**Project Design Phase**

**Proposed Solution**

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| Date | 10 April 2025 |
| Team ID | SWITD1743598785 |
| Project Name | Stock Trading Web App |
| Maximum Marks | 2 Marks |

**Proposed Solution:**

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | The application needs to handle real-time stock price updates, user transactions, and portfolio changes seamlessly while ensuring the security, privacy, and regulatory compliance of user data. The system currently lacks efficient real-time data handling, scalability, and robust security measures. |
|  | Idea / Solution description | Develop a stock trading web application using the MERN stack, incorporating WebSockets for real-time data updates, scalable microservices architecture, and strong security protocols. The solution will include features like real-time stock price updates, user portfolio management, secure authentication, and compliance with financial regulations. |
|  | Novelty / Uniqueness | The application will leverage the MERN stack's strengths to provide a seamless, real-time trading experience. Unique features include real-time synchronization using WebSockets, microservices for scalability, and advanced security measures like encryption and two-factor authentication. |
|  | Social Impact / Customer Satisfaction | The solution aims to enhance the trading experience by providing timely and accurate information, thus enabling users to make informed decisions. Improved security and compliance will build user trust, leading to higher customer satisfaction and loyalty. |
|  | Business Model (Revenue Model) | The application can generate revenue through subscription plans, transaction fees, premium features, and advertisements. Additional revenue streams can include partnerships with financial institutions and offering API access to third-party developers. |
|  | Scalability of the Solution | The microservices architecture ensures that the application can scale horizontally by adding more instances as the user base grows. The use of cloud services for hosting and database management further supports scalability and flexibility to handle increased load and demand. |