Final Project Proposal

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Project Description:

We will develop a restaurant waiting list management system with separate interfaces for customers and waiters. Customers can use the system to add themselves to a waiting queue by entering their name, phone number, and party size. Based on the party size (small, medium, or large), the system automatically places the party into the appropriate queue and displays the current waiting status. Waiters use a separate interface to manage table assignments. They can view the status of all tables, monitor which parties are seated, and release tables when customers finish dining. Each table is tracked by its size, current availability, and assigned customer.

Architecture:

We will use Java with a Swing-based graphical user interface to implement the system. The project will contain six main classes: Party Class, Table Class, WaitlistManager Class, TableManager Class, System Class, Main Class.

- **Party Class**
  Represents a customer party waiting to be seated. It may contain information such as Name, Phone number, Party size
- **Table Class**
  Represents a restaurant table. Each table may include Table ID, Table size, Occupied status (true/false)
- **WaitlistManager Class**
  Manages all waiting queues by party size. It may include Queue of small parties, Queue of medium parties, Queue of large parties
- **TableManager Class**
  Manages available tables and controls the assignment logic. It may contain: Queue of available small tables, Queue of available medium tables, Queue of available large tables
- **System Class**
  The app includes the following functions: making reservations, checking out, canceling reservations, checking wait-list information, viewing table status, and assigning tables.
- **Main Class**