UNIVERSITY OF CALOOCAN CITY
COMPUTER ENGINEERING DEPARTMENT

Data Structure and Algorithm

Laboratory Project

Progress Report 3

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PROGRESS REPORT

Date and Time Management

The application now includes a calendar widget (tkcalendar.DateEntry) for selecting dates, along with separate inputs for start and end times using hour, minute, and AM/PM dropdowns. A built-in conflict detection system ensures that overlapping bookings are prevented.

Data Persistence

Integration with Excel via **pandas** allows the program to load existing bookings from *booking_requests.xlsx* and export the current queue back to Excel. It also includes column validation to guarantee the correct Excel format.

Enhanced Logic

An improved conflict-checking algorithm converts time into minutes and compares intervals for accuracy. Users can also delete requests directly from the queue, while queue management benefits from persistent storage and dynamic updates.

Improved UI Components

The interface uses **ttk.Combobox** for dropdowns, providing a modern look compared to OptionMenu. A scrollbar has been added to the request list for easier navigation, and the overall layout now uses grid alignment with consistent spacing for better readability.

Structural Improvements

The entire app is encapsulated in a **BookingApp class**, making the design modular and easier to maintain. Logic, UI setup, and data handling are separated into clean, well-defined methods.

Summary of Additions

- **Input:** Date picker, start/end time selectors
- **Validation:** Time conflict detection
- **Data Storage:** Excel import/export
- **UI:** Scrollbar, modern widgets (ttk)
- **Functionality:** Delete request, persistent queue
- **Architecture:** Class-based design (BookingApp)

INPUT AND OUTPUT