# California State University, Monterey Bay

# Week 5 - Homework 6

*Clarence Mitchell*

*CST311*

*Introduction to Computer Networks*

*SUMMER 2015*

*Instructor: Dr. Anand Seetharam*

Problem

Suppose Host A sends a few TCP segments back to back to Host B over a TCP connection. The first segment has sequence number 90; the second has sequence number 110.

a) How much data is in the first segment?

20 Bytes (110 – 90)

b) Suppose that the first segment is lost but the second segment arrives at B. In the acknowledgment that Host B sends to Host A, what will be the acknowledgment number?

The acknowledgement number will be 90 (assuming that in the Handshaking the initial sequence number is sent).

c) Let us suppose that the third and fourth segments have sequence numbers 150 and 180 respectively. How much data is in the second and third segments?

2nd segment 40 Bytes (150 – 110)

3rd segment 30 Bytes (180 – 150)

d) The third and fourth segments also arrive successfully at B before the first segment arrives. In the acknowledgment that Host B sends to Host A, what will be the acknowledgment number?

If the third and fourth segments arrive before the first segment, the acknowledgement number is 90, indicating that it is still waiting for bytes 90 and onwards

e) Does A realize that the first segment is lost? If so what will A do next and why?.

Due to TCP fast retransmit, Host A will realize that the first segment is lost and will retransmit it.