

Week 8 Worklog – Core Backend Development (Part 2)

Date: 03.03.2025 – 08.03.2025

Objective:

- Implementation of additional backend APIs and business logic.
- Enhanced database queries to handle complex use cases.
- Ensured seamless integration of backend APIs with the frontend.

Individual Contributions:

Santhosh K (7376212IT221) – Backend API Development

- **Created Complex Database Queries:**
 - Developed MongoDB aggregate queries to handle complex data relationships between User, Product, and Request collections.
 - Added filtering, sorting, and pagination support for product and request lists.
- **Enhanced Request Handling:**
 - Created new endpoints in requestController.js to fetch filtered requests based on status (Pending, Approved, Rejected).
 - Added logic to handle partial approvals (if stock is insufficient).
- **Data Consistency:**
 - Ensured data consistency using Mongoose transactions to handle simultaneous updates to inventory and request status.

Jayasuriya J (7376212IT160) – Backend API Integration & Testing

- **Enhanced API Integration:**
 - Worked on integrating new backend APIs with the frontend using Axios.
 - Updated UserDashboard.jsx and OrderTracking.jsx to reflect real-time backend updates.
- **API Error Handling:**
 - Added try-catch blocks and improved status codes for better error reporting.
 - Ensured proper error messages are shown on the frontend during request failures.
- **Performance Tuning:**

- Optimized data fetching to reduce load time on the frontend by modifying Axios requests.
- Implemented lazy loading for dashboard components to minimize initial load time.

Rakesh M (7376212IT208) – Backend-Frontend Synchronization

- **Full-Stack Integration:**
 - Connected new request and product APIs with the frontend state management (Zustand).
 - Ensured that real-time updates in order tracking and product inventory were reflected on the frontend.
- **WebSocket Integration:**
 - Set up WebSocket connection for live updates in the user and admin dashboards.
 - Ensured order status changes were pushed to the frontend without the need for a refresh.
- **Bug Fixes:**
 - Fixed inconsistencies in the state update for request status and stock levels.
 - Resolved mismatched product IDs during request submission.

Praveen R (7376212IT201) – Security & API Authentication

- **API Security:**
 - Enhanced JWT authentication for new API routes.
 - Restricted admin-only routes using middleware (adminMiddleware.js).
- **Access Control:**
 - Improved user role validation to prevent unauthorized access to admin routes.
 - Ensured proper handling of token expiration and refresh.
- **Testing:**
 - Tested all new APIs using Postman to validate request/response format and data integrity.
 - Identified and fixed CORS issues when connecting to frontend.