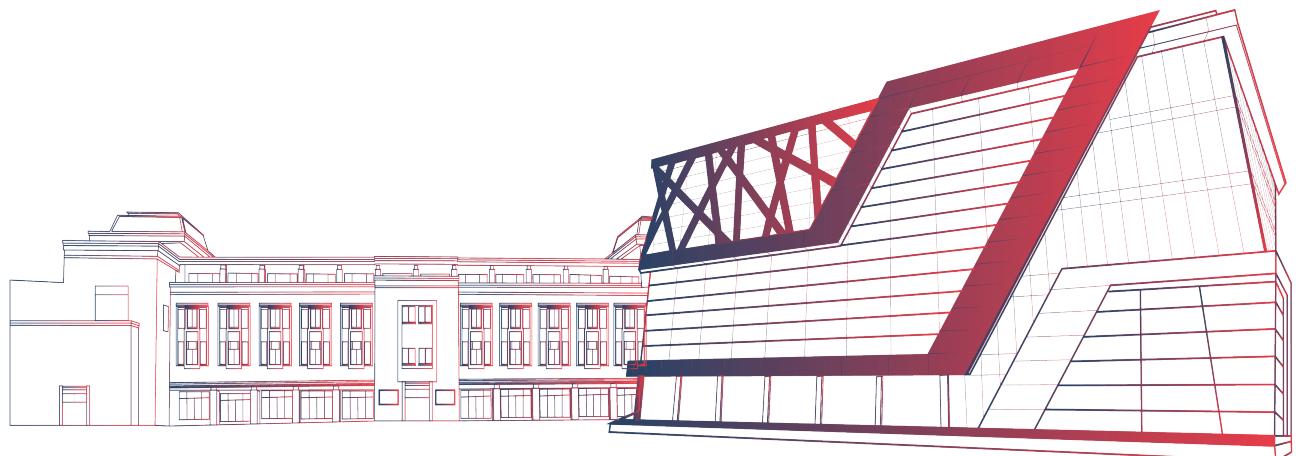
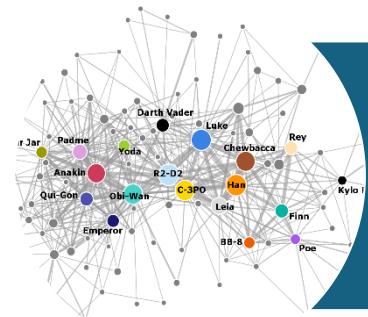


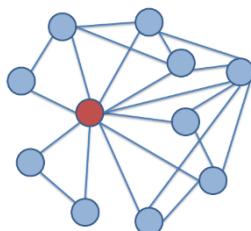
Introduction to Networks



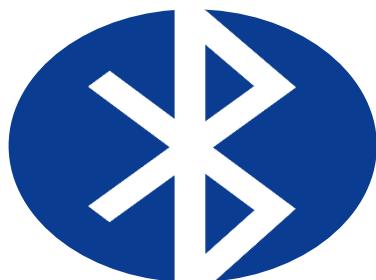
Introduction to Networks



Network: Interconnection of two or more devices with each other for a common purpose



i.e. sharing which can be peripheral devices or can either be any information.



E.g. Bluetooth calling, nodes, devices



Types of Networks

Intranet-

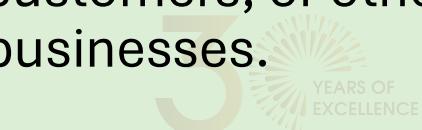
- Within self (not connected to some one else)

Internet-

- ????????

Extranet-

- Some authenticated customers/ An **extranet** is a private network that uses Internet technology and the public telecommunication system
- To securely share part of a business's information or operations with suppliers, vendors, partners, customers, or other businesses.



Types of Networks

What is the difference between an intranet and extranet?

An intranet:

- is a network where employees can create content, communicate, collaborate, get stuff done, and develop the company culture.

An extranet:

- is like an **intranet**, but also **provides controlled access to authorized customers**, vendors, partners, or others outside the company

How you get connected to the network/Internet ?



NIC (Network Interface Card/controller)

There are two types of address :

Virtual address :

- IP address which might change from place to place

Physical address :

- that remains constant throughout like your MAC address.

Virtual Address

How to find IP
address (Find the IP
address of your
Machine?)

Ipconfig??

Ifconfig??



IP Address

IP Address

Name or Identity
of the System

It keeps on
changing from
place to place

Physical Address

How to find MAC address
(Find the MAC address of
your Machine?)

Command->

getMAC

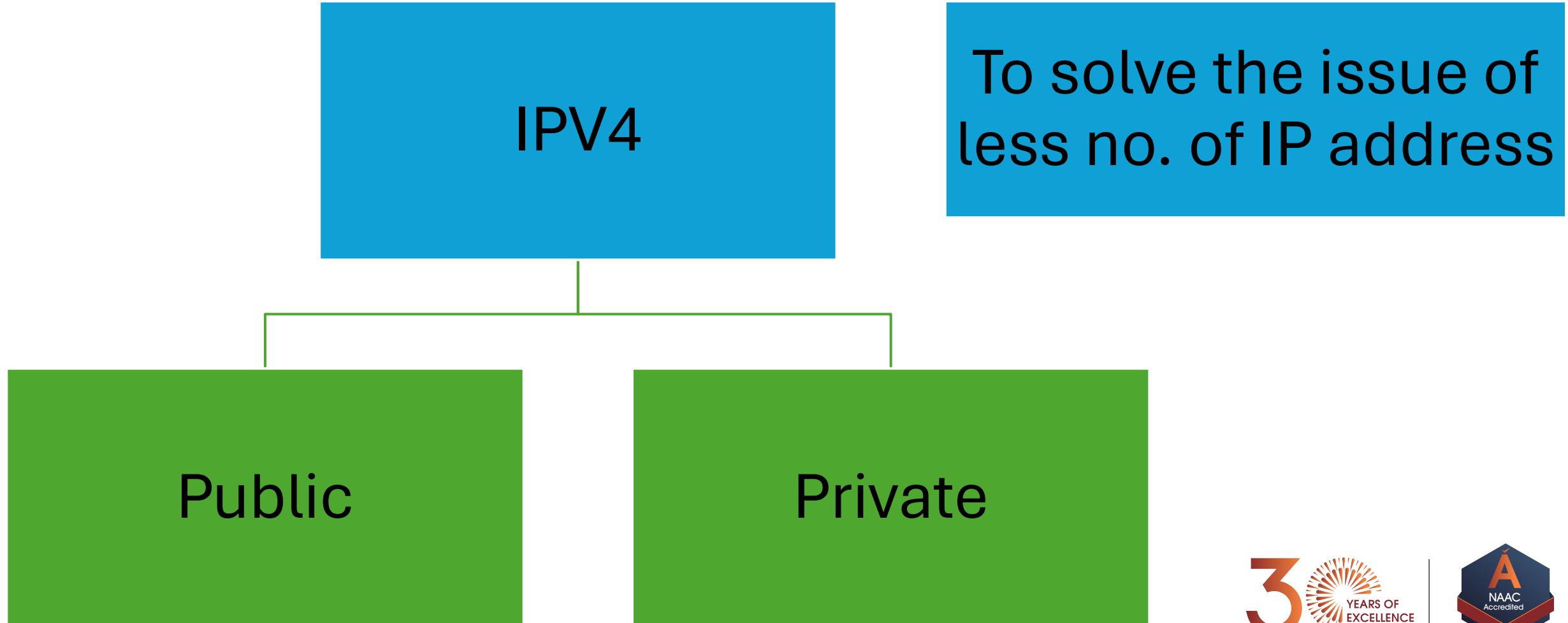
IPV4

IPv4 uses a 32-bit address scheme allowing for a total of 2^{32} addresses (just over 4 billion addresses)

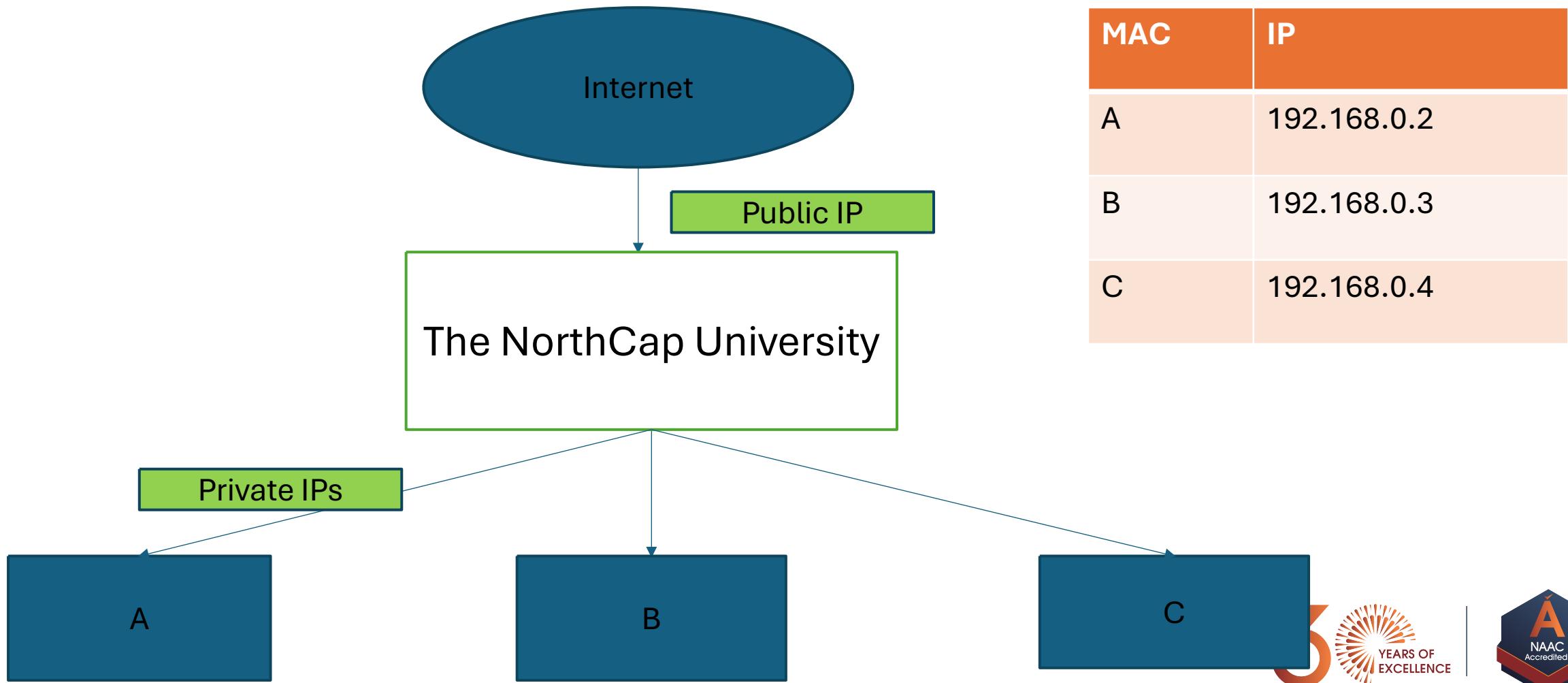
e.g.

- 172.16.149.1
- 0000000.0000000.0000000.0000000
= 32 bit

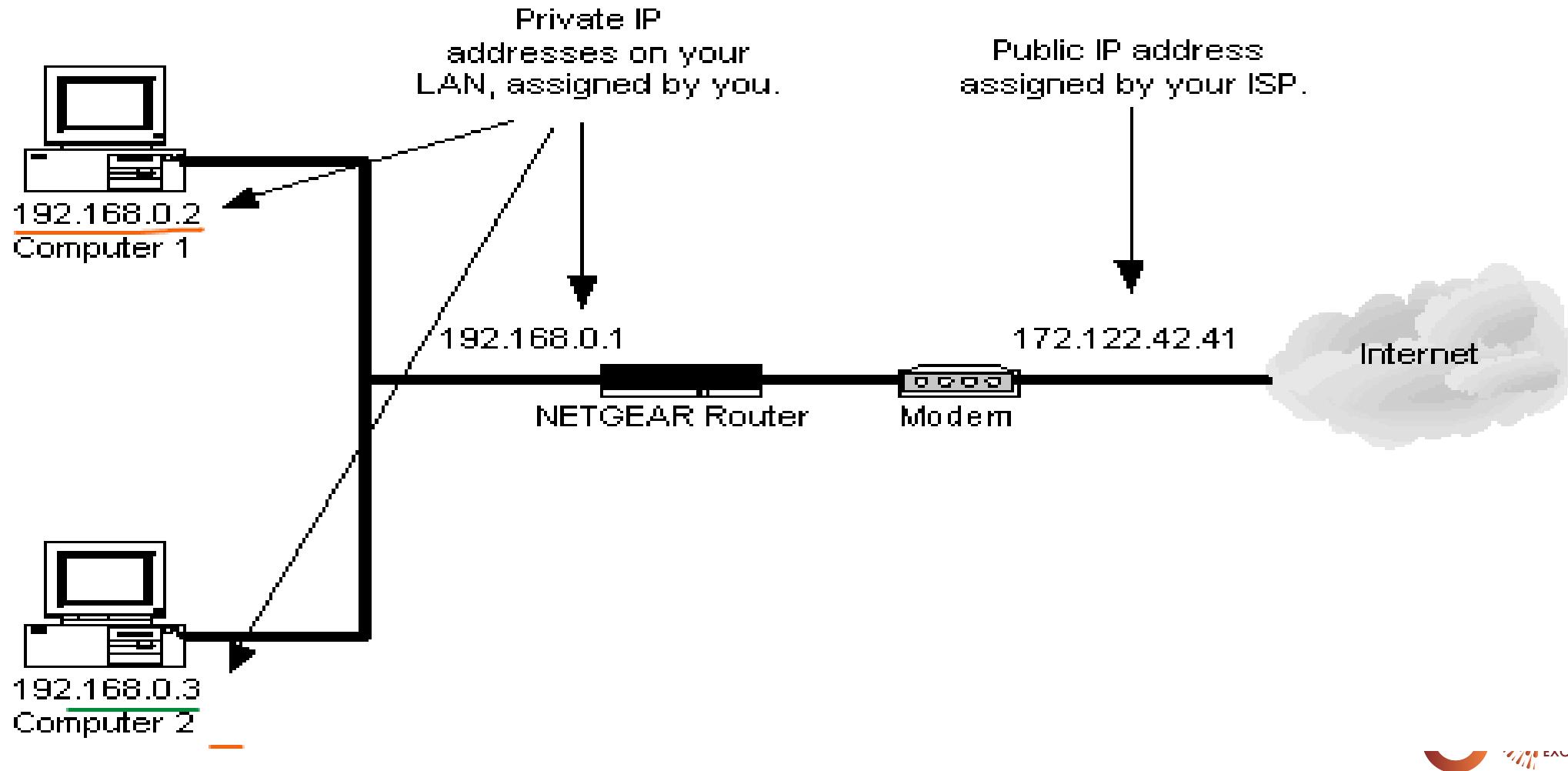
IPV4



How IPV4 is still solving the problem?



IP address



Types of IP

Internal | Private |
Local

- ipconfig
- ifconfig

External | Public |
Global

- myipaddress
- ipcow.com
- ipchicken.com
- Search ->what is my IP address

In class task-10 mins

Q1. Explain

Default Gateway

Subnet Mask

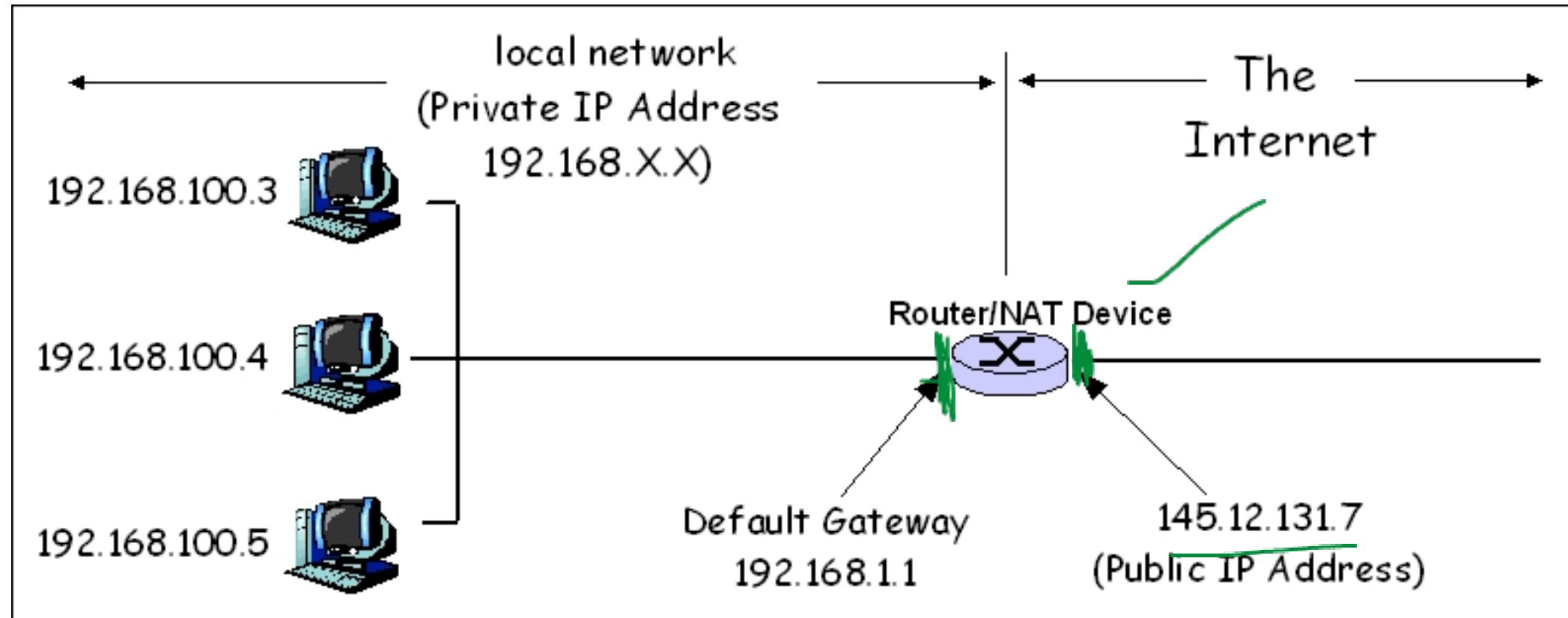
Public IP

Hint- Gateway IP and
Public IP are not same

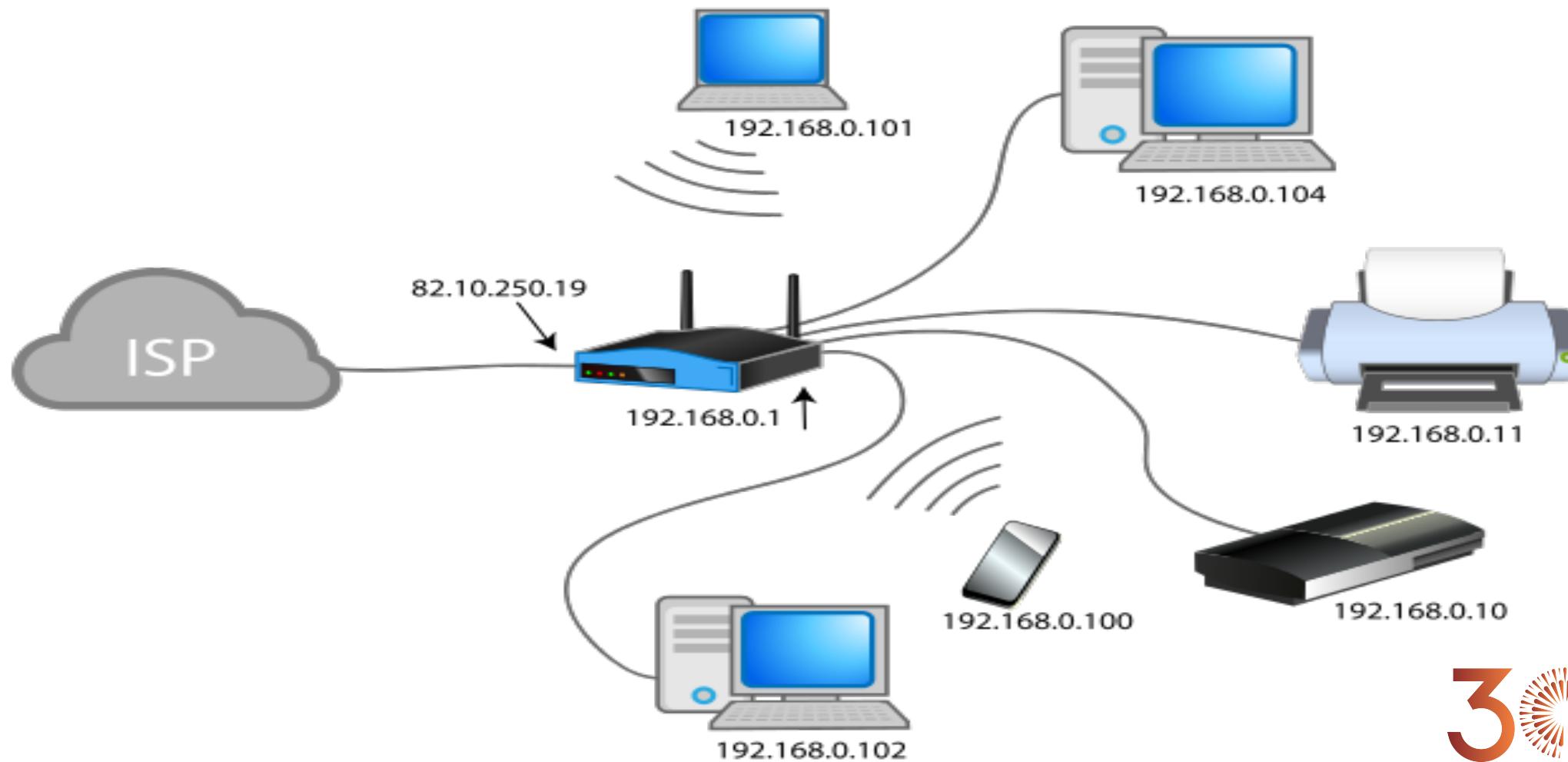
Q2. Who Provides IP
address??

Hint: ISP (what is ISP
and its role)

Default Gateway/ Public IP Address



ISP



IPV4

32 bit address. E.g.

192 = 11000000

168 = 10101000

128 64 32 16 8 4 2 1

192= 1 1 0 0 0 0 0 0

168= 1 0 1 0 1 0 0 0

IPV6

IPv6 addresses are 128-bit IP address written in hexadecimal and separated by colons.

An IPv4 **address** is 32 bits and expressed in dotted-decimal notation, whereas an **IPv6 address** is 128 bits in length and written in hexadecimal.

The groups are separated by colons (:). An **example** of an IPv6 address is:

2001:0db8:85a3:0000:0000:8a2e:0370:7334