

Course: CISC 856: Upper Layer Protocols  
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Document: Homework 2 – Using Wireshark to Reverse Engineer YouTube  
Due Date:

## Reverse Engineering YouTube

Set up an experiment to see how your browser communicates with YouTube (<http://www.youtube.com>). Use Wireshark to determine how YouTube uses TCP and/or UDP for its end-to-end communication.

Answers to the questions below should be of the form

- When I click on —, the YouTube server opens two TCP connections with my Firefox browser, one for — (see PDU —) and one for — (See PDU —).
- On clicking on my browser's pause button, my browser closed the existing TCP connection (see PDU —), and opened a new TCP connection to ... (see PDU —).

Print out and submit PDUs captured by Wireshark as supportive document for your answers. In particular, show the PDUs that open and close/abort TCP connections.

1. What happens when you select a video to watch?
2. What happens when you fast-forward right away after starting the video, presumably before enough time has occurred for that place in video to have been downloaded?
3. What happens when you fast-forward to a place in the video that has already been downloaded?
4. What happens when you rewind back to a place in the video?
5. Can you fast-forward and/or rewind to any arbitrary place in a video?
6. What happens when you pause a video and then restart it?
7. What happens when you do a "search" in YouTube?
8. Possible Extra credit: Think of other actions with YouTube that can be added to this assignment for the next group of students. Provide an answer key!