**Self-reflection by Darwin:**

Working on the instant messenger app as a group project using Java Swing was both challenging and rewarding. Collaborating with teammates brought diverse perspectives and skills, but it also highlighted several technical and design issues we encountered along the way.

**Data Consistency:** One of the major challenges was ensuring data consistency across multiple users. When multiple users sent messages simultaneously, we faced issues with duplicate entries or lost messages. Implementing proper transaction handling was crucial, but it required more attention than we initially anticipated. Security: Protecting user data was a significant concern. Initially, we didn't implement sufficient encryption for stored passwords or messages. This oversight prompted a late-stage integration of security measures, which added pressure as we approached our deadlines.

**Usability:** While we aimed for an intuitive design, feedback from initial user testing revealed some usability flaws. For instance, the chat interface felt cluttered, making it difficult for users to navigate conversations. We learned that iterative testing and feedback loops are crucial for identifying and addressing design issues early.

**Responsiveness:** The app's layout was not fully responsive, leading to a poor user experience. We had to revisit our layout choices and implement better scaling practices to accommodate various resolutions, which consumed more time than we had planned.

**Notifications:** Implementing an effective notification system proved challenging. Initially, notifications were not prominent enough, and users often missed new messages. We had to refine this feature to ensure that users received timely alerts without being overwhelmed. In conclusion, developing the instant messenger app with Java Swing was a complex journey filled with technical and design challenges. But all in all it helped me better understand the ins and outs of creating an application for future endeavors and opportunities.