We Need to Talk (Instructor Version)

Instructor Note: Red font color or Gray highlights indicate text that appears in the instructor copy only.

Objectives

Explain how transport layer protocols and services support communications across data networks.

- Students will determine whether high or low data communication delivery methods should be utilized in situational context.

Background / Scenario

Note: This activity works best with medium-sized groups of 6 to 8 students per group.

This chapter helps you understand how transport layer protocols and services support network data communications.

The instructor will whisper a complex message to the first student in a group. An example of the message might be "Our final exam will be given next Tuesday, February 5th, at 2 p.m. in Room 1151."

That student whispers the message to the next student in the group. Each group follows this process until all members of each group have heard the whispered message. Here are the rules you are to follow:

• You can whisper the message only once to your neighbor.

• The message must keep moving from one person to the other with no skipping of participants. The instructor should ask a student to keep time of the full message activity from first participant to last participant stating the messages. The first or last person would mostly likely be the best one to keep this time.

• The last student will say aloud exactly what he or she heard.

The instructor will then restate the original message so that the group can compare it to the message that was delivered by the last student in the group.

Instructor Note: You should have a different complex message for each group of students. Initiate discussion about what happened in the activity. Focus on these five questions:

1. Was the message **complete** when it reached the last student?

2. Was the message **correct** as delivered to the last student?

3. How long did it take for the message to get to the last student?

4. If you were depending on this message to drive your personal/business calendar, studying schedule, etc., would the contents of this message need to be fully correct when you received them?

5. Would the length of time taken to deliver the message be important to the sender and recipient?

Instructor Note: This is an in-class Modeling Activity (MA). It is not intended to be a graded assignment. Its purposed is to initiate student discussion about their perception of how data is transferred from source to destination, both personally and in corporate practice. This MA introduces students to TCP/UDP, transport layer content.

Required Resources

- Timer for the student who is keeping a record of the conversation's duration.

Reflection

1. Would the contents of this message need to be fully correct when you received them if you were depending on this message to drive your personal/business calendar, studying schedule, etc.?

   _____

2. Would the length of time taken to deliver the message be an important factor to the sender and recipient?

   _____

In the discussion initiated as a result of this activity, students should mention:

• The importance of messages being delivered fully from sender to recipient (TCP vs. UDP - was the message method correct to use in this situation?)

• The importance of details within the message being correct from sender to recipient (Guaranteed vs. Non-guaranteed delivery - was the message correct as delivered to the last person?)

• **The importance of timing of a message – to the details of the message and to the date/time needed to take action on the message (Segment establishment and delivery vs. full message delivery - did it take very long for the message to get to the last student?)**

Identify elements of the model that map to IT-related content:

• Protocols can establish a method of sending and receiving information over a network (TCP/UDP protocols).

• Quality of delivery of data over a network may be affected by which protocol is used during a network conversation (Best Effort Delivery).

• Timing issues and factors for delivery of data over a communications system are affected by how much data is sent at one time and by the type of transported data (Segment establishment and delivery – both TCP and UDP).