



UNIVERSITY OF CALOOCAN CITY
COMPUTER ENGINEERING DEPARTMENT



Data Structure and Algorithm

Laboratory Project

Progress Report 5

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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

Classroom Management System - FIFO

Booking Details

Year/Section

BScpE 2-A

Room Type

Lecture

Room Number / Lab Name

101

102

103

104

201

202

203

204

Date

10/11/25

Start Time

9

00

AM

End Time

10

00

AM

Submit Request

Check Availability

Pending Requests (FIFO Order)

Delete Selected

Export to Excel

Refresh

Classroom Management System - FIFO

Booking Details

Year/Section

BScpE 2-A

Room Type

Laboratory

Room Number / Lab Name

Computer Laboratory

Electrical Laboratory

Electronics Laboratory

Physics Laboratory

Chemistry Laboratory

IE Laboratory

Date

10/11/25

Start Time

9

00

AM

End Time

10

00

AM

Submit Request

Check Availability

Pending Requests (FIFO Order)

Delete Selected

Export to Excel

Refresh

Classroom Management System - FIFO

Booking Details

Year/Section

Room Type

Laboratory

Room Number / Lab Name

Computer Laboratory

Date

10/11/25

Start Time

10

00

AM

End Time

11

00

AM

Submit Request

Check Availability

Pending Requests (FIFO Order)

BScpE 2-A | Laboratory (Computer Laboratory) | 10/11/25 | 10:00 AM – 11:00 AM

1

AD 2-ADataStructures Version control

scratch_3

Classroom Management System - FIFO

Booking Details

Year/Section

Room Type

Laboratory

Room Number / Lab Name

Computer Laboratory

Date

10/11/25

Start Time

10

00

AM

End Time

11

00

AM

Submit Request

Check Availability

Pending Requests (FIFO Order)

Delete Selected

Export to Excel

Refresh

Booking Update

1 booking(s) expired and were removed.

OK

2025-10-11 10:57:17,147 - INFO - booking added: BScpE 2-A | Laboratory (Computer Laboratory) | 10/11/25 | 10:00 AM – 11:00 AM

2025-10-11 10:57:19,156 - ERROR - Error saving to Excel: No module named 'openpyxl'

2025-10-11 10:57:24,474 - INFO - Next expiry check in 3.0 minutes

2025-10-11 11:00:25,487 - INFO - Removed 1 expired bookings

References

- [1] timeutils. (2017, October 19). PyPI. <https://pypi.org/project/timeutils/>
- [2] Client challenge. (n.d.). <https://pypi.org/project/excelmanager/>
- [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/>