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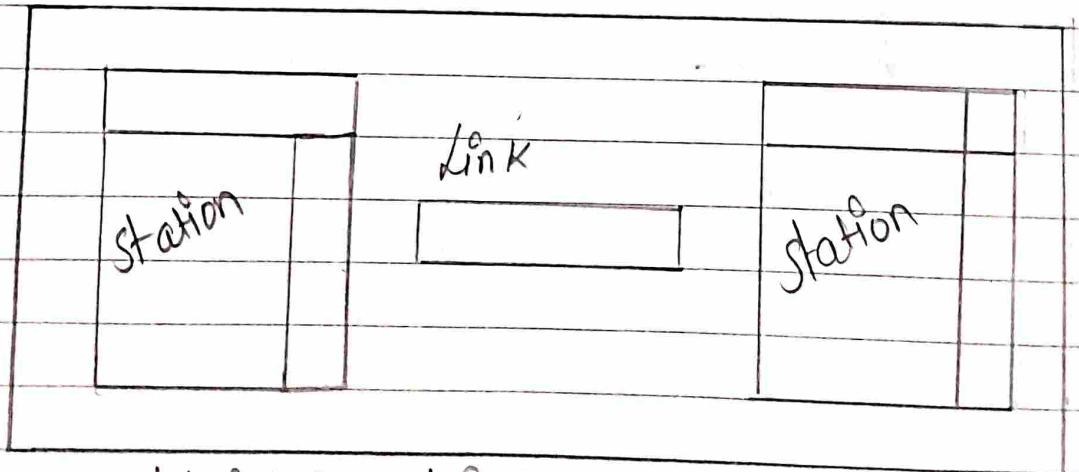
Assignment → 2
Data Communications

Q1 What are the different types of networks ?

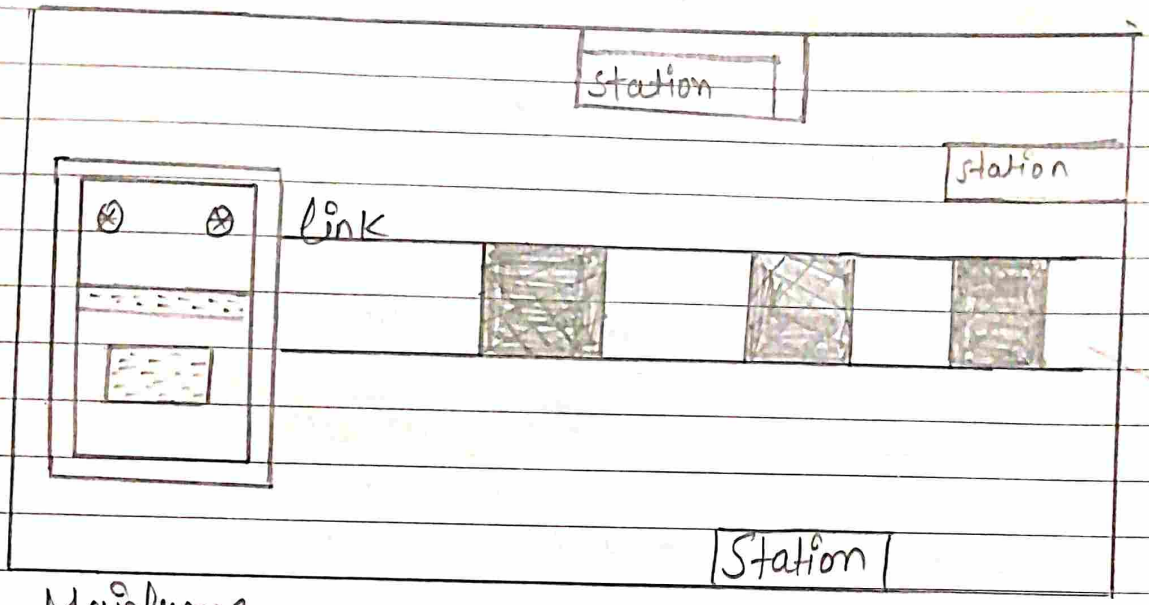
Ans A network is a set of devices often referred to as nodes connected by communication links to share the computing resources.

A node can be a computer, printer, smart phone, refrigeration, car or any other device capable of sending and/or receiving data generated by other nodes on the network.

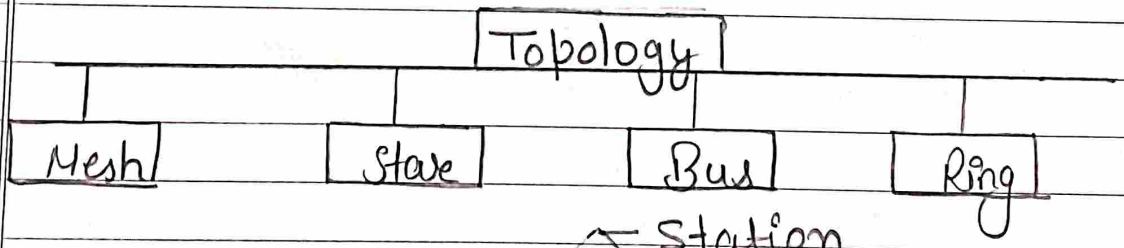
Types of connection :
Point at point
Point - to - multipoint
point - to - point vs point - to - multipoint.



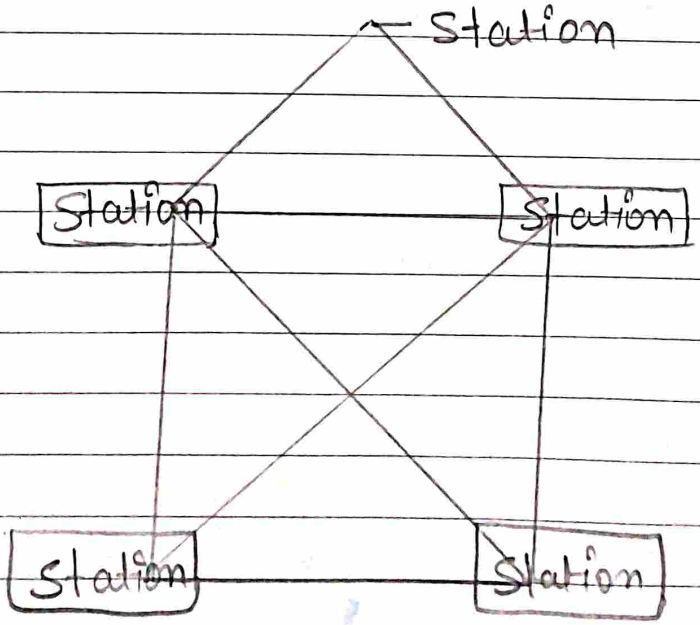
A point to - point



Types of Topologies



Mesh



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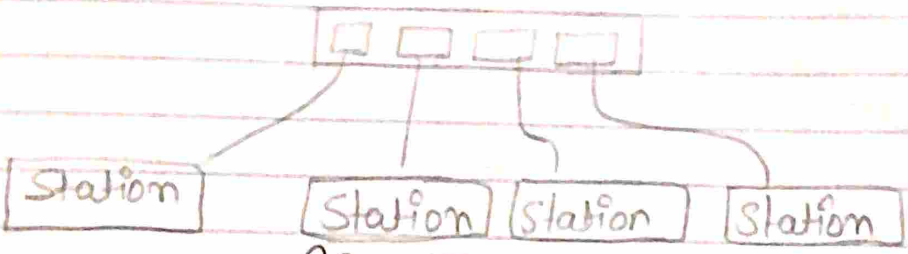
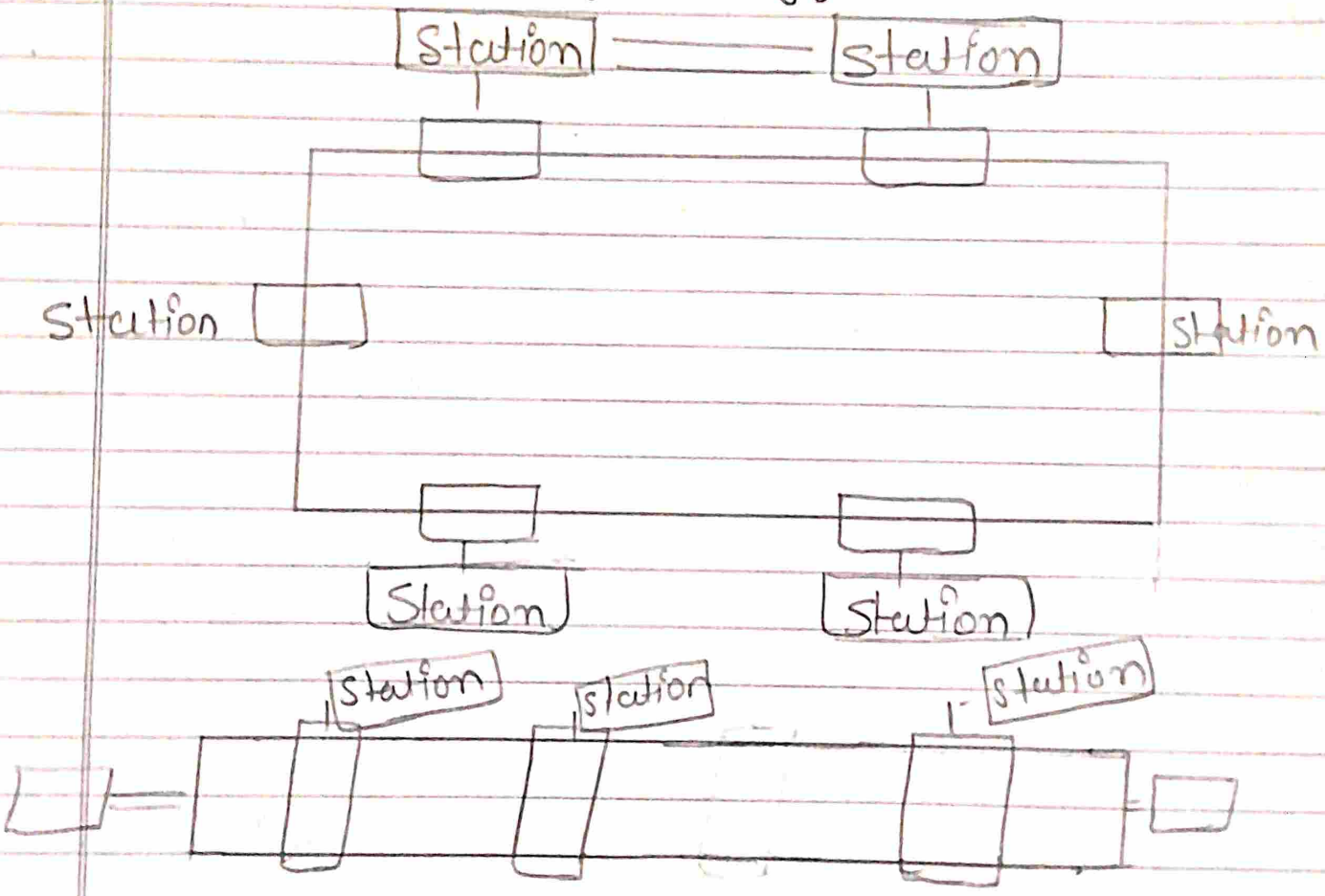
Star Topology



Ring Topology



Ans :- A local area network (LAN) is usually privately owned and links the devices in a single office building or campus as shown in figure

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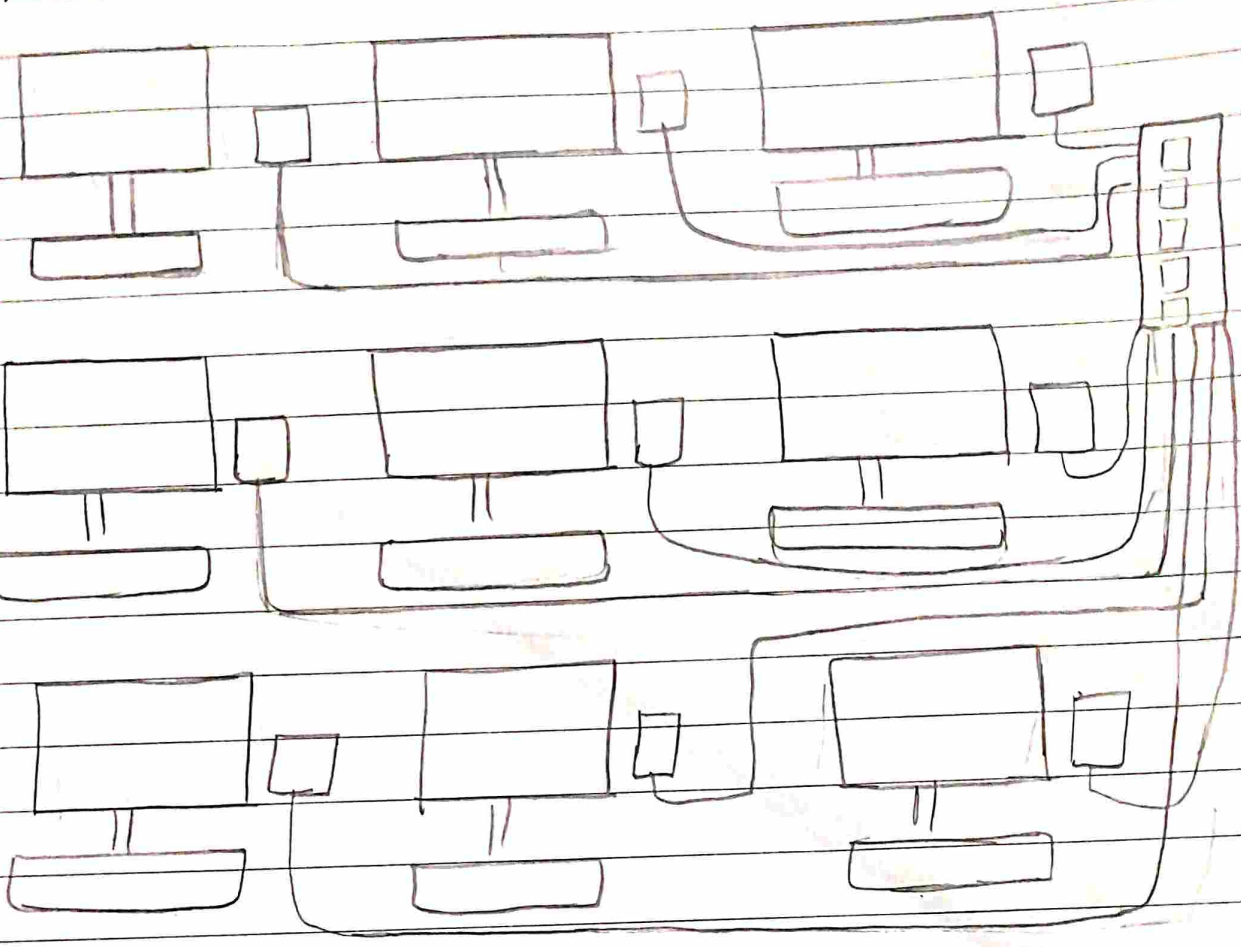
given blow.



Lan Cont

Depending on the needs of an Organization and the type of tennalogy used a lan can be as simple as two PCs and a printer in Someone home office or it can extend through a Company and include audio vedio peripheras.

Currently lan size is limited to a few KMS lans are designed to allow resources to be share between personal Computer or work stare

printer, software, log, and application program are data.
One of the computer may be given a large capality disk drive and may become a server to clients software can be stored on this central server and used as needed by the whole group. In addition to size lans are distingoished from other types of network their transmission media and topology.

WAN (wide area network)
A wide area network (WAN) provides long-distance transmission of data may audio video information over large geographics areas that may comprise a country a continel or even the whole world A wan can be as the back bones that connect a home computer to the Internet. we normally refer to the first as a witened WAN and to the second as a point to point WAN.

The switched wan connects the end system which usally comprise a (Internet-working connecting device) that connects to another LAN or WA the point to point WAN is normally a line leas from a telephone or cable TV provider that connects a home computer or small lan to an Internet service provider (ISP) this type of WAN

is often used to provide Internet access.

Q2 Explain the Shielded twisted pair (STP) and unshielded twisted pair (UTP)

Ans:- In our modern high tech world are more than just four pair of wires bound together in a casing to connect electronic objects to each other. Cables in fact, are a necessary component that keep our planet connected most of today's connectivity relies on shielded and unshielded cable.

shielded twisted pair Cable (STP) has the individual pair of wires again for double (UTP) has each pair are then wrapped in tubing with out any other protection UTP Cables, are less expensive and a more popular type of cabling knowing which cable to use for a specific application depends on the protection needed from power frequency (EMT) This is where Ushielded Cable become important.

Preventing Electromagnetic Interference (EMT)
Electromagnetic Interference (EMT) or radio frequency Interference (RFT) as it's also referred to is an electronic disturbance generated by external electronic or electrical sources such as electrical

Circuit noise the truth. Is EMI/RET is all around as just like the static you may hear during a phone call the same is true for networking. If the EMT noise is strong enough it may interfere with the actual data traffic and prevent computers from hearing each other has to resend the information a second time the more often the network slows down. thus EMT disturbance can lower. Performance of circuit can be interrupted ranging an increase in Error rate to a complete loss of information.

Q3 What are difference between baseband and broad-band transmission?

Ans In a baseband transmission the bandwidth of the cable is consumed by a single an broad band transmission signals are sent on multiple Singals in the sent simultaneously also.

(I) Uses digital Signaling.
(II) No frequency division multipleting.
(III) Directions transmission.
(IV) Singal travels over short distance.

II) Broadband Singalling :-
I) uses along Signalling.

i) uses an along Signaling.
ii) unidirectional transmission.
iii) Frequency division multiplexing is possible
iv) Signal can travel over long distance before needed.

Q4 What are the difference a hub, modem, router under Switch?

Ans:- In an ethernet network there are some networking devices that pay there roles at various levels such as hubs Switches and routers the function of the three devices are all quite different from one another even if some times they are all integrated in to a Single device due to that many people get confused about the difference between the Switch and routers the following part will focus on the topic hub vs Switch router, comming to classify differences among them.

Hub :- Hub is Commonly used to Connect Segments of LAN (local area network) A hub contain multiple ports when a packet arrives at one port it is copied to the other ports so that all Segments of the

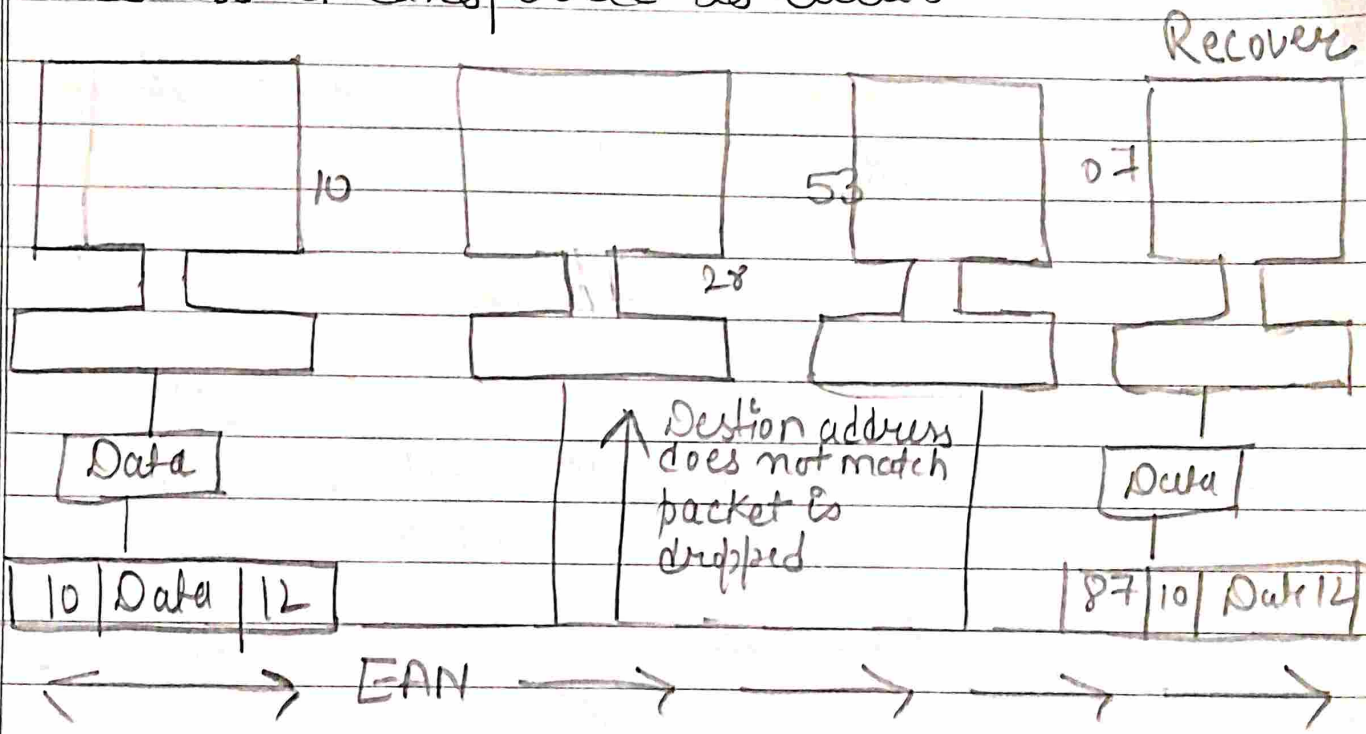
LANICON See all packet them acts as the common connection point for device in a network.

Switch :- A switch operates at data link (layer) and sometimes the network layer (layer3) of the OSI (open system Interconnection) Reference model and therefore support any packet protocols (LANS that use switches to join are called switched ethernet LANS in network, switched. Ethernel LANS in network switched, Ethernel LANS in network the switch is the devies that filters and forwards pockets between LAN segments.

Router :- A router is commected to least two networks commony two LAN and WANS (write area networking) are LAN and US U.S.I.S (interned service navises) network the places where two we more her warks connect. using headers and for warking tonies routes mewe mines the best to forward the pockets in addition routers use protocal to commonicate with each other and figoreas

the best route between any two hosts on a work, routers forwards data packets among networks.

Q5 when you move the NIC cards from one PC to another PC does the MAC address transferred as well?



Q6 when troubles hooting Computer network problems what Common hard ware-related problem can occure?

Ans A large percentage of a network is made up of hardware problems in these can range from malfuctioning hard drives, broken NICS and even hardware start ups

Incorrectly hardware configuration is also one of these culprits to looks

7 In a network that contains two servers and twenty workstations, where is the best to Install an antivirus. Program?

Ans The best Solution is to Install anti-virus on all the Computer in the networks. This will protect each device from the other In Case some malicious user tries to Insert a virus into the Servers as legitimate users.

8 Define Static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.

Ans- when a device is assigned a static IP address the address does not change most devices use dynamic IP address which are assigned by the network when they connect and change over time.

static IPs address :— Most users web-site matter don't need static IP addresses Static Satatic IP addresses devices or websites need to remember your IP

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Q10 what is a web Browser (Browser)? Give Some Example of browser?

Ans:- A web browser or simply browser is an application used to access and view websites common web browser include Microsoft Edge Internet Explorer, Google Chrome Mozila firefox and apple Safari. The primary function of a web browser is to render HTML The Code used to design or mark up web pages.

Q11 what is Search engine? Give example?

Ans:- A Search engine is a web-based tool that enable users to locate information on the word wide web popular example of Search. Search engines are google yahoo! and MSN Search search engine utilize automation Software application (referred to as robots bots or spiders) that travel along the web following links from page to page side to side the Information gathered by the spiders is used to create a Searchable Index of the web.

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Q1² What is the Internet & www? What are the uses of Internet in our daily life?

A1 The Internet is a global network of networks connecting millions of users worldwide via many computer network using a simple standard common addressing system and basic communication protocol called TCP/IP. This allows message sent over the Internet table broken into small pieces called packets which drovel over many difference routes between source and destination computer.
www (world wide web) → www stand for (world wide web)