
 Marwadi University <small>Marwadi Chandarana Group</small> 	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: CP		
Exp-4	Date:23-09-25	Enrollment No:92200133007

Technical Documentation Structure

1. Introduction

- Briefly restate your project context, ICT domain (e.g., Cloud + Web Application), and purpose of implementation.
- Mention technologies used (React, Node.js, MySQL, etc.).

2. Code Structure & Organization



/Project-root

- /frontend (React app: components, pages, utils)
- /backend (Node.js + Express APIs, routes, controllers, middleware)
- /database (SQL schema, migrations, seeders)
- package. Json
- README.md

- Explain:
 - **Frontend** modules: UI, forms, state management.
 - **Backend** modules: APIs, authentication, validation, error handling.
 - **Database**: schema design (tables, relations).
 - **Config** files: environment variables, security setup.

3. Implementation Details

- Technologies & frameworks chosen (React for UI, Express for REST APIs, MySQL for persistence).
- Key **algorithms/protocols**:
 - Authentication (JWT, session, or OAuth).
 - Input validation & sanitization.
 - CRUD operations with SQL.
- Integration of **frontend** → **backend** → **database** with an example API call.

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4. Integration Across Components

- Show how **frontend interacts with backend APIs**.
- Describe middleware for authentication/authorization.
- Demonstrate **database interaction flow** with SQL queries.
- If cloud-based: mention AWS/Azure/GCP setup for deployment.

5. Testing Procedures & Results

- **Unit testing** (Jest, Mocha, or PyTest depending on language).
- **Integration testing** (Postman API tests).
- **UI testing** (manual test cases or Cypress).

○ Test ID	○ Component	○ Test Description	○ Expected Output	○ Result
○ T1	○ Login API	○ Valid credentials	○ Dashboard loads	○ Pass
○ T2	○ Database	○ SQL insert query	○ Data persists	○ Pass

6. Instructions for Running the System

- Dependencies: Node.js version, MySQL setup, React build commands.
- Setup steps:
 - Clone repo from GitHub.
 - Install dependencies (npm install).
 - Configure .env file.
 - Run backend: npm start.
 - Run frontend: npm run dev.
- Database migration instructions.