|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module’s Information:** | | | | | |
| Module | | PRG2201 Object-Oriented Programming | | | |
| Session | | JANUARY 2024 | | | |
| Programme | | BCSI / BITI | | | |
| Lecturer | | Harprith Kaur | | | |
| Email: harprith.randhawa@newinti.edu.my  Tel: 06-798 2000 ext 2337 | | Room: A3-F03 | |
| **Summary of Coursework Breakdown:**  *(as stated in course structure)* | | | | | |
| No | Description of coursework | | Learning Outcomes covered | | Marks allocated |
| 1 | Lab Assessment 1 | | CL02 | | 20% |
| 2 | Lab Assessment 2 | | CLO2 | | 20% |
| 3 | Test | | CLO1 | | 30% |
| 4 | Project | | CLO3 | | 30% |
|  | CONTRIBUTION OF THE COURSEWORK TO THE COURSE | | | | 100% |
|  |  | | | |  |
|  | TOTAL | | | | 100% |
| **Penalty for late submission:** | | | | | |
| 1 day – minus 20% of total mark awarded  2 days – minus 50% of total mark awarded  3 days – 0 mark for this piece of coursework | | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Coursework #2** | | | |
| **Module’s Information:** | | | |
| Module | | PRG2201 Object-Oriented Programming | |
| Session | | JANUARY 2024 | |
| Programme | | BCSI / BITI | |
| Lecturer | | Harprith Kaur | |
| Email: harprith.randhawa@newinti.edu.my  Tel: 06-798 2000 ext 2337 | Email: harprith.randhawa@newinti.edu.my  Tel: 06-798 2000 ext 2337 |
| Coursework Type | | **Project (Group of 3)** | |
| Percentage | | 30% | |
| Hand-out Date | | Week 11 | |
| Due Date | | Week 14 | |
| **Students’ Declaration:** | | | |
| ***We declare that:***   1. ***We understand what is meant by plagiarism*** 2. ***This assignment is all our own work and we have acknowledged any use of the published or unpublished works of other people.*** 3. ***We hold a copy of this assignment which we can produce if the original is lost or damaged***   **S1. [Name/ID] Showven Suresh I23024773 [Signature] showven**  **S2. [Name/ID] NG JUN HAO I25201314 [Signature] JUNHAO**  **S3. [Name/ID] EEE HONG JIE I23024621 [Signature] HONGJIE**  **[Date] 22/4/2024** | | | |
| **Learning Outcomes Assessed:** | | | |
| CLO3 | Demonstrate lifelong learning skills in creating programming solutions for real world problems. (A3, PLO9) | | |

|  |
| --- |
| **Description of Coursework #3:** |

This is a group project; there should be a **maximum of THREE (3)** **students** in one (1) group **ONLY**. If you can’t find a group, you will need to talk to your lecturer.

**Tasks:** You are required to develop an **Inventory Management System** for a **Book Store**. The system needs to focus on registering new books and updating the stock on hand. In order to show the function on stock on hand, you need to create a simple form for the sales activities. You need to create 2 type of users for the application, admin to manage the inventory of the books (buying of the books) and salesperson to manage the sales of the books.

The system must contain the following:

* The main page, welcoming users to your system.
* Appropriate GUI
* Make use of event handling and exceptions
* Others functionality: Marks will be given upon your ***effort***, ***creativeness, uniqueness,*** and ***attractiveness***.
* Use your creativity to deliver the information to the users.
* Use your creativity to make the system attractive and efficient as well.
* **Note**: **Database** is compulsory for this project. In the event that you are not able to connect to database, you may able **to use file or** a **linear data structure** to store your data (array of objects) .
* You are required to **present** your system in **Week 14**.
* All members would have to participate and contribute to the project implementation and presentation.
* Maximum presentation time: 30 **minutes.**

**Submission**

* Only submit **one copy** of your report and system per group.
* You are required to submit both the **hardcopy** and **softcopy** of your project.
* You would need to produce a **documentation f**or this project. The documentation should consist of
  + Table of Content
  + Title
  + Overview about the system
  + Objectives of the system
  + Features and functionalities of the system.
  + UML class diagrams
  + Advantages of the system.
  + Limitation and future enhancement of the system
  + **Reflection (share your experience and your struggles). Each member needs to write about his or her experience in completing the project.**
  + References
* Include the coversheet with proper signature upon submission.

***Refer to Appendix B for marking scheme.***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Poor**  **0-9** | **Weak**  **10--14** | **Satisfactory**  **15- 19** | **Good**  **20-25** | **Excellent**  **26- 30** | **Total marks (max)** | **<Showven Suresh>** | **<Ng Jun Hao>** | **<Eee Hong Jie>** |
| **Program Completion** | * *Performed at least two function requirements on assignment sheet.* * *Does not execute due to errors.* | * *Performed at least three function requirements on assignment sheet.* | * *Execution that produced mostly correct output with adequate efficiency in problem solving.* * *Performed at least 4 functions correctly.* | * *Performed most of the requirements on assignment sheet.* * *Program design can be improved.* | * *Performs all requirements on assignment sheet with no errors and good program design.*   *Applied Exception Handling* | 30 |  |  |  |
| **Creativity / User Interface/Robustness** | *Poor design and lack of creativity.* | * *The design lacks creativity. Lack of originality.* | * *The design displays some creativity but could be improved. Lack of originality.* | * *The design shows a solid level of creativity but lacks originality.* | * *Original and the design demonstrates exceptional creativity.* * *Good research.* | 30 |  |  |  |
|  | **Poor**  **0-5** | **Weak**  **6-9** | **Satisfactory**  **10-12** | **Good**  **13-16** | **Excellent**  **17-20** | **Total marks (max)** | **<no 1>** | **<no 2>** | **<no 3>** |
| **Individual Contribution** |  | * *Was not able to answer most of the questions.* * *Little contribution on the coding part but able to answer some of the questions on the application of the concepts.* | * *Able to answer some questions.* * *Little contribution on the coding part but able to answer questions on the application of the concepts.* | * *Able to answer most of the questions.* * *Improve solutions suggested by other group members.* | * *Able to answer all the questions during probing session.* * *Actively seeks and suggest solutions to problems.* | 20 |  |  |  |
| **Documentation/**  **Presentation** | *Very brief and not organized.* | * *Very brief* | * *Brief and not organized.* | * *Organized but not Complete.* | * *Complete and organized* | 20 |  |  |  |
| **TOTAL** | *-* | *-* | *-* | *-* | *-* |  |  |  |  |

**Feedback:**

**Name: Signature: Date of Received:**

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# 1.0 INTRODUCTION

In today's digital era, technology has permeated every aspect of our daily lives, changing how we work, learn, and entertain ourselves. While books remain irreplaceable as carriers of knowledge and custodians of culture, traditional bookstore models are facing numerous challenges. Consumer purchasing habits are shifting, with a growing preference for buying books online, and the popularity of e-books has also impacted traditional bookstores.

Against this backdrop, bookstores need to adopt new technologies and methods to enhance their competitiveness. The "SEN BOOK MANAGEMENT SYSTEM" is a solution developed to meet this challenge. This system, built on Java language and MySQL database, integrates advanced technology and management concepts aimed at helping bookstores improve operational efficiency, provide better customer service, and lay a solid foundation for continuous innovation and growth.

The system not only provides a centralized platform for bookstores to manage inventory, sales, and customer relationships but also offers valuable data and insights for bookstore managers to make informed business decisions. Through the " SEN BOOK MANAGEMENT SYSTEM ", bookstores can more effectively manage their resources, increase sales, and meet modern consumers' demands for convenience and personalized services.

Moreover, the " SEN BOOK MANAGEMENT SYSTEM " features an intuitive and user-friendly graphical user interface (GUI), making operations simple and efficient. This design takes into account the needs and skill levels of different users, ensuring the system's usability and accessibility. The system also provides an open framework for bookstores to easily integrate with other systems and services, such as online sales platforms.

In summary, the " SEN BOOK MANAGEMENT SYSTEM " is a comprehensive, flexible, and efficient solution designed to help modern bookstores address challenges and achieve long-term success and growth. In the following content, we will provide a detailed introduction to this bookstore system, analyzing its functionalities and design logic.

## 1.1 OVERVIEW ABOUT THE SYSTEM

The SEN Book Management System (SEN BMS) is a comprehensive software solution designed specifically for bookstore owners and managers, aiming to simplify and automate the daily operational management of bookstores. Developed using the Java programming language and utilizing MySQL database as backend storage, the system offers efficient and reliable data management.

In today's competitive business environment, an efficient and accurate inventory management system is crucial for successfully operating a bookstore. SEN BMS provides a robust inventory management tool that tracks sales and inventory levels of each book, ensuring inventory accuracy and timely replenishment. Additionally, the system offers sales reporting and book data recording features, helping managers better understand sales trends and formulate more effective inventory and procurement strategies.

In addition to inventory management, SEN BMS includes functionalities for adding, editing, and deleting books, enabling managers to easily maintain book information. With a user-friendly graphical user interface (GUI), the system is easy to operate and intuitive, requiring minimal training to get started. This significantly improves work efficiency and reduces the possibility of errors.

The design philosophy behind SEN BMS is to provide bookstore owners with a centralized, comprehensive management platform to enhance operational efficiency, reduce costs, and increase profitability. Whether it's a small independent bookstore or a large chain bookstore, SEN BMS offers a solution tailored to its scale and needs.

With its holistic, integrated management approach, SEN BMS is poised to become a valuable assistant for bookstore owners and managers, helping them operate their businesses more easily and efficiently.

## 1.2 OBJECTIVES OF THE SYSTEM

The SEN Book Management System (SEN BMS) aims to meet the following key objectives to provide an efficient and reliable bookstore management solution:

1. **Automation and Simplification of Management Processes:** SEN BMS aims to automate core operational processes of bookstores, such as inventory management, sales recording, and report generation, reducing manual inputs and operations to enhance work efficiency.
2. **Accurate Inventory Tracking and Management:** The system offers real-time inventory tracking capabilities, allowing managers to monitor inventory levels accurately, ensure inventory accuracy, and replenish stock timely.
3. **Sales and Data Analysis:** SEN BMS features sales data recording and analysis capabilities, assisting managers in gaining deeper insights into sales trends, optimizing inventory strategies, and improving sales efficiency.
4. **User-Friendly Interface Design:** With an intuitive graphical user interface (GUI), SEN BMS ensures straightforward and clear operations, making it easy to use even for employees without specialized training.
5. **Flexibility and Scalability:** Designed to be flexible and scalable, SEN BMS caters to both small independent bookstores and large chain bookstores, accommodating different scales and needs.
6. **Data Security and Reliability**: Utilizing MySQL database as backend storage, SEN BMS ensures the security and integrity of data, preventing data loss or damage, and ensuring stable system operation.

Through these objectives, SEN BMS aims to become a valuable assistant for bookstore owners and managers, helping them manage their business more effectively, enhance operational efficiency, and achieve business growth and success.

# 2.0 FEATURES AND FUNCTIONALITIES OF THE SYSTEM

The SEN Book Management System (SEN BMS) is a comprehensive, feature-rich solution designed to provide bookstore owners and managers with efficient, automated operational management tools. Below are the main features and characteristics of the system:

Login Features

Login Based on account type: This feature limits the access of user to certain functionalities that require special access and provides the user with the functions that are only necessary to complete their tasks.

Account Creation: an account can be created if the user has no account. The account is created based in the type which is admin and sales person.

Forgot Password: the password can be changed if the forget his or hers password

Email Verification: when the user creates an account, logs in or changes the password an OTP will be sent to their email for extra verification.

Admin Features：

**1. Add Book:**

The "Add Book" feature of SEN BMS offers users a simple and intuitive interface to quickly input and add new book information. Users can input details such as title, author, price, category, etc., ensuring accurate recording of each book's data.

**2. Edit Book:**

In the "Edit Book" feature, users can easily modify various book details. This includes updating prices, changing stock quantities, or altering book descriptions, ensuring book information remains current and accurate.

**3. Delete Book:**

To ensure that inventory information is always accurate and up-to-date, SEN BMS provides a "Delete Book" option. This allows users to remove books from the database that are no longer being sold or are outdated.

**4. Restocking Feature:**

The "Restocking" feature of SEN BMS automatically tracks inventory levels and sends alerts to users when stock falls below a predetermined threshold. This ensures inventory is always able to meet demand, avoiding sales interruptions.

**5. Inventory:**

By providing real-time inventory reports and analysis, SEN BMS helps users gain a comprehensive understanding of the current inventory situation. This not only aids in timely restocking but also assists users in formulating more effective inventory management and purchasing strategies.

Sales Management Features:

**1. Purchase Books:**

In the "Purchase Books" feature, users can easily record purchase details, including supplier, quantity purchased, and price, among others. This aids in tracking the supply chain and ensuring adequate stock levels.

**2. Sell Books:**

The "Sell Books" feature records detailed information for each sale, including sale date, quantity sold, and amount, providing users with a comprehensive sales record.

**3. Book Returns:**

SEN BMS allows users to record and manage book return information. This includes return date, quantity returned, refund amount, and updating related inventory, ensuring transparent and accurate transactions.

**4. Transaction History:**

SEN BMS provides a complete transaction history covering all purchases, sales, and returns. This not only helps users track and audit transactions but also provides valuable data support for sales strategies and inventory management.

# 3.0 UML CLASS DIAGRAMS

**A diagram of a computer

Description automatically generated**

*Diagram 1.0 Class Diagram*

# 4.0 ADVANTAGES OF THE SYSTEM

The design of the SEN Book Management System (SEN BMS) aims to provide a comprehensive, efficient, and user-friendly solution to meet the various needs of bookstore owners and managers. Here are the main advantages of the system:

1. **Efficient Inventory Management:** SEN BMS offers real-time inventory tracking capabilities, and the system can automatically generate detailed sales reports, effectively reducing situations of overstock and stockouts. This not only saves costs but also makes management easier.
2. **User-Friendly Interface:** The graphical user interface (GUI) of SEN BMS is designed to be simple and intuitive, with clear operational processes that are easy to understand. This significantly reduces the learning curve, improves work efficiency, and minimizes problems caused by operational errors.
3. **Flexible Scalability:** The system architecture is designed to be flexible, supporting bookstores of different scales and needs. Whether it's a small independent bookstore or a large chain bookstore, SEN BMS can provide tailored solutions to meet various business requirements.
4. **Data Security:** Utilizing MySQL database, SEN BMS boasts robust data management and security capabilities, ensuring the integrity and security of data and effectively preventing the risks of data loss or leakage.

# 5.0 LIMITATIONS AND FUTURE ENHANCEMENTS OF THE SYSTEM

While the SEN Book Management System (SEN BMS) has demonstrated its powerful features and advantages at the current stage, there are still some limitations and areas for improvement as business evolves and technology progresses.

1. **Initial Usage Cost:** Although our system simplifies operations through a carefully designed graphical user interface (GUI), new users may still need some time to adapt to the system's usage. This may require providing more training or tutorial resources to help users become familiar with the system more quickly.
2. **Data Backup and Recovery:** While the current system provides basic data backup functionality, there is room for improvement in data recovery and disaster recovery. In the future, we plan to introduce automated backup and recovery mechanisms to ensure data security and integrity.

**Future Enhancement Directions:**

1. **Offline Mode Support:** Considering the potential instability of network connections, we plan to introduce an offline mode feature. This will allow users to continue using core functionalities even when the network is down, ensuring business continuity and user work efficiency.
2. **Intelligent Predictive Analysis:** Leveraging advanced data analytics and machine learning technologies, we aim to provide more accurate sales forecasts and inventory management recommendations. This will help business managers better understand market trends and formulate more effective inventory and procurement strategies.
3. **User Roles and Permissions Management:** To meet the needs and security requirements of different users, we plan to enhance user roles and permissions management. This will allow administrators to more flexibly configure and control user access rights, protecting the security of critical business data.
4. **Expanded Reporting Features:** In terms of reporting capabilities, we plan to add more report templates and customization options. This will enable users to generate various detailed and summary reports based on specific business needs, better monitoring business operations and making decisions.
5. **User Feedback Mechanism:** To facilitate continuous optimization of the system, we plan to introduce a user feedback mechanism. This will encourage users to provide feedback and suggestions for the system, helping us better understand user needs and challenges, and continuously improve and upgrade the system.

In conclusion, while SEN BMS has provided robust support for bookstore owners and managers at the current stage, we recognize that there is still room for improvement and optimization. Through continuous innovation and investment, we expect SEN BMS to continue serving as a valuable assistant for bookstore business management, creating more value for users.

# 6.0 OUTPUT OF THE SYSTEM

Output screenshots

Main screen

A screenshot of a store

Description automatically generated

Login Screen

A login screen with a purple and black sign

Description automatically generated

Create account screens

A purple and black login screen

Description automatically generated

A purple sign with black icons

Description automatically generated

Home Pages

Admin

A blue and purple rectangular shapes

Description automatically generated

Salesperson

A screenshot of a computer

Description automatically generated

Sales Person

Book selling (Select book)

A screenshot of a computer

Description automatically generated

Book selling (Enter quantity)

A screenshot of a computer

Description automatically generated

Book selling (Enter username and display total price)

A screenshot of a computer

Description automatically generated

Book Return (Select salesID) A screenshot of a computer

Description automatically generated

Book Return (Select book) A screenshot of a computer

Description automatically generated

Book Return (Enter reason) A screenshot of a computer

Description automatically generated

Check StockA screenshot of a computer

Description automatically generated

Sales History (Select salesID)A screenshot of a computer

Description automatically generated

Sales History (Display book)

A screenshot of a computer

Description automatically generated

Admin Screenshots

Add BookA screenshot of a computer

Description automatically generated

Delete Book (Select book) A screenshot of a computer

Description automatically generated

Delete Book (Enter Quantiy) A screenshot of a computer

Description automatically generated

Edit Book (Select book)A screenshot of a computer

Description automatically generated

Edit Book (Insert data) A screenshot of a computer

Description automatically generated

View Inventory

A screenshot of a computer

Description automatically generated

Restock Book (Select book)

A screenshot of a computer

Description automatically generated

Restock Book (Insert quantity) A screenshot of a computer

Description automatically generated

# 7.0 APPENDIX

## 7.1 TASK ALLOCATION

|  |  |
| --- | --- |
| Group Members | Task Distributed |
| **Showven Suresh** | 1. Compiling and combining everyone’s code  2. User login and account creation  3. Inventory viewing, restocking creating database and other parts of the admin |
| **Eee Hong Jie** | 1. Do documentation (write the whole report) and formatting  2.Add book, edit book, delete book, and some GUI design  3.prepare UML diagram and ppt. |
| **Ng Jun Hao** | 1.Entire salesperson part (add, sales, return book, sales history, check stock)  2.Prepare UML diagram and ppt.  3.Documentation assistance |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Group Members** | | |
| **Showven Suresh** | **Eee Hong Jie** | **Ng Jun Hao** |
| Book Management | | | |
| Add Book | ✓ | ✓ |  |
| Edit Book | ✓ | ✓ |  |
| Delete Book | ✓ | ✓ |  |
| Restock | ✓ |  |  |
| Inventory | ✓ |  |  |
| Sales Management | | | |
| Purchase book |  |  | ✓ |
| Sell book |  |  | ✓ |
| Books withdraw |  |  | ✓ |
| Transaction history |  |  | ✓ |
| Login Page | | | |
| User login (coding) | ✓ |  |  |
| Interface Design | | | |
| Login Page | ✓ |  |  |
| Main function GUI design | ✓ | ✓ | ✓ |
| Database | | | |
| SQL Query | ✓ |  | ✓ |
| Table and field design | ✓ | ✓ | ✓ |
| Code Merging | | | |
| Integration | ✓ |  |  |
| Documentation | | | |
| PPT | ✓ | ✓ | ✓ |
| Report | ✓ | ✓ | ✓ |
| UML diagram |  | ✓ | ✓ |
| Formatting |  | ✓ |  |
| Checking | ✓ | ✓ | ✓ |

## 7.2 GROUP MEMBER REFLECTION REPORT

### 7.2.1 NG JUN HAO

**Name: Ng Jun Hao ID: I25201314**

**Description of Self Contributions**

|  |  |  |
| --- | --- | --- |
| **Task#** | **Tasks assigned** | **Remarks** |
| 1. | Add sales, check stock, return book and view history sales | Salesperson function |
| 2. | Draw UML diagram, ppt slide and documentation assistance |  |

**Lesson learned by completing this assignment:**

|  |
| --- |
| Through completing this task, I've learned several key software development skills.  Firstly, I gained proficiency in Java's interaction with MySQL databases, including establishing connections, executing queries, and handling exceptions. This has enabled me to seamlessly integrate databases into applications, facilitating efficient data management.  Secondly, delving into GUI development using Swing components has enhanced my ability to design intuitive and visually appealing user interfaces. Designing interfaces with elements like tables, text fields, and dialog boxes has empowered me to create engaging applications.  Additionally, tackling error handling underscored the importance of robust error management in software development. From handling exceptions to implementing effective validation mechanisms, I've learned to ensure application reliability and stability while enhancing user experience through clear feedback.  Furthermore, prioritizing user experience considerations, such as input validation and informative feedback, has reinforced my commitment to designing user-centric applications.  Lastly, refining project organization skills, including task decomposition, writing modular code, and seamless component integration, has improved project efficiency and maintainability. These skills enable me to manage and develop complex projects more effectively.  Although the process was very difficult, the results were satisfactory. When there is an error in the code, such as write data or pass data, I keep trying until there is no problem. The leason I learned is that no matter what you do, you must persevere. If you don't know how, you can study by yourself or find someone to learn from, and you will be able to succeed in everything. |

1. **Self-evaluation from lowest 0 mark to highest 10 mark. Justify your evaluation.**

|  |
| --- |
| Self-evaluation (7): |
| Although I have completed most of the functions, it is a little worse than I originally imagined. Because of the time and the first contact with GUI, it took a long time to learn by myself and connect to the database. When designing, I planned to do the current functions, statistical charts and receipts, but two of them were not completed. Let’s keep up the good work next time。 |

**Student’s Signature: (Junhao)**

### 7.2.1 SHOWVEN SURESH

**Name: Showven Suresh ID: I23024773**

**Description of Self Contributions**

|  |  |  |
| --- | --- | --- |
| **Task#** | **Tasks assigned** | **Remarks** |
| 1 | Login, account creation |  |
| 2 | Admin functions, database creation and connection |  |

**Lesson learned by completing this assignment:**

|  |
| --- |
| In leading a group for implementing a bookstore inventory system, incorporating a graphical user interface (GUI) and database connectivity presented valuable lessons. Clear communication was essential, ensuring everyone comprehended the project objectives, requirements, and individual roles. Tasks were broken down into manageable segments, leveraging each team member's skills effectively. Collaborative decision-making fostered diverse perspectives when tackling design and technical challenges. Rigorous testing and iteration refined the system, addressing issues and enhancing functionality based on feedback. Thorough documentation preserved knowledge for future reference and facilitated seamless transitions. Attention to database design and GUI usability resulted in efficient data management and user-friendly interfaces. Robust error handling and security measures were implemented to ensure reliability and protect sensitive information. Anticipating scalability and performance needs, optimizations were made to support future growth. Embracing a culture of continuous improvement, feedback from users and stakeholders guided ongoing enhancements and feature additions. Overall, leading this project provided invaluable experience in navigating complex technical implementations while fostering teamwork and innovation |

1. **Self-evaluation from lowest 0 mark to highest 10 mark. Justify your evaluation.**

|  |
| --- |
| Self-evaluation (10): |
| Overall, I think my performance this project was great. even though we started late and we still managed to complete it on time and make the requirements were fulfilled. My role as a leader came with some difficulties but I still managed to pull through with my best effort and complete the necessary task. |

**Student’s Signature: (showven)**

### 7.2.3 EEE HONG JIE

**Name: EEE HONG JIE ID: I23024621**

**Description of Self Contributions**

|  |  |  |
| --- | --- | --- |
| **Task#** | **Tasks assigned** | **Remarks** |
| 1 | Add book, delete book, edit book functions | Book Manager functions |
| 2 | Do some of the GUI interface design |  |
| 3 | Do documentation for the UML diagram, ppt and the whole report | Formatting, creating template, and others |

**Lesson learned by completing this assignment:**

|  |
| --- |
| In completing the assignment for the NES Book Management System (NES BMS), I not only mastered the knowledge of technology and system design but, more importantly, learned the importance of teamwork and communication, as well as how to effectively solve problems.  Teamwork and communication played a crucial role in this project. Collaborating with my team members required us not only to discuss, plan, and implement various functionalities and modules together but also to communicate and work together effectively. This collaborative experience deepened my understanding of the value of teamwork and the importance of communication. I learned how to listen to others' opinions, how to provide constructive feedback, and how to allocate tasks and take responsibility within the team.  During the technical development process, we encountered various technical and design challenges. These challenges required us to analyze, think, and experiment deeply to find the best solutions. This not only enhanced my technical skills but also strengthened my critical thinking and problem-solving abilities. I learned how to face challenges, how to learn from failures, and how to continuously strive for excellence.  My team members had a positive impact on me. They encouraged me to challenge myself, provided support and assistance, and made me feel the strength of the team and the warmth of collaboration. Their presence motivated me to continuously improve and strive to be a better team member and individual.  This assignment provided me with valuable practical experience and knowledge, which will have a positive impact on my future career development. I not only learned technical and management skills but also developed teamwork, communication, and leadership abilities. These experiences will help me better adapt to future work environments, face various challenges, and achieve personal and professional success.  In conclusion, this assignment was not only a technical and academic challenge but also a journey of growth and learning. Through this experience, I have become more clear about my career goals and direction, while also strengthening my confidence and determination, laying a solid foundation for my future career. |

1. **Self-evaluation from lowest 0 mark to highest 10 mark. Justify your evaluation.**

|  |
| --- |
| Self-evaluation (7): |
| I would give myself a score of 7. I feel that I could have performed better in the assignment, and there is still room for improvement. |

**Student’s Signature: (HongJie)**