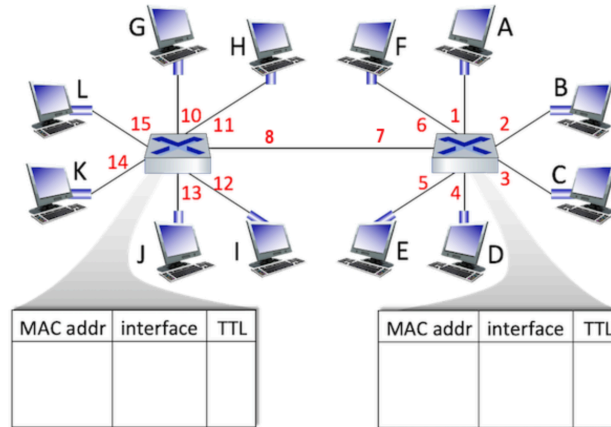


LEARNING SWITCHES - BASIC

Consider the LAN below consisting of 10 computers connected by two self-learning Ethernet switches. (You may want to re-read section 6.4.3 in the 8th edition textbook). At $t=0$ the switch table entries for both switches are empty. At $t = 1, 2, 3,$ and 4 , a source node sends to a destination node as shown below, and the destination replies immediately (well before the next time step).



Assume that the following transmissions occur (the transmissions in reply occur but are not shown in the list below):

t=1: H -> C
t=2: K -> H
t=3: C -> D
t=4: I -> K

SOLUTION

- At time $t=1$, (H,7) is added as an entry to switch table 1.
- At time $t=1$, (C,3) is added as an entry to switch table 1.
- At time $t=1$, (H,11) is added as an entry to switch table 2.
- At time $t=1$, (C,8) is added as an entry to switch table 2.
- At time $t=2$, switch table 1 doesn't observe this frame
- At time $t=2$, switch table 1 doesn't observe this frame
- At time $t=2$, (K,14) is added as an entry to switch table 2.
- At time $t=2$, since the entry for computer H in switch table 2 already exists, no new table entry is made
- At time $t=3$, since the entry for computer C in switch table 1 already exists, no new table entry is made
- At time $t=3$, (D,4) is added as an entry to switch table 1.
- At time $t=3$, since the entry for computer C in switch table 2 already exists, no new table entry is made
- At time $t=3$, switch table 2 doesn't observe this frame
- At time $t=4$, switch table 1 doesn't observe this frame
- At time $t=4$, switch table 1 doesn't observe this frame
- At time $t=4$, (I,12) is added as an entry to switch table 2.
- At time $t=4$, since the entry for computer K in switch table 2 already exists, no new table entry is made