

Project Title: Smart Inventory & Task Management System

A small tech startup is struggling to keep track of its office inventory (like laptops, routers, and office supplies) and assign tasks or responsibilities to its team members. They've asked your student team to build a **web-based system** where:

- Inventory items can be tracked and updated.
- Team members (Admin, Manager, Staff) can be assigned different responsibilities.
- Reports can be generated based on usage, availability, and tasks.
- Users log in and manage their sessions securely.
- Tables show all data clearly, with options to sort and filter.

Project Requirements

Frontend (React.js)

1. **Login & Signup Page**
 - Role-based login (Admin, Manager, Staff)
 - Session management using localStorage or JWT.
2. **Dashboard**
 - Customized dashboard for each role.
 - Admin sees everything, manager sees assigned staff/tasks, staff sees own tasks.
3. **Inventory Table**
 - View/add/edit/delete inventory items.
 - Filters: by category, availability, assigned user.
4. **Task Assignment Module**
 - Admin/Manager can assign tasks to staff.
 - Staff can view/update task progress.
5. **Reports Page**
 - View downloadable reports (PDF/CSV) of inventory usage or task progress.
6. **User Roles Management**
 - Admin can promote/demote users, assign roles.
7. **Responsive UI**
 - Use components like Material-UI or Bootstrap.

Backend (Node.js + Express)

1. **User Authentication & Role Management**
 - JWT-based authentication.
 - Middleware to restrict access based on roles.
2. **Inventory Management API**

- CRUD operations for inventory items.
- Fields: item name, category, status, quantity, assigned user, etc.
- 3. **Task/Responsibility Management**
 - CRUD APIs for assigning/updating tasks.
 - Fields: task name, description, deadline, assigned to, status.
- 4. **Reporting Endpoints**
 - Generate and send reports based on inventory usage and task completion.
 - Format: JSON (optional CSV export).
- 5. **Session Management**
 - Token expiration, logout, refresh session.

Database Structure (MongoDB or MySQL)

users

| id | name | email | password | role (admin/manager/staff) |

inventory

| id | name | category | quantity | status | assigned_to |

tasks

| id | title | description | status | assigned_to | deadline |