

# DPG PROJECT IDEAS

## 1. University Course & Room Booking System

### **Project Description:**

Develop a scheduling application for a university. The system will be used by administrators to manage the master timetable for each semester. It must prevent scheduling conflicts, such as a lecturer being assigned to two classes at the same time, or a single classroom being booked for two different courses simultaneously.

The application should allow an administrator to manage all necessary resources (courses, lecturers, classrooms with specific capacities/features) and schedule them into available time slots. It should also provide a way for faculty or students to view the finalized schedules by course, lecturer, or room.

## 2. Local Co-op Farm Inventory & Order Management

### **Project Description:**

Create a system for a small community farm to manage its weekly produce distribution. The application must track the farm's product inventory, including quantities on hand for items like vegetables, fruits, and dairy.

Farm managers will use the system to manage a list of members and process their weekly orders. When an order is submitted, the system must automatically update the inventory levels to reflect the sale. It should be impossible for a member to order an item that is out of stock. The system should also be able to generate a daily "packing list" that aggregates all items needed to fulfill the day's orders.

## 3. Simple Bug Tracking System

### **Project Description:**

Build a bug tracking application for a software development team. The system should allow users to log new bugs or feature requests for different software projects. Each bug report must include a description, priority level, and the person who reported it.

The core of the system is managing the bug's lifecycle. A bug must move through a defined workflow of statuses (e.g., New, Assigned, In Progress, Fixed, Closed). The system must also maintain a complete audit history for each bug, tracking every change made, who made it, and when it occurred. Users should also be able to add comments to bug reports.

#### **4. Role-Based Staff Management & HR Portal (The Staff Management System)**

##### **Project Description:**

Develop an internal HR portal for managing employees and company processes. The central feature of this application is a dynamic, permission-based security model.

A user's assigned role (e.g., Employee, Manager, HR Admin) must strictly control what they can see and do. The user interface itself, especially navigation menus, should change based on the user's permissions. For example, an 'Approve Leave' option should only be visible to managers.

The system must manage an employee directory, a reporting hierarchy (who reports to whom), and a leave request system where employees submit requests that are routed to their direct manager for approval. All critical changes to employee data must be recorded in a historical audit log.