

UNIVERSITY OF CALOOCAN CITY COMPUTER ENGINEERING DEPARTMENT



Data Structure and Algorithm

Laboratory Project

Progress Report 5

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DSA

PROGRESS REPORT

Our system was improved a lot in terms of code, design, and user experience. We organized the code by

making separate classes like TimeUtils, ExcelManager, RoomBookingQueue, and BookingApp so each has its

own job. Error handling is now better, showing clear messages instead of crashing. The queue now follows the

real FIFO order, and time handling is more accurate. The interface looks cleaner and easier to use with better

layout and feedback. We also added proper logging instead of print statements and made sure Excel data is

checked before loading. The code now has clear comments and type hints to make it easier to understand. The

expiry system was made simpler, and the room availability feature now works completely.

Architecture and Code Organization

TimeUtils: Time conversion utilities

ExcelManager: Excel file operations

RoomBookingQueue: Pure queue logic

BookingApp: UI and coordination

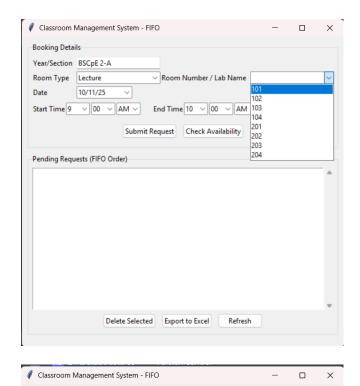
Improved UI

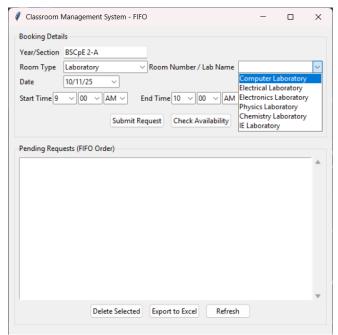
Proper logging system

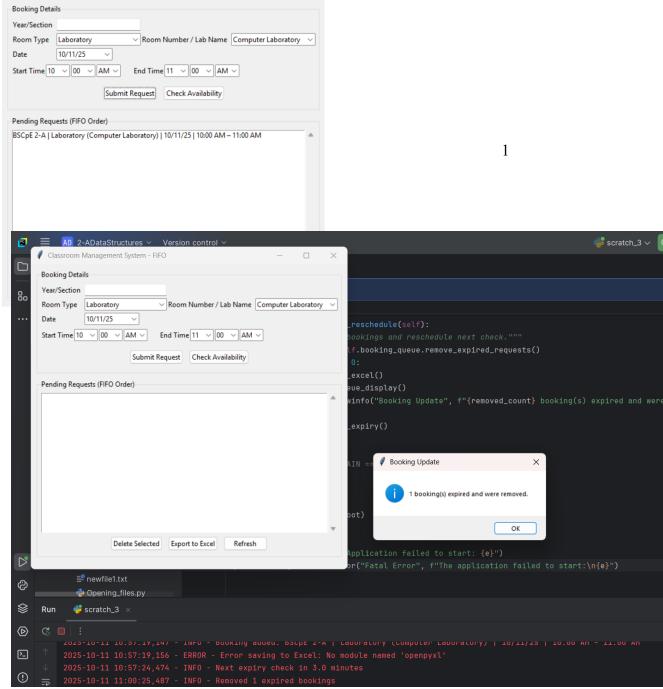
Better Expiry System simplified using dedicated time utilities

Modular, testable components with single responsibilities

INPUT AND OUTPUT







References

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- [3] August2025. (2025, August 14). Managing reservation queue status. Oracle Help Center. https://docs.oracle.com/en/industries/hospitality/opera-cloud/25.1/ocsuh/t_arrivals_in-house_adding_reservation_to_queue.htm
- [4] Buha, L., & Buha, L. (2023, November 17). What is an online booking system? (Reservation system definition). Amelia WordPress Booking Plugin. https://wpamelia.com/online-booking-system/