

# SmartMall Analytics Portal - Project Report

## 1. Project Scope

This SmartMall Analytics Portal is built as part of the Full Stack Development training by GIKI IT Center - COHORT 2.

The system allows mall administrators and store managers to track walk-in analytics and telco trend-based product recommendations.

Built using the MERN stack (MongoDB, Express.js, React, Node.js) and Bootstrap for responsive UI.

## 2. MVC Architecture

The backend follows a clean MVC (Model-View-Controller) architecture:

- Models: MongoDB models created using Mongoose.
- Views: Implemented through React.js for dynamic front-end rendering.
- Controllers: Handle business logic and route requests.

## 3. Key Features Implemented

- JWT Authentication (Admin and Store Manager roles)
- Role-Based Access Control (RBAC)
- CRUD operations for Stores, Users, Walk-In Logs, and Telco Trends
- Walk-in data analytics and telco trend matching
- Automated product recommendations
- Admin dashboard and store manager dashboard (React + Bootstrap)

## 4. Technical Stack

- Frontend: React.js + Bootstrap
- Backend: Node.js + Express.js
- Database: MongoDB with Mongoose ODM

## SmartMall Analytics Portal - Project Report

- Authentication: JSON Web Tokens (JWT)
- API Documentation: Swagger (OpenAPI)
- Testing: Jest + Supertest (5 feature-related tests)

### 5. Deliverables

- Fully functional MERN application
- Modular code using MVC pattern
- .env for environment configuration
- Swagger documentation and unit test scripts

### 6. Submission Info

The project was successfully built and submitted before the given deadline (tomorrow 3:30PM). All code was uploaded to GitHub and includes:

- Source code (frontend/backend)
- Swagger documentation
- Test scripts