CS305 Homework 1

12012919

Liao Mingqian

1、

The validity of the protocol needs to be based on certain standards, and the protocol specifies the way and sequence of sending and receiving data between communication devices. Standards are especially important for standardizing protocols. Based on specific standards, people can create some practical specific devices and applications using protocols for communication.

2、

Application layer: where applications and application layer protocols reside

Transport layer: transfer application layer's messages between application endpoints

Network layer: transfer the datagrams from one host to another, providing end-system-to-end-system communication

Link layer: Pass network layer datagrams on the node path to provide support for network layer data transmission

Physical layer: Moves bits in a link layer frame from one node to the next

3、

network layer, link layer, physical layer;

link layer, physical layer;

application layer, transport layer, network layer, link layer, physical layer;

4、

a)

$$d_{drop} = \frac{m}{s}$$

b)

$$d_{trans} = \frac{L}{R}$$

c)

$$delay = d_{drop} + d_{trans} = \frac{m}{s} + \frac{L}{R}$$

d) Just left host A, ready to start transmission to host B

e) On the transmission path from host A to host B, host B is not reached

f) has reached host B

g) $m = \frac{sL}{R} = 5.35 * 10^5 m$

5、

a) can support $3M/150k = 20$ **users**

b) 10%

c) $C(120, n) * (0.1)^n * (0.9)^{120-n}$

d) $P = 1 - \sum_{n=1}^{20} C(120, n) * (0.1)^n * (0.9)^{120-n} = 1 - 0.992 = 0.008$

6、

Because TCP is more reliable than UDP, it can ensure that no data is lost during transmission; and it can ensure that the application can receive all application data in the correct order.

7、

a) False

b) True

c) False

d) False

e) False

8、

a) /cs453/index.html

b) HTTP/1.1

c) persistent connection

d) The IP address the browser is running on cannot be seen from the HTTP request message

e) Mozilla/5.0; Facilitates the server to send different versions of the same object to different types of user agents.

9、

a) can ; 2008 . 3 .7 12:39:45

b) 2005 . 12 . 10 18:27:46

c) 3874 bytes

d) "<!doc" ; can agree.