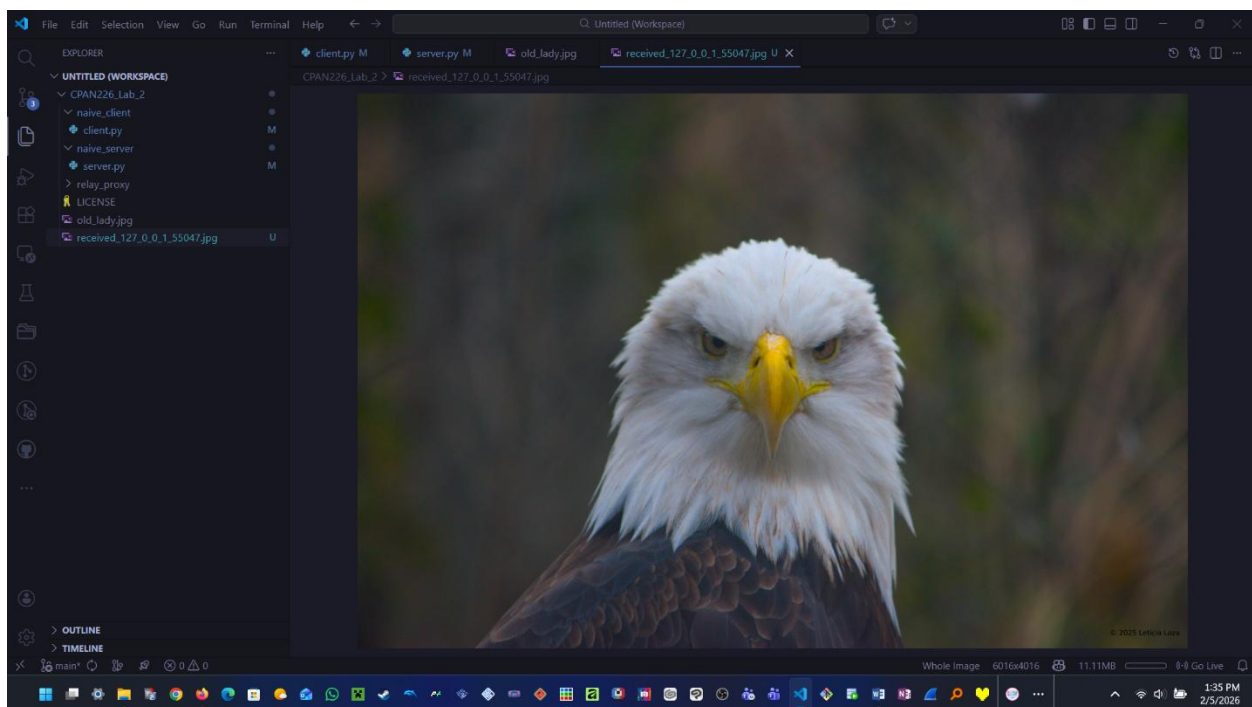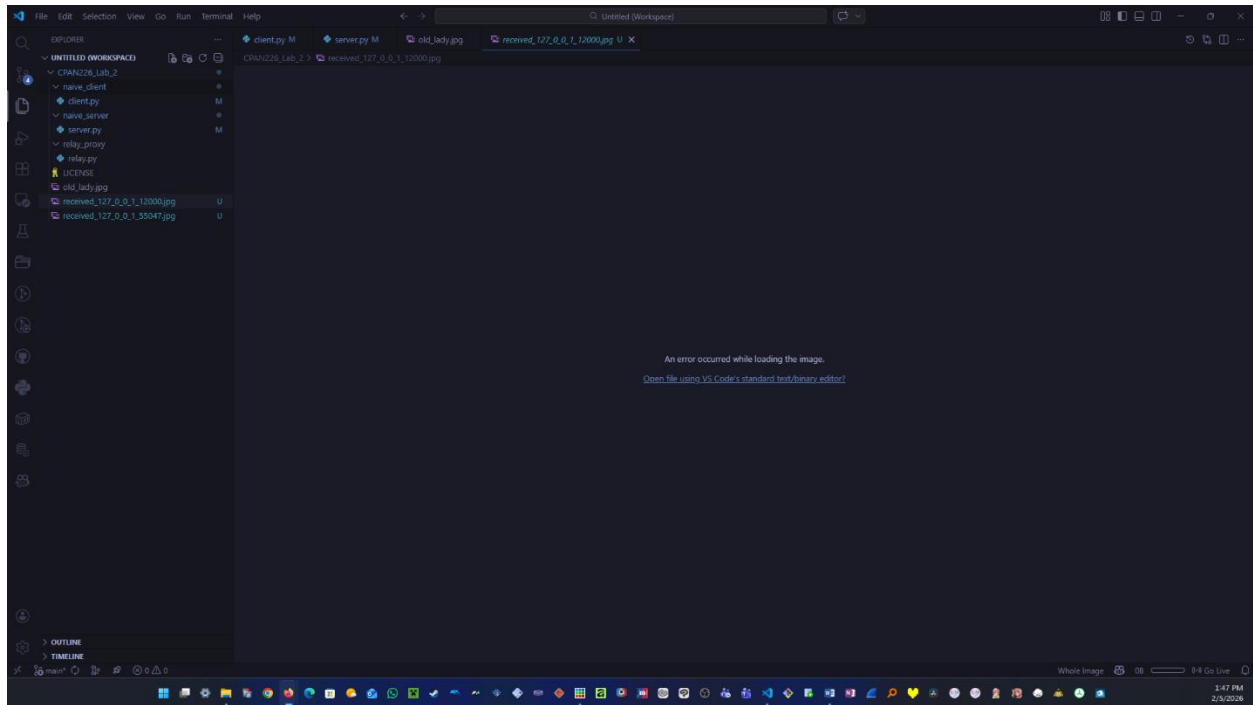# CPAN226 Lab 2 Report

To handle the chaos of an unreliable network, the server uses a dictionary-based buffering system designed to ensure data is written to the file in the correct chronological order, regardless of when it actually arrives. When a packet is received, the server checks its sequence number against the **expected_seq_num**. If they match, the data is written immediately, and the server then checks the buffer to see if the next required packets, which may have arrived early and been stored, are now ready to be released and written in sequence. If a packet arrives with a higher number than expected, it is held in the buffer instead of being written, which prevents the image file from becoming corrupted. This logic effectively reassembles the image, ensuring that even if the relay reorders or drops packets, the final file remains a complete match of the original.
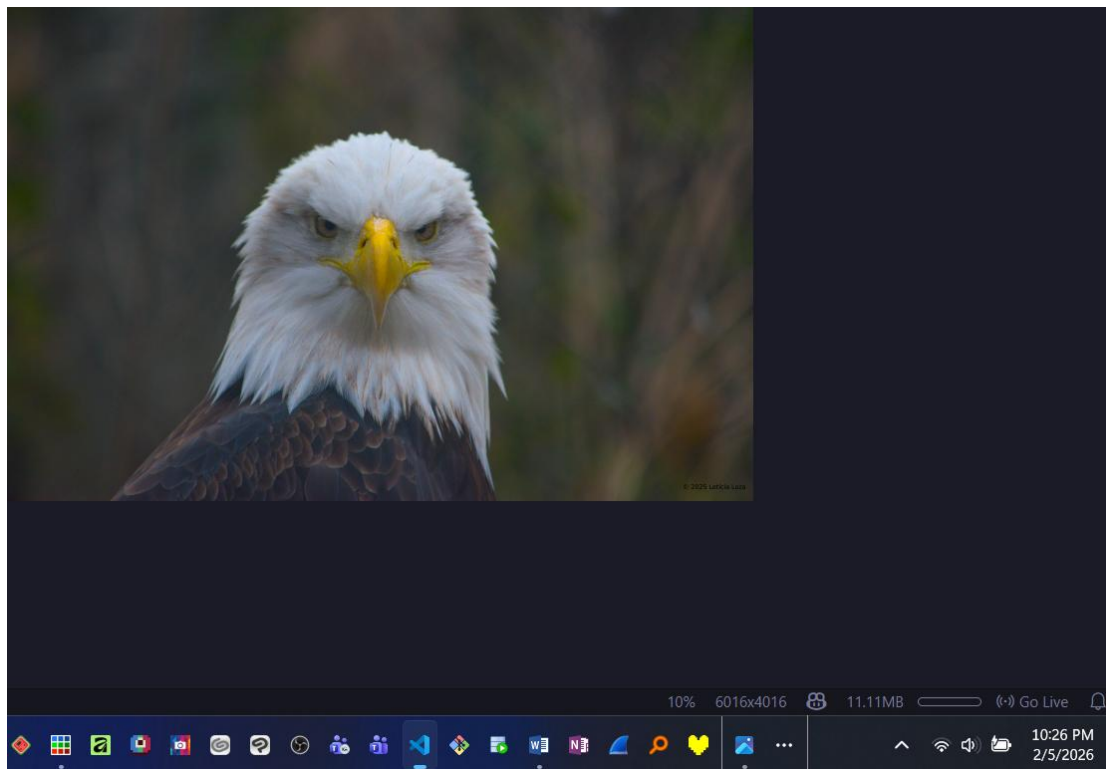
Screenshots:

Screenshot 1

Screenshot 2

Screenshot 3

Screenshot 4