SOFTWARE QUALITY AND DESIGN

TERM PROJECT

System Specification Document

GROUP NAME: TEAM 5 – THE ELITE GROUP

APPLICATION NAME: BOOKLY APP

PRESENTED BY:

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SCOPE

This is an online booking store application model created by team 5 - the Elite group. The Project is to model and implement an online booking store management application for a book company in order to ensure customer easy and user-friendly interface.

This online web application will be deployed on a web server with support for Node.js and MySQL and provides a robust, reliable and user-friendly system in order to ensure a competent service to tablets and smart phones, and is achieved by setting up a detailed feasibility study, requirement analysis, system modeling, system implementation and system testing which is discussed as sub-sections in the body of the project.

MINI FEASIBILTY STUDY

Feasibility study is regarded as the first approach to analyzing the prospect of a proposed system as it deals with the objectives of the system, scope of the system, defined user requirements, system requirements, Actors of the system, Subsystem of the system, database system to be used, define external interface and conclusively the relationship that exist between these various components that makes up the system. The process model suitable for this project model is waterfall model as detailed requirement analysis and system modeling is required, as it is a robust, reliable and user-friendly system with a step-by-step approach in designing the system main functionalities.

Feasibility study can be attributed to the tools, methods, process model and a quality focus of the project and for the context of this project the user can be a staff, registered customer and a visitor. The mini feasibility is broadly categorized into:

USER REQUIREMENT

- The system provides a user with a web application for an online book store.
- User shall be able to create accounts with a username and password.
- User shall have the option to log in securely to access personalized features.
- User shall view list of books available in the system.
- User shall be able to search for books of their choice.
- User shall be able add books to the shopping cart.
- User shall be able to place and track orders.
- User shall be able to view order history.
- User shall be able to view total price of orders before proceeding to checkout.
- Registered user should be able to cancel booking.

SYSTEM REQUIREMENT

- The system shall provide a user-friendly interface for the online book store.
- The system shall store the information of users in the database.
- The system shall display the available books.
- The system shall be accessible on various devices (desktop, tablet, mobile).
- The system should run on internet connectivity.
- The system shall provide feedback for successful/unsuccessful actions.
- The system shall send email notifications for order updates.
- The system should ensure the safety of user data/information.
- The system should generate reports on top-selling books, revenue, etc.
- The system should calculate and display the total price of orders.

- The system should be reliable.
- The system shall be efficient.
- The system shall be user-friendly.
- The system shall be able to keep inventory.

REQUIREMENT ANALYSIS

Functional Requirement

The following describes the functional requirements for the bookstore application

1. The web application should have a booking interface where booking will be completed in a swift step by step approach.

2. The customer should be able to create accounts with a username and password and should have the option to log in securely using their credentials.

3. The customers should be able to view the books by category, author, or genre. They should also be able to search for books using keywords such as title, author, or description.

4. The customer should be able to select books after having decided on their choices.

5. The customer should be able to add, update, and remove items from shopping cart before proceeding to checkout.

6. The customer should be able to view total price of orders before proceeding to checkout.

7. The customer should be able to place orders securely.

8. The customer should be able to track the status of their orders and view order history.

7. The admin should be able to manage book inventory by adding, updating, or deleting books. The admin should be able to include book details such as title, author, genre, price, and quantity in stock.

8. The Admin should be able to specify whether a book is new or used.

8. The web app should implement a Role-based access control, allowing admins full access and customers access to their profiles, order history, and shopping functionality.

9. The web application should allow new customers to register securely by requiring a valid email and strong passwords.

10. The web application should allow customers to log in securely using email and password.

11. The web application should generate reports on top-selling books, revenue, etc.

12. The web application should provide feedback for successful/unsuccessful actions and send email notifications for order updates.

12. The web application should keep the records of books in and out of stock.

Non- Functional Requirement

The following describes the functional requirements for the bookstore web application

1. The system shall document code to assist future development or maintenance.

2. The system shall encrypt data transmission using HTTPS. And secure password using Hash and salt algorithm for storage to enhance security.

3. The system shall be accessible on various devices (desktop, tablet, mobile).

4. The admin shall be able to log in the application using their user identification and at least a number and character password.

5. The customers shall be able to log in the application using their user identification and at least a number and character password.

6. The system shall maintain a high level of security, encrypting all user data during transmission

7. The system shall provide a user-friendly interface.

8. The system shall store information using MySQL.

Domain Requirement

The following describes the domain requirements for the bookstore web application

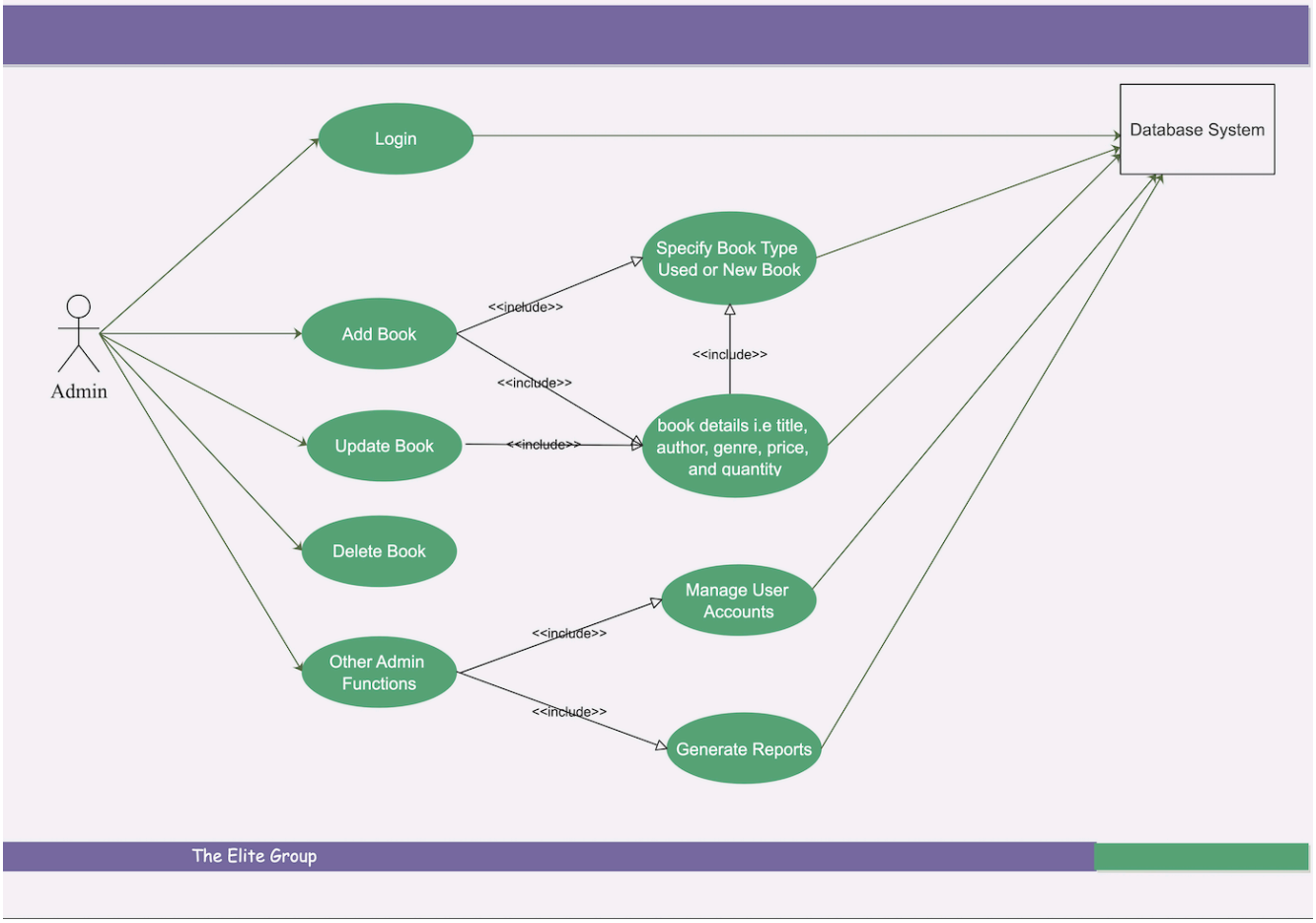
1. The web application will run on various devices (desktop, tablet, mobile).

2. The application will be built using React for the frontend and Node.js for the backend.

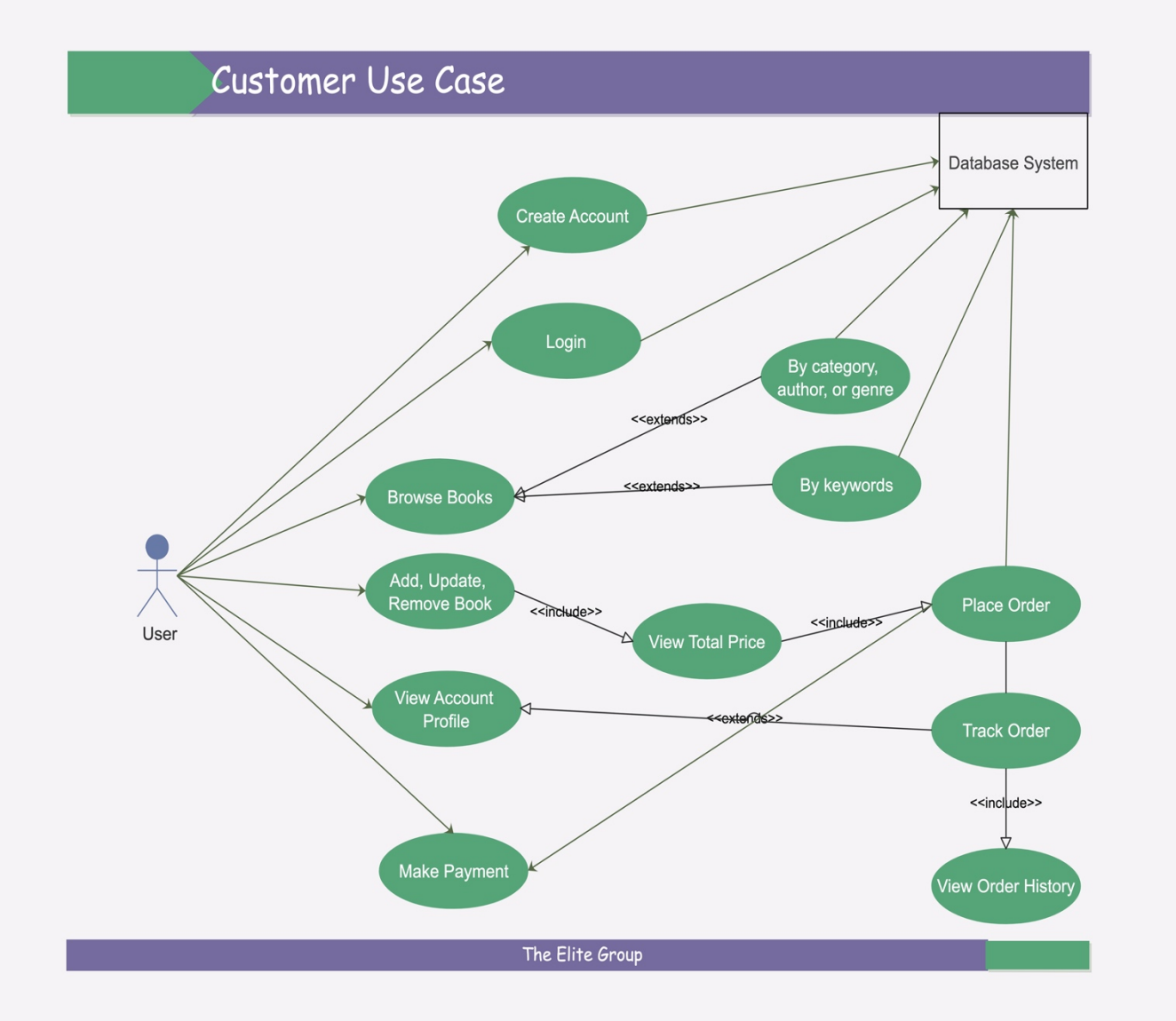
Use Case Diagram

The use case diagrams describe how the mobile application will work from the staff and registered users.

The use case diagram below describes the process made by the admin.



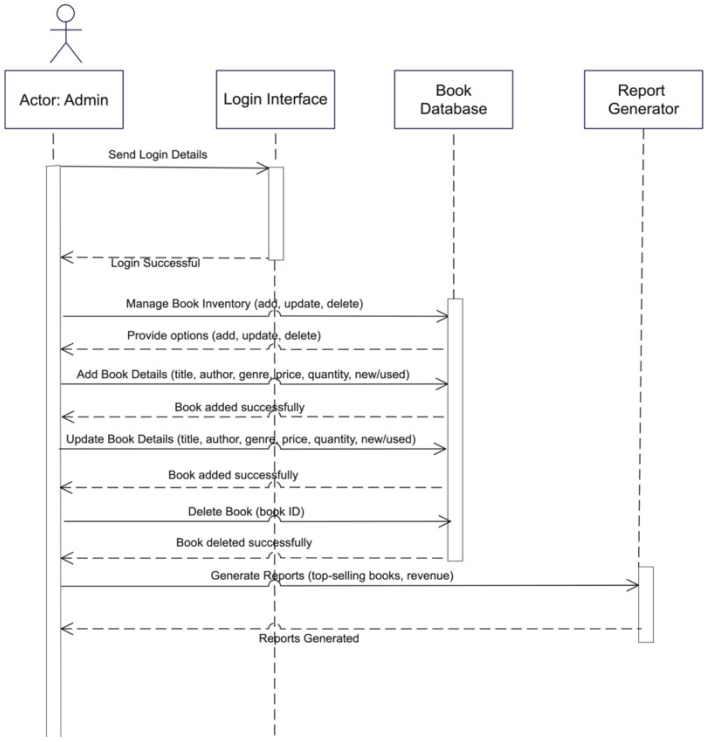
The use case diagram below describes the process made by the registered users.



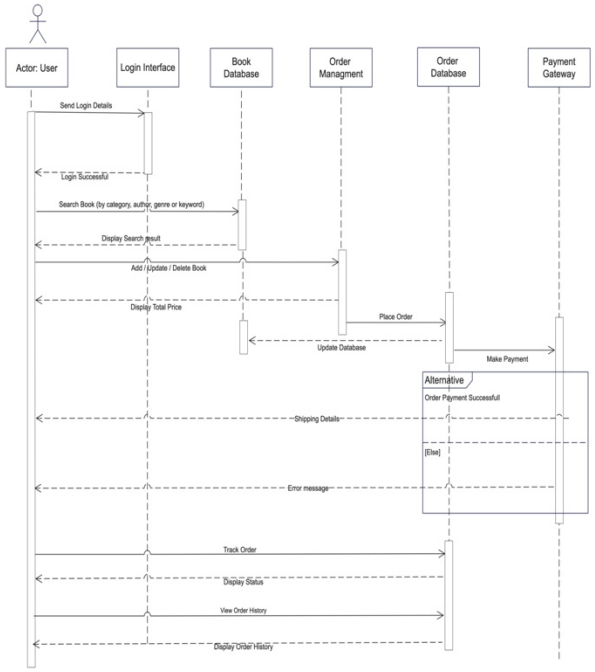
Sequence Diagrams

The following sequence diagrams will describe the behavior of the system.

The sequence diagram below describes the process made by the admin.

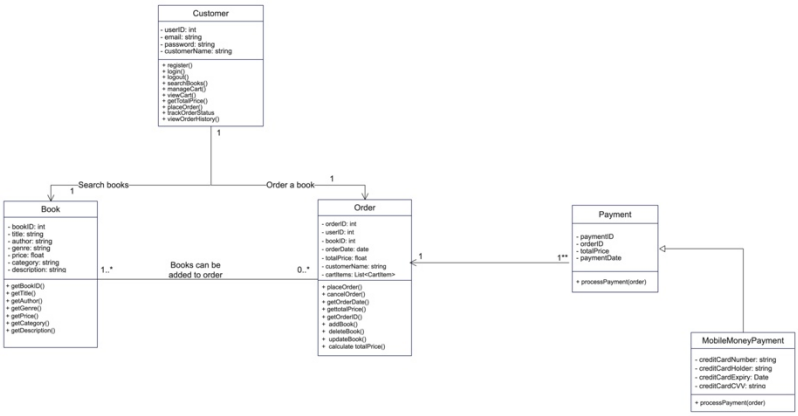


The sequence diagram below describes the process made by the registered users.



DATABASE MODELLING

Class diagram for the database system



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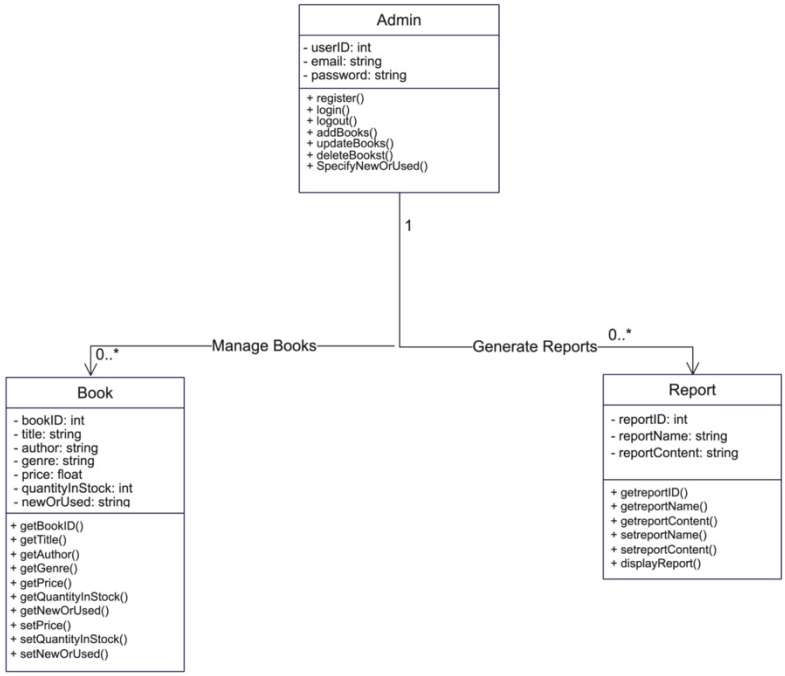
Admin
- userID: int
- email: string
- password: string
+ register()
+ login()
+ logout()
+ addBooks()
+ updateBooks()
+ deleteBookst()
+ SpecifyNewOrUsed()
1
Manage Books
0..*
Generate Reports
0..*
Book
- bookID: int
- title: string
- author: string
- genre: string
- price: float
- quantityInStock: int
- newOrUsed: string
+ getBookID()
+ getTitle()
+ getAuthor()
+ getGenre()
+ getPrice()
+ getQuantityInStock()
+ getNewOrUsed()
+ setPrice()
+ setQuantityInStock()
+ setNewOrUsed()
Report
- reportID: int
- reportName: string
- reportContent: string
+ getreportID()
+ getreportName()
+ getreportContent()
+ setreportName()
+ setreportContent()
+ displayReport()

CONCLUSION

The combination of various tools, methods, process model and a quality focus no doubt has contributed to the development of the proposed online bookstore application system. The process model used is the waterfall model since the system requirements is understood and expected to start development from scratch, as detailed requirement analysis and modeling is required for the robust, reliable and user-friendly system. This project is not completed yet, there are still a few more additions and modifications to be made, in the sequence diagrams and code.

REFERENCES

[1] Introduction to Software Requirement Engineering, L.A.A Rodriguez
[2} Introduction to Design Patterns, L.A.A Rodriguez
[3] www.google.com/images

INDIVIDUAL APPRAISAL

Claudiomar Jesus
APPRAISAL

TEAM NAME: **Team 5 – The Elite group**
TEAM LEADER: Claudiomar Jesus
TEAM MEMBERS: Felipe, Brayan, and Raymond

I am the team leader of this project, as a team leader I made it an obligation to meet each team member individually to have a one-on-one discussion in order to check their progress in the task, and to make constructive corrections where necessary. I carried everybody along to see that this project is a success which ordinarily is not an easy task if not for my management skill acquired to coordinate, motivate, tolerate and suggest ideas which were collectively adopted. I allowed each team member to choose their roles based on their area of interest in order for us to come up with a detailed and constructive solution.

I would say so far that the entire group members' conduct was satisfactory as they gave their best to the project, and the interesting part is the co-operation and the enterprising team spirit that existed among us towards the development of this web application model.

MORE TO COME AFTER THE FINAL REVIEW.