Restaurant Ordering and Management System

You are asked to develop a system to manage in-person dining at a restaurant, focusing on table management, online ordering from tables, kitchen order display, and end-of-meal payment processing.

Key Features:

- **Menu Management:** Allows an administrator to add, edit, and delete menu items (including descriptions, prices, and images).
- **Table Management:** Visual representation of table layout, assigning tables to servers.
- **Online Ordering:** Customers can browse the menu, add items to their order (associated with their table) and submit their order to the kitchen. Customers can submit multiple orders throughout their meal.
- **Kitchen Order System (KOS):** Displays incoming orders to the kitchen staff in a clear, chronological list, associated with the correct table number. Kitchen staff can update the status of orders (e.g., "Preparing," "Ready") which is visible to staff/servers.
- **End-of-Meal Payment:** When customers are finished, they can either pay through the app or in person using cash or credit card. If paying in person, a staff member records the payment method in the system and marks the bill as paid.
- **Inventory Management:** Tracking ingredient levels and notifying when stock is low.
- **Reporting:** Generating sales reports, identifying popular items.
- **Staff Management:** Managing employee schedules, roles, and permissions.

Students are required to implement the complete online ordering module, including menu display, order placement, and a basic Kitchen Order System (KOS) that displays incoming orders to kitchen staff.

Personalized Learning Hub for Tutoring Centers

You are tasked with developing a system to streamline personalized tutoring, focusing on efficient student-tutor pairing, seamless session scheduling, and progress tracking.

Key Features:

- **Skill Assessment:** Students complete an interactive quiz to share their learning goals, enabling the system to recommend the most suitable tutors and subjects.
- **Session Booking:** A calendar-driven interface allows tutors to set their availability while students can easily book or cancel sessions as needed.
- **Tutoring Assignment:** For every lesson, the system automatically assigns a qualified teacher to each student, ensuring personalized guidance throughout their learning journey.
- **Progress Tracking:** Tutors log detailed session notes and milestones that students can access to monitor their academic progress and receive timely feedback.
- **Resource Library:** A centralized repository hosts educational materials, including worksheets, video tutorials, and practice exams.
- **Payment Integration:** Manages financial transactions by handling per-session fees and offering discounted package deals, ensuring smooth payment processing.
- **Compatibility Matching:** An intelligent algorithm pairs students with tutors based on learning styles, subject expertise, and other relevant criteria.
- **Attendance Alerts:** Notifies administrators of frequent student absences or recurring tutor cancellations to help maintain a consistent learning experience.

Students are expected to implement core features of the system. This includes developing the skill assessment, the automated teacher assignment for each lesson/student, a session dashboard for tutors that summarizes student progress and milestones and a resource library.

Municipal Service Request System

You are asked to develop a system that enables citizens to report local municipal issues—such as potholes, broken streetlights, or garbage collection problems—through an online platform, thereby increasing transparency and improving local government responsiveness.

Key Features:

- **Citizen Registration and Request Submission:**
  Allows citizens to register and submit service requests with detailed descriptions and multimedia attachments (e.g., photos, videos) to document issues.
- **Request Tracking and Status Updates:**
  Provides a dashboard where citizens can track the progress of their requests from submission through to resolution.
- **Geolocation and Mapping Integration:**
  Tags service requests with location data and displays them on an interactive map for municipal planning and efficient dispatch.
- **Notification and Alert System:**
  Sends automated alerts to citizens when the status of their requests changes and reminds municipal staff of pending tasks.
- **Administrative Dashboard and Reporting:**
  Offers city officials tools to generate analytics and reports on service request trends, response times, and resolution rates to drive data-informed decisions.

Students are required to implement the complete Request Submission that includes geolocation integration and an administrative dashboard for real-time updates.