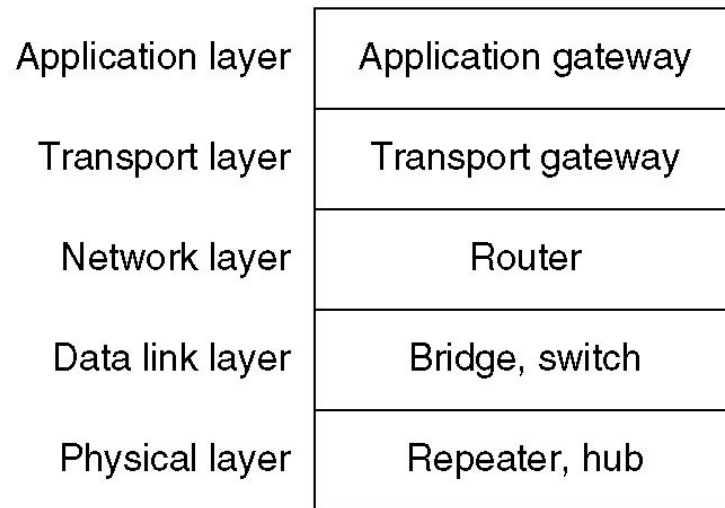


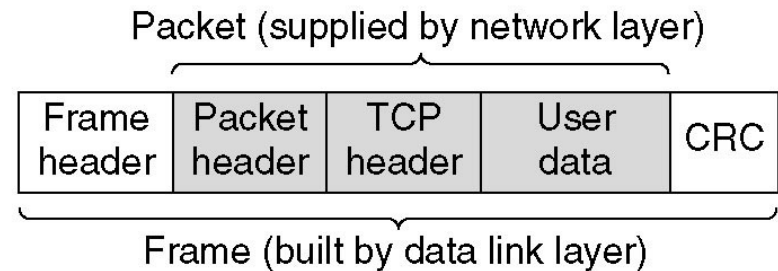
# UNIT-3

## The Network Layer

# Repeaters, Hubs, Bridges, Switches, Routers and Gateways



(a)

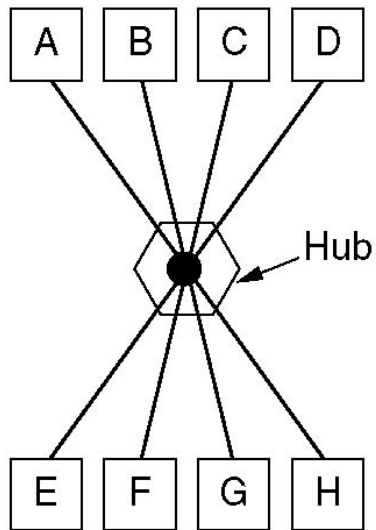


(b)

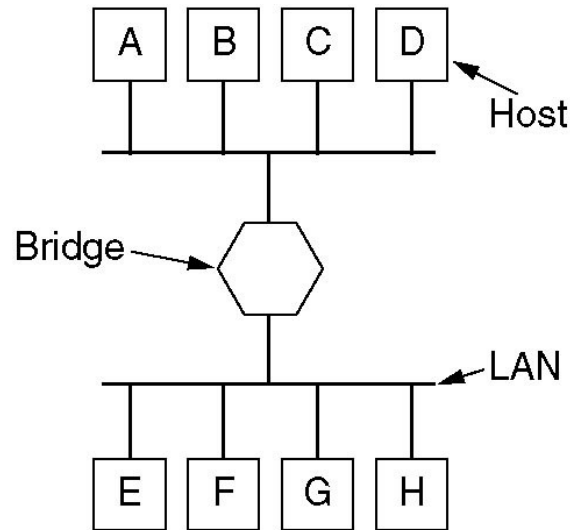
(a) Which device is in which layer.

(b) Frames, packets, and headers.

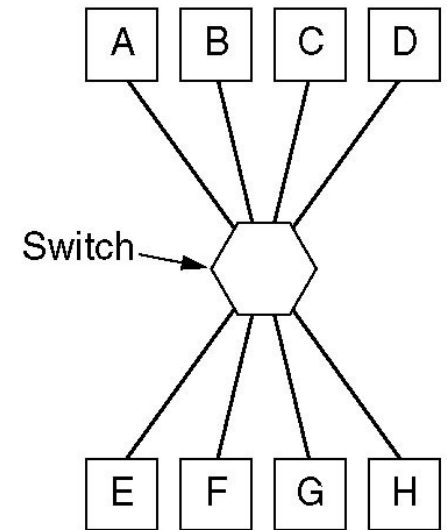
# Repeaters, Hubs, Bridges, Switches, Routers and Gateways (2)



(a)



(b)



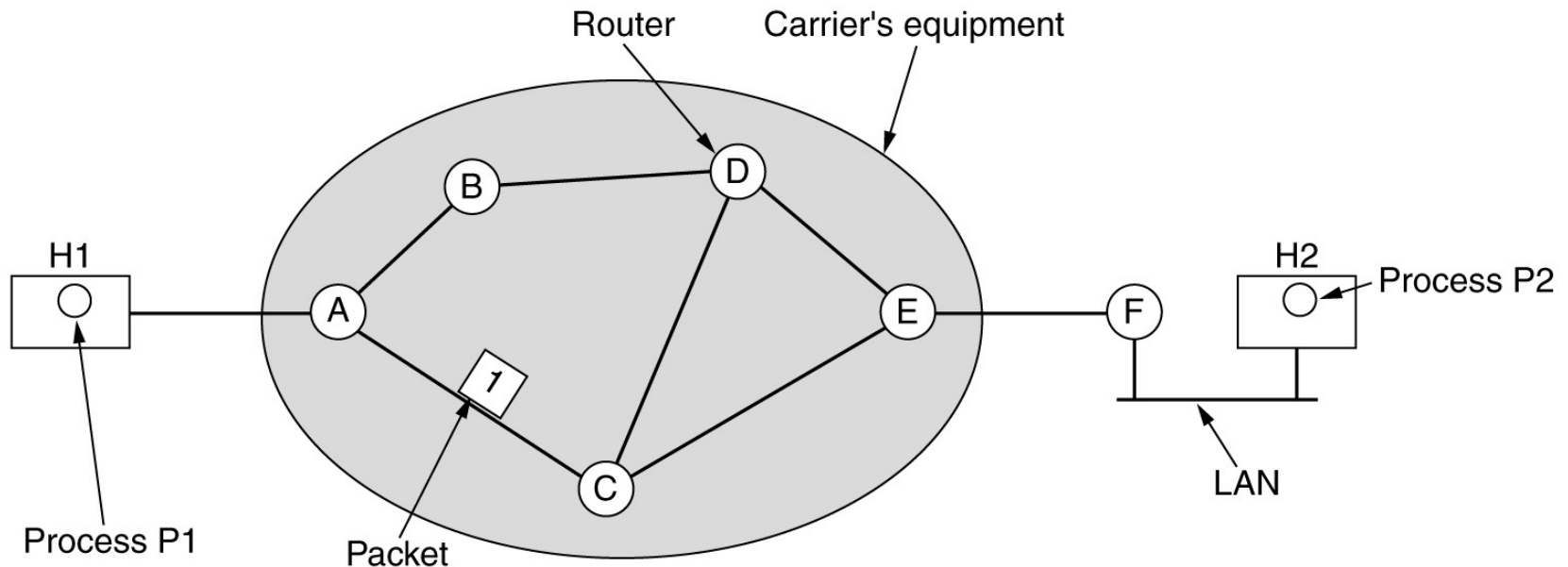
(c)

(a) A hub. (b) A bridge. (c) a switch.

# Network Layer Design Issues

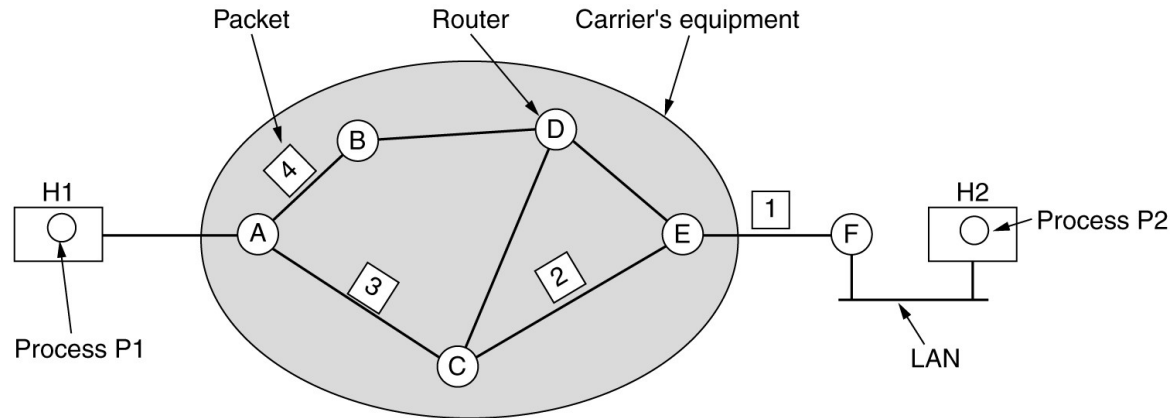
- Store-and-Forward Packet Switching
- Services Provided to the Transport Layer
- Implementation of Connectionless Service
- Implementation of Connection-Oriented Service
- Comparison of Virtual-Circuit and Datagram Subnets

# Store-and-Forward Packet Switching



The environment of the network layer protocols.

# Implementation of Connectionless Service



A's table

	initially	later
A	-	-
B	B	B
C	C	C
D	B	B
E	C	B
F	C	B

C's table

A	A
B	A
C	-
D	D
E	E
F	E

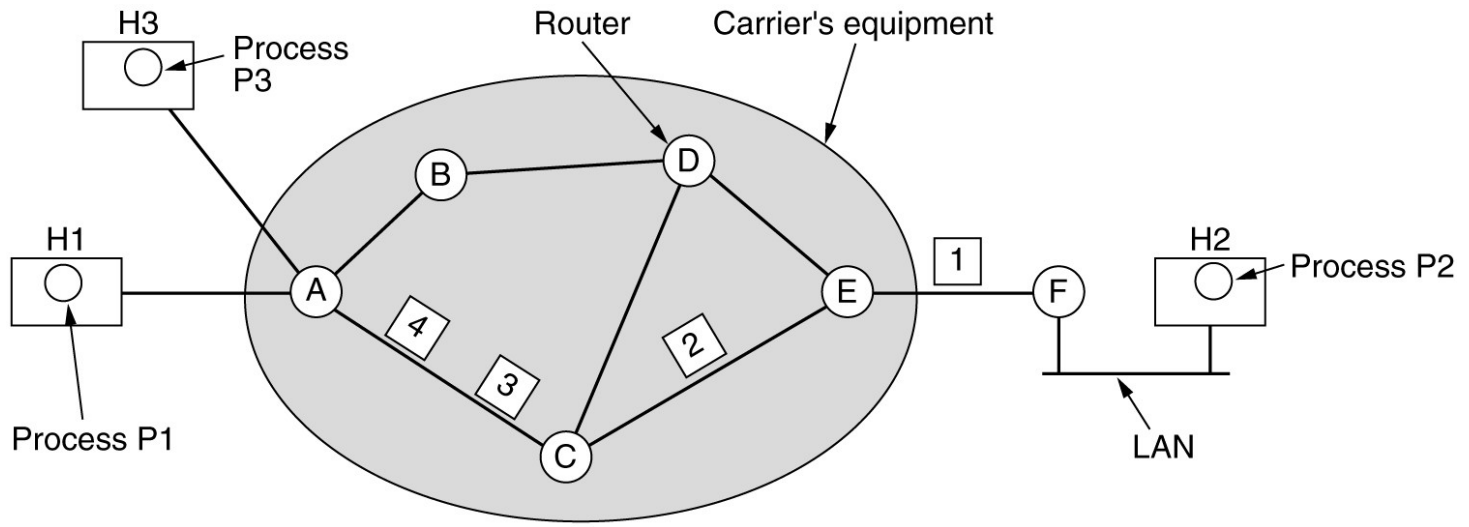
E's table

A	C
B	D
C	C
D	D
E	-
F	F

Dest. Line

Routing within a diagram subnet.

# Implementation of Connection-Oriented Service



A's table		C's table		E's table	
H1	1	A	1	C	1
H3	1	A	2	C	2
C		E		F	
1		1		1	
2		2		2	
In		Out			

Routing within a virtual-circuit subnet.

**Thank you**