CS223 SOFTWARE ENGINEERING
BOOK MANAGEMENT SYSTEM

THE LEARNING HUB | FACILITATING EDUCATION AT FINGERTIPS

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OBJECTIVE

- The software, Book Management System is designed for the libraries of educational institutes.

- It is meant to help the Library staff by easing out their work load and hence increasing the overall efficiency of the system.

CONSTRAINTS

- Each member registered in the system has an institute id.
- Each resource (book or journal) has an id.
- Only faculties and students of the institute can issue a book.
- Only faculties and PhD students can issue a journal and renew a resource.
- Only faculties can request for new resources.
- Each member cannot issue multiple copies of a resource at a time.

WHO ARE THE ACTORS?

- Members: Everyone registered in the system. (librarian/ users)

- Librarian/Staff: Library staff who operates the software and acts like the administrator for the software.

- Users: Two types -
    - Faculty
    - Students –
        - PhD students
        - Non-PhD students

- Bank: The bank actor is used to pay the fine by student.

KEY FEATURES OF THE PROJECT

- Register Members (Staff, Faculty, PhD students, Non-PhD students).

- Issue, Return and Renew resources (books and journals).

- Search catalogue of resources and members.

- Maintains a history for both users and resources.

- Non-PhD students can't renew and issue journals.

- Almost 5000 lines of code.

USE CASES

- View Profile : Any member can view his/her own profile. (edit profile/ see your history)

- Search : Any member can search the library for books/journals.

- Issue Resource : A Librarian can issue resource to user.

- Validity : This use case includes check limit and check availability of resource for issuing resource. (check limit, check availability)

- Add User : A librarian can add user to the system.

- Add Resource : A librarian can add resource to the system.

- Get list of fine : The librarian can get list of all users who have fine to pay.

- Update Record : The librarian can update the record of resource.
- Order Book : A librarian can order any number of Resources.
- Clear Dues : User can clear his/her dues.
- Issue Journal : Any PhD student or faculty member can issue journal.
- Issue Book : any member can issue book.
- Return resource : Members have to return the resource issued.
- Renew resource : A PhD student or Faculty member can renew the resource issued by them.

STRUCTURE OF FILE SYSTEM

- 5 .txt files:
  - Phd
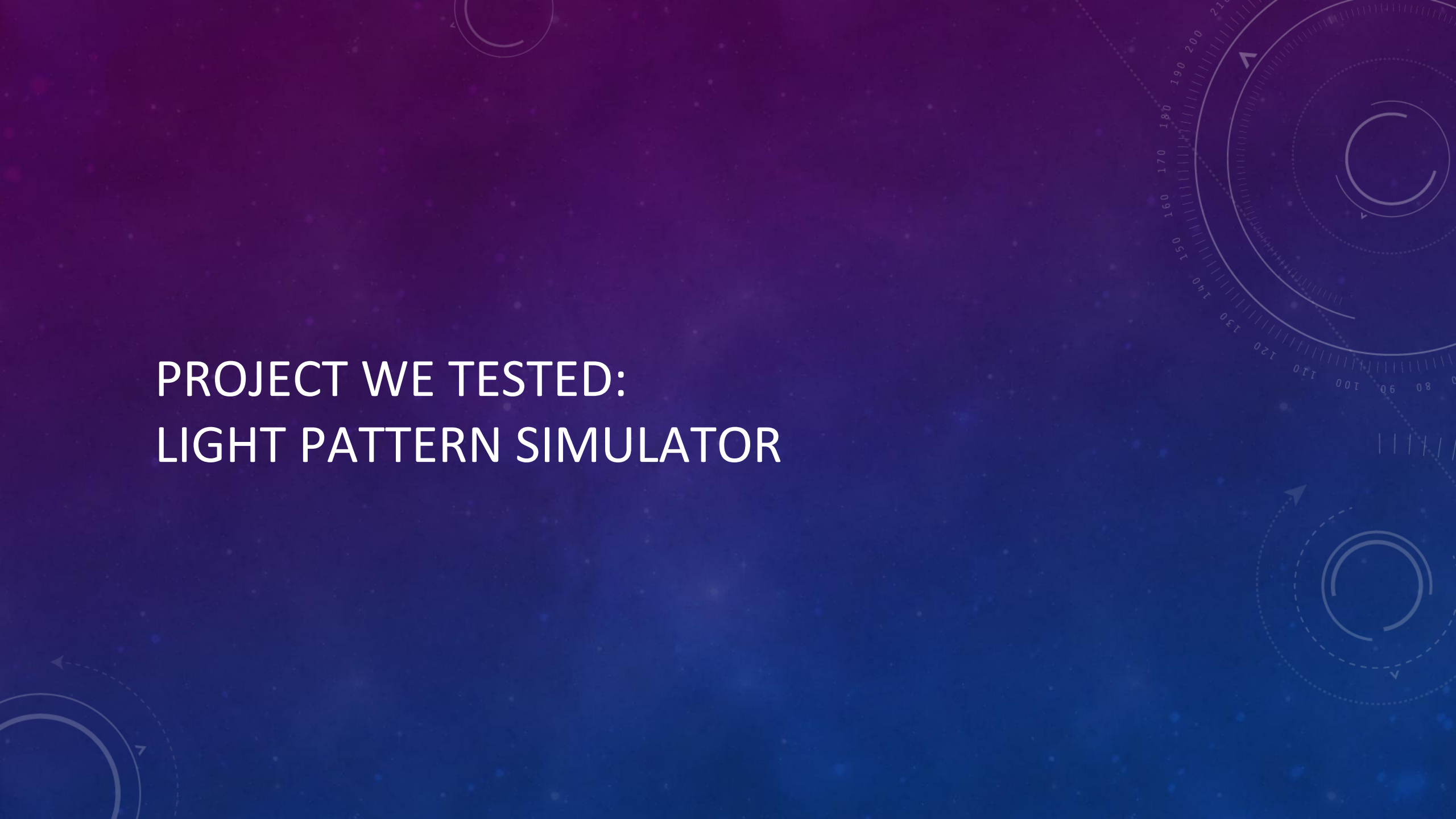 - NonPhd
  - Faculty
  - Staff
  - Resources

THINGS THAT COULD NOT BE IMPLEMENTED

- Suggest resource by faculty.

- Notification for issue date and resource availability.

- We were unable to break the code in different classes.

STATISTICS OF UNIT AND SYSTEM TESTING

- Test cases identified using all branches in CFG for functions.

- System testing done for every functionality.

- No automated testing tool used.

- Most of the errors pointed by the testing team were not found, when code was executed by us.

- All other errors have been resolved.

PROJECT WE TESTED:
LIGHT PATTERN SIMULATOR

LIST OF USE CASES TESTED

- Log in

- DISPLAY AND CONFIRM FINAL DESIGN

- View history

STATISTICS OF THE TEST CASES

- Functionalities tested : 3/3

- All 3 functionalities showed failure with some or the other input.

- History of a user with multiple designs confirmed was incorrect.

- Program exits after viewing customer history.

- No option to edit admin details or customer details.

- No login for customer, he/she may wish to view his history.

- On entering invalid contact number (or any invalid data), program asks for a valid contact number (or the valid data) for infinite times.

- No option to add more designs.

CONCLUSION

- The project was implemented successfully.
- The project is sufficient for any library or book bank.

THANK YOU