Grade Book Detail

,

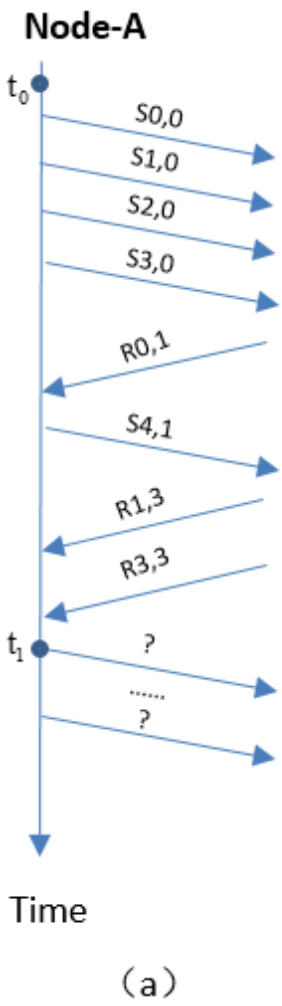
Quiz 3

Started: November 19, 2019, 10:04 am
Last change: January 1, 1970, 8:00 am

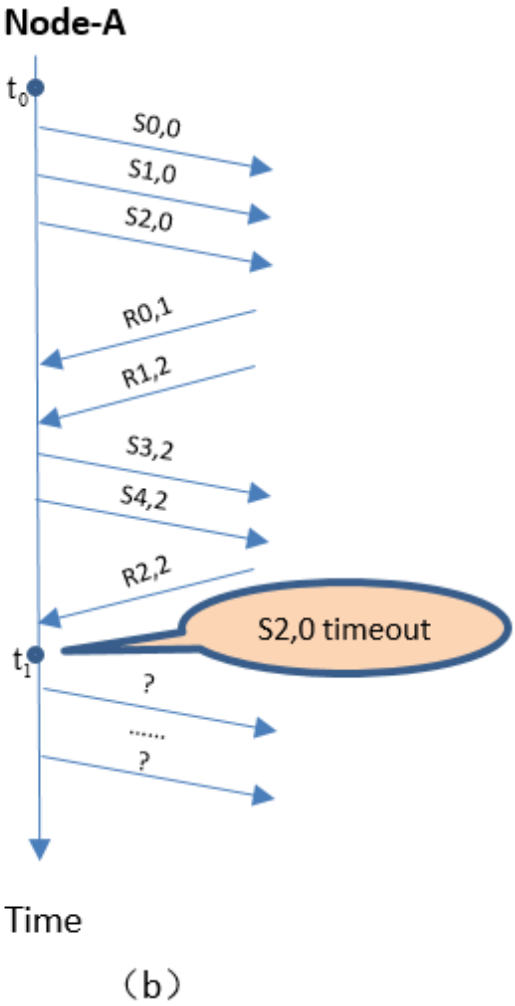
Showing Scored Attempts | Show Last Attempts | Show Review Attempts

Hide Perfect Score Questions | Hide Not Answered Questions

Both Node-A and Node-B use the Go-Back-N protocol for continuous two-way data transmission, both parties use piggyback acknowledgement, and the frame length is 2000 bits. Sx,y and Rx,y respectively denote the data frames sent by Node-A and Node-B, where x is the sequence number for the outgoing frame, y is the acknowledgment number which is the number for the next incoming frame to receive. The field length of sequence numbers and acknowledgment numbers of data frames is 4 bits. The data transmission rate of the channel is 100 Mbps and propagation time is 0.48 ms. The following figures show two scenarios in which the Node-A sends and receives data frames, at the initial time t_0 both sequence number and acknowledgment sequence number of Node-A is 0, and at t_1 Node-A has enough data to be transmitted.



(a)



(b)

1. For Figure (a), from t_0 to t_1, Node-A can confirm that
   how many frames Node-B has received correctly? _____
   Which ones are the frames received correctly? (Denote them as Sx,y)

   x **y**

First Frame: S _____ , _____

Last Frame: S _____ , _____

2. For Figure (a), from t_1, if no timeout occurred and no more data frame is received from Node-B,
   how many data frames can Node-A send? _____
   What are the first frame and the last frame (Denote them as Sx, y)?

   x **y**

   First Frame: S _____ , _____

   Last Frame: S _____ , _____

3. For Figure (b), from t_0 to t_1, Node-A can confirm that
   how many frames Node-B has received correctly? _____
   What is the last frame? (Denote them as Sx,y)

   x **y**

   Last Frame: S _____ , _____

4. For Figure (b), from t_1, if no new timeout occurred and no more data frame is received from Node-B,
   how many data frames does Node-A need to retransmit? _____
   The retransmission frames will be (Denote them as Sx, y):

   x **y**

   First Frame: S _____ , _____

   Last Frame: S _____ , _____

5. What is the sending time of a frame? _____ms
   What is the maximum channel utilization that Node-A can achieve ? _____% (rounding integer)
   (Tip: Please consider the transmission time of acknowledgment frame)

Show Answer 3
Show Answer 0
Show Answer 0
Show Answer 2
Show Answer 0
Show Answer 13
Show Answer 5
Show Answer 2
Show Answer 1
Show Answer 2
Show Answer 2
Show Answer 1
Show Answer 0
Show Answer 3
Show Answer 2
Show Answer 3
Show Answer 4
Show Answer 3

Show Answer 2000/(100*10^6)*1000 = 0.02

Show Answer 15*0.02/(0.96 + 2*0.02)*100 = 30 or 30

Question 1: NA out of 100 in 0 attempt(s)

Total: 0/100

Return to GradeBook