## Part A. Protocol Basics

- 1. What transport-layer protocol is used in your capture? TCP
- 2. What port number did the server use? 30069
- 3. What ephemeral port did the client use? (in part1, and part2) **Part 1: 47534 and Part 2: 54900**
- 4. What interface was used when you ran the C&S on the same machine(rlab5)? Loopback
- 5. What interface was used when you ran the C&S on different machines (client on rlab5)? **Ethernet**

## Part B. Application Layer

- 7. In part1, Which packet carries the "Welcome to CS 352!" message? How many bytes of payload are in that packet? **18**
- 8. In part2, Identify one packet carrying a client message. Packet #6. Show which field contains the application data. The TCP field contains the data. It can be seen under "TCP payload". It was 25 bytes in this case.
- 9. In part2, Identify the corresponding echo reply from the server. Indicate the line #, or copy paste that line. Packet #8 is the corresponding echo reply from the server.

```
0040 63 f8 f1 39 47 4e 49 5a 41 4d 41 20 53 49 20 46 c ⋅ 9GNIZ AMA SI F 0050 4f 52 70 20 53 49 48 74 20 2c 41 56 65 ORp SIHt ,AVe
```

## Part C. Packet Sizes

- 9. How many total bytes were sent from client  $\rightarrow$  server, **735 bytes**, from server  $\rightarrow$  client? (in both cases-part1 and part2) **685 bytes**
- 10. Which packet in the capture is largest in terms of payload size? In both captures, packets number 13 and 14 were the largest in terms of payload size. (34 bytes)