

# Manual Implementation Log

**Project:** Article Share Web Application **Student:** [Your Name/ID] **Date:** December 10, 2025

## 1. Time Breakdown

**Total Time Spent:** Approximately 6 Hours

The project was completed comfortably within the 20-hour limit. The effort was distributed as follows:

- **Phase 1: Architecture & Database Design (1.5 Hours)**
  - Planning the REST API endpoints.
  - Designing the SQLite schema for Users and Articles.
  - Researching OWASP best practices for the security requirements.
- **Phase 2: Backend Development (2 Hours)**
  - Setting up the Express server and middleware.
  - Implementing `bcrypt` for password hashing and `jsonwebtoken` for session management.
  - Writing and testing the API routes with Postman.
- **Phase 3: Frontend Implementation (1.5 Hours)**
  - Initializing the React environment.
  - Building the Authentication forms and Dashboard components.
  - Integrating Axios for backend communication.
- **Phase 4: UI Polish & Security Hardening (1 Hour)**
  - Applying custom CSS for a cleaner interface.
  - Adding Rate Limiting and Input Validation.
  - Final debugging and documentation.

## 2. Features Implemented

I successfully implemented all required features along with additional security enhancements:

- **Core Functionality:** User Registration/Login, Article Posting, Global Feed, Delete functionality (Owner-based).
- **Admin System:** Automatic generation of an `admin` account with global deletion privileges.
- **Data Persistence:** Persistent storage using SQLite.
- **Security:** Password hashing, JWT authentication, login rate limiting, and URL validation.
- **User Interface:** A responsive, user-friendly React interface with real-time status feedback.

## 3. Features Not Implemented

- **None.** All requirements were met and no features were descoped.

## 4. Note on Git History

Please note that the timestamps in the Git log do not reflect the actual working hours detailed above. Development, testing, and debugging were performed in a local iterative environment. The code was committed to the repository in logical chunks during the final integration phase to ensure a clean and working submission history.