Describe Distribution Solution

for

Book Rental and Sales System

Version 1.1 approved

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Revision History

Name	Date	Reason For Changes	Version
Trinh Thai Linh	30-Nov-23	Create Document Template	1.0
Trinh Thai Linh	05-Dec-23	Add Contents to Document	1.1

1. Introduction

1.1 Purpose

This is a report prepared by Group 7 (Object-oriented Analysis and Design Class 20, 22-23) to Describe the Run-time Architecture Solution for Book Rental and Sales System and is written based on the reporting format "IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications".

1.2 Intended Audience and Reading Suggestions

The different types of reader that the document is intended for are:

- **Designers:** Design the classes and the subsystems architecture that satisfies the requirements specified in this SRS.
- **Developers:** Implement codes from the design and these documents. They use this document as a blueprint, and it makes sure that, firstly, their code works properly, and secondly, it is in sync with others' codes.
- **Tester:** Use this document to understand the requirements. They have to create a test plan that outlines the scope of testing, testing objectives, test environment setup, resources required, and a schedule.
- **Documentation writers:** Ensure that the documentation aligns with the software's requirements as specified in the Software Requirements Specification (SRS). Verify that the documented information is accurate and complete.

1.3 Product Scope

The software, “Book Rental and Sales System”, is designed to provide a platform for users to rent, purchase, read books in both physical and electrical form. Additionally, it includes a forum where users can discuss with other readers about the books they purchased, rented or simply ones that captured their interest. The system aims to enhance the reading experience and promote the reading community engagements.

1.4 References

[1] Form of presentation IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

[2] System Requirements Specification Content and Format Standard, which specifies the content and format of this specification.

[3] Previous Project of Object-Oriented Analysis and Design Course, The Cargo Carriage System.

2. Describe Distribution

2.1 Deployment Model

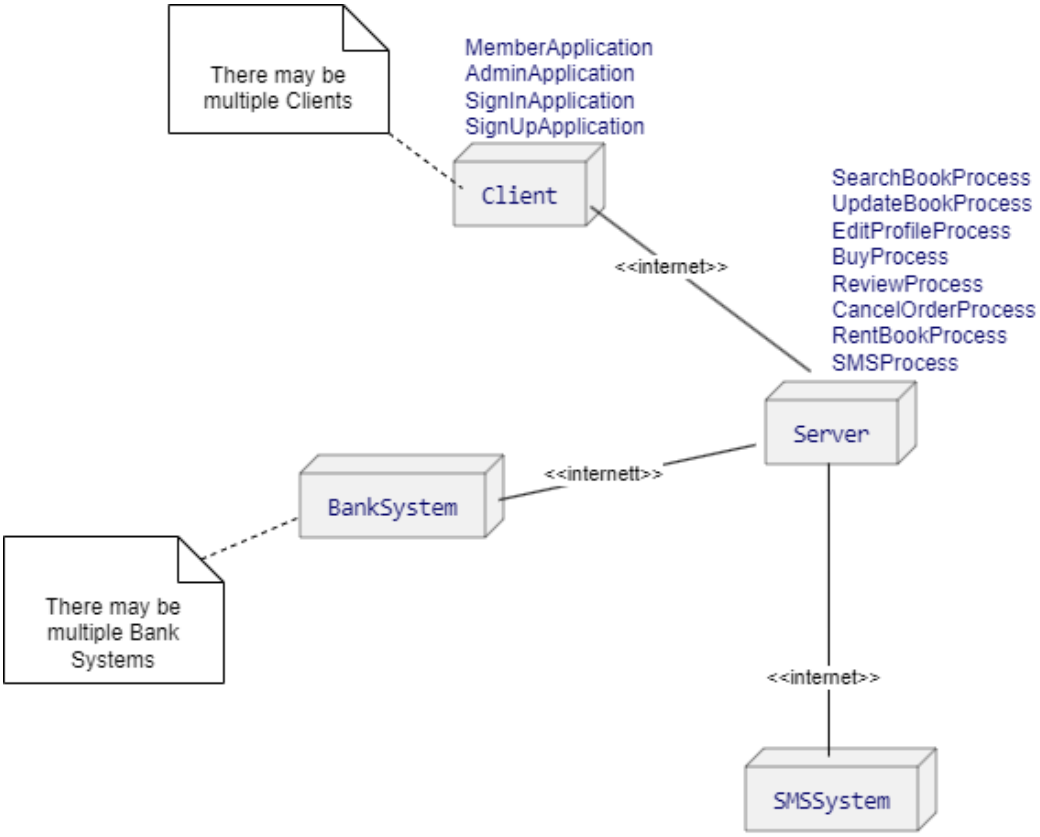

Figure 2-1: Deployment Model.

2.2 Applying the Distribution Mechanism (RMI)

2.2.1 Layer Diagram

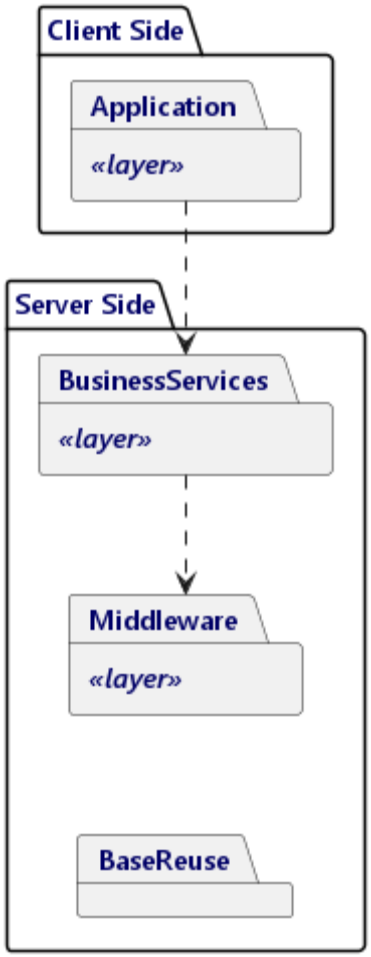

Figure 2-2: Main Layers Diagram.

2.2.2 Layer Description

- **Application:** The Application layer contains application-specific design elements.
- **Business Services:** The Business Services layer contains business-specific elements that are used in several applications.
- **Middleware:** Provides utilities and platform-independent services.
- **Base Reuse:** Basic reusable design elements.

2.2.3 Packages and Their Dependencies

2.2.3.1 Package Dependencies Diagram

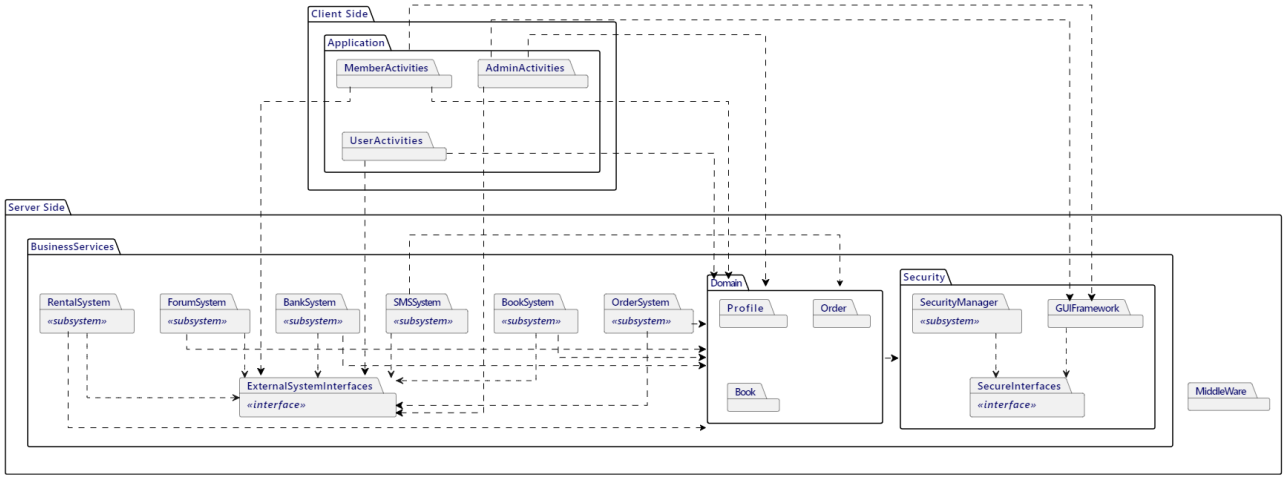

Figure 2-3: Packages and Their Dependencies Diagram.

2.2.3.2 Package Dependencies Descriptions

- **MemberActivities:** Contains the design elements that support the Member's applications.
- **AdminActivities:** Contains the design elements that support the Admin's applications.
- **UserActivites:** Contains the design elements that support both Member and Admin's applications. (for example: Cancel Order, Edit Profile, SignIn)
- **RentalSystem subsystem:** Encapsulates behaviours to support Rental applications.
- **ForumSystem subsystem:** Encapsulates behaviours to support Forum related applications.
- **BankSystem subsystem:** Encapsulates communication with all external bank systems.
- **SMSSystem subsystem:** Encapsulates communication with the external SMS system.
- **BookSystem subsystem:** Encapsulates behaviours to support Books related applications.
- **OrderSystem subsystem:** Encapsulates behaviours to support Orders related applications.

- **External System Interfaces:** Contains the interfaces that support access to external systems. This is so that the external system interface classes can be version controlled independently from the subsystems that realize them.
- **Base Reuse:** Basic reusable design elements.
- **Domain:** Contain the core Book Rental and Sales System's abstractions.
- **SecurityManager Subsystem:** Provides the implementation for the core security services.
- **SecureInterface:** Contains the interfaces that provide clients access to security services.
- **GUI Framework:** This package comprises a whole framework for user interface management. This framework is security-aware, it has a login window that will create a server-resident user context object.

3. Appendix A: Glossary

- **Analysis class:** A class used to model interaction between the system's surroudings, control, information and associate behavior specific in system(Boundary class, control class, Entity class)
- **Architectural layer:** Layer is contructed, progressed and concerned with the logical divison of components and functionality in system.
- **Bank System:** A system supports finance management of system and stakeholders for transactions.
- **SMSSystem:** A system supports SMS services for Member and Admin.
- **Context Diagram:** A context diagram is a data flow diagram, with only one massive central progress that subsumes everything inside the scope of the system. It shows how the system will receive and send data flows to the external entities involved.
- **Dependency:** Exists between two elements if changes to one element may cause changes to the other.
- **Layer:** A grouping of classes, packages or subsystems that together have responsibility for one major aspect of a system.
- **Package:** A general-purpose mechanism for organizing elements into groups. They provide the ability to organize the model under development. A package is represented as a tabbed folder.
- **Security:** Is the degree of resistance to, or protection for data, resources of customer from harm.
- **Deployment View:** shows the configuration of run time processing nodes and the components that live on them.