DATE: October 17, 2025

TO: Dr. Neeraja Yadwadkar

FROM: Praneel Murali

SUBJECT: Individual Risk Reduction - WebSocket Automatic Reconnection

For my individual risk reduction task, I worked on fixing WebSocket disconnection issues in our market making system. Our project needs live market data to update prices, so losing the connection even briefly can cause stale quotes and bad decisions. To prevent this, I built an auto reconnection feature that recovers in under 5 seconds.

I used an outer loop to manage the connection and an inner loop to read data. When a timeout or error happens, the system closes the bad connection, opens a new one, and resubscribes to the market data. I tested this by forcing disconnects, and the system always reconnected in less than 1 second.

This reduces a major risk because crypto exchange feeds often drop. With fast reconnection, we only miss a small number of updates, which is acceptable for our medium frequency design. This task helped me understand real time networking and made our system more reliable.