
Use Case Design Solution

for

Book Rental and Sales System

Version 1.3 approved

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Group 7

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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	07-Dec-23	Add Sequence Diagrams	1.1
Pham Tung Duong	07-Dec-23	Add Class Diagrams	1.2
Le Quang Chinh	08-Dec-23	Add Sequence with Mechanism	1.2
Do Tien Dung	08-Dec-23	Add Class Diagrams	1.2
Pham Tung Duong	08-Dec-23	Add changes to Class Diagrams	1.3
Trinh Thai Linh	08-Dec-23	Add changes to Sequence Diagrams	1.3

1. Introduction

1. Purpose

This is a report prepared by Group 7 (Object-oriented Analysis and Design Class 20, 22-23) 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”. This report provides the description of the architecture that is used in the Book Rental and Sales System’s development.

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.

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.

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. Use Case Realization

1. Sign In

2.1.1 Basic Flow

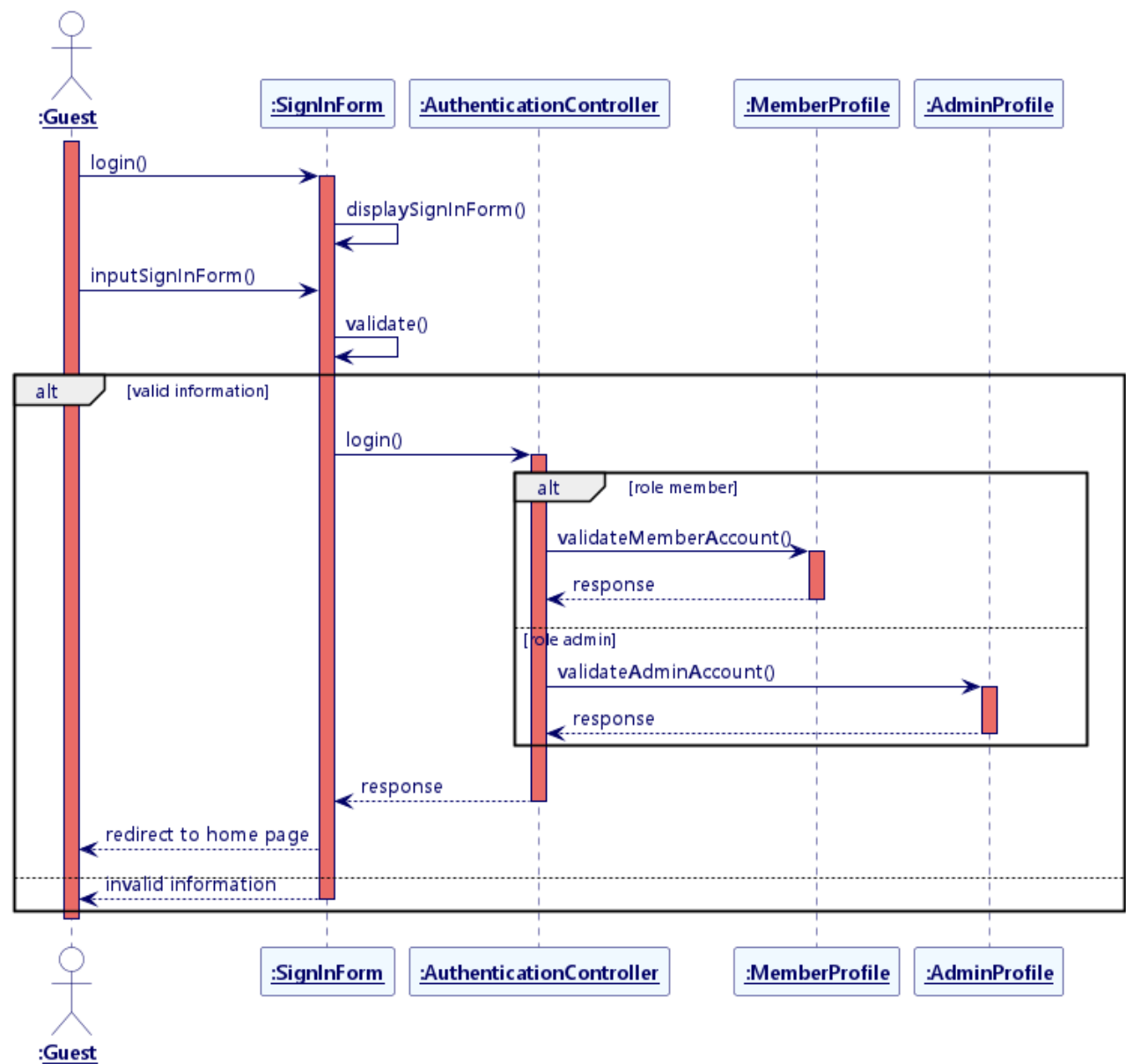


Figure 2-1: Sign In Sequence Diagram - Basic Flow.

2.1.2 Basic Flow - VOPC

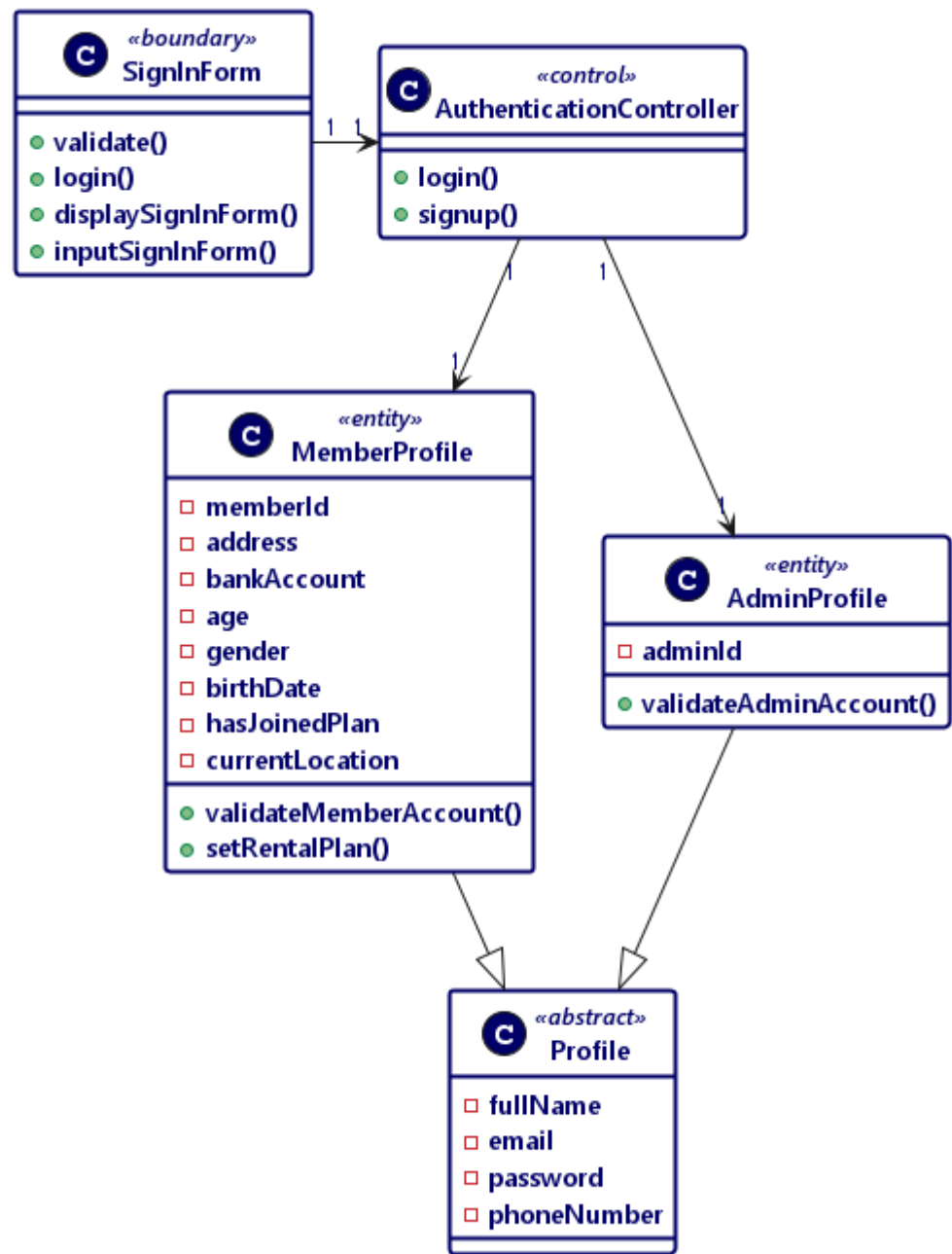


Figure 2-2: Log In Class Diagram

2.1.3 Basic Flow - Distribution

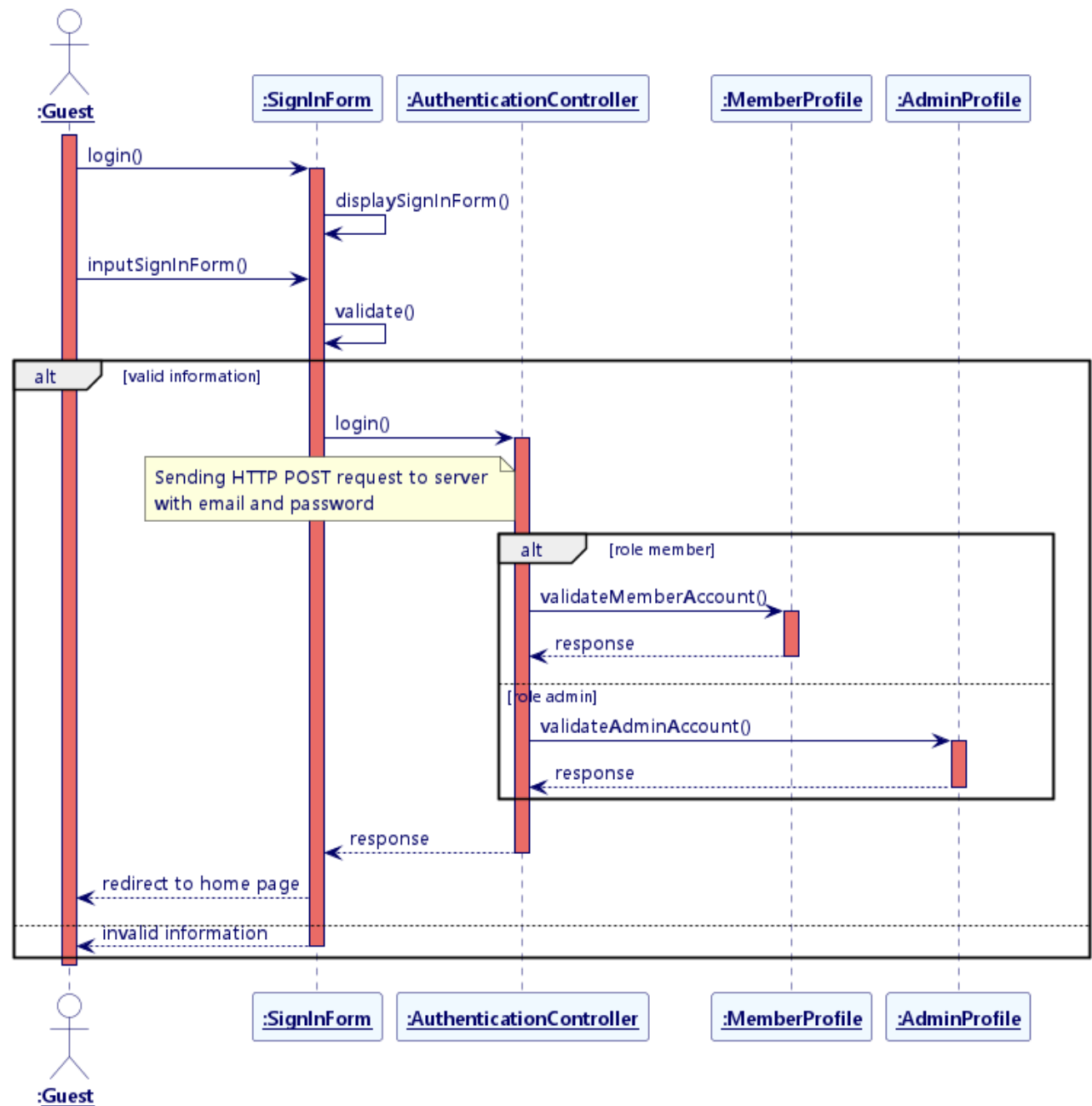


Figure 2-3: Log In Sequence Diagram with Distribution

2.1.4 Basic Flow – Security

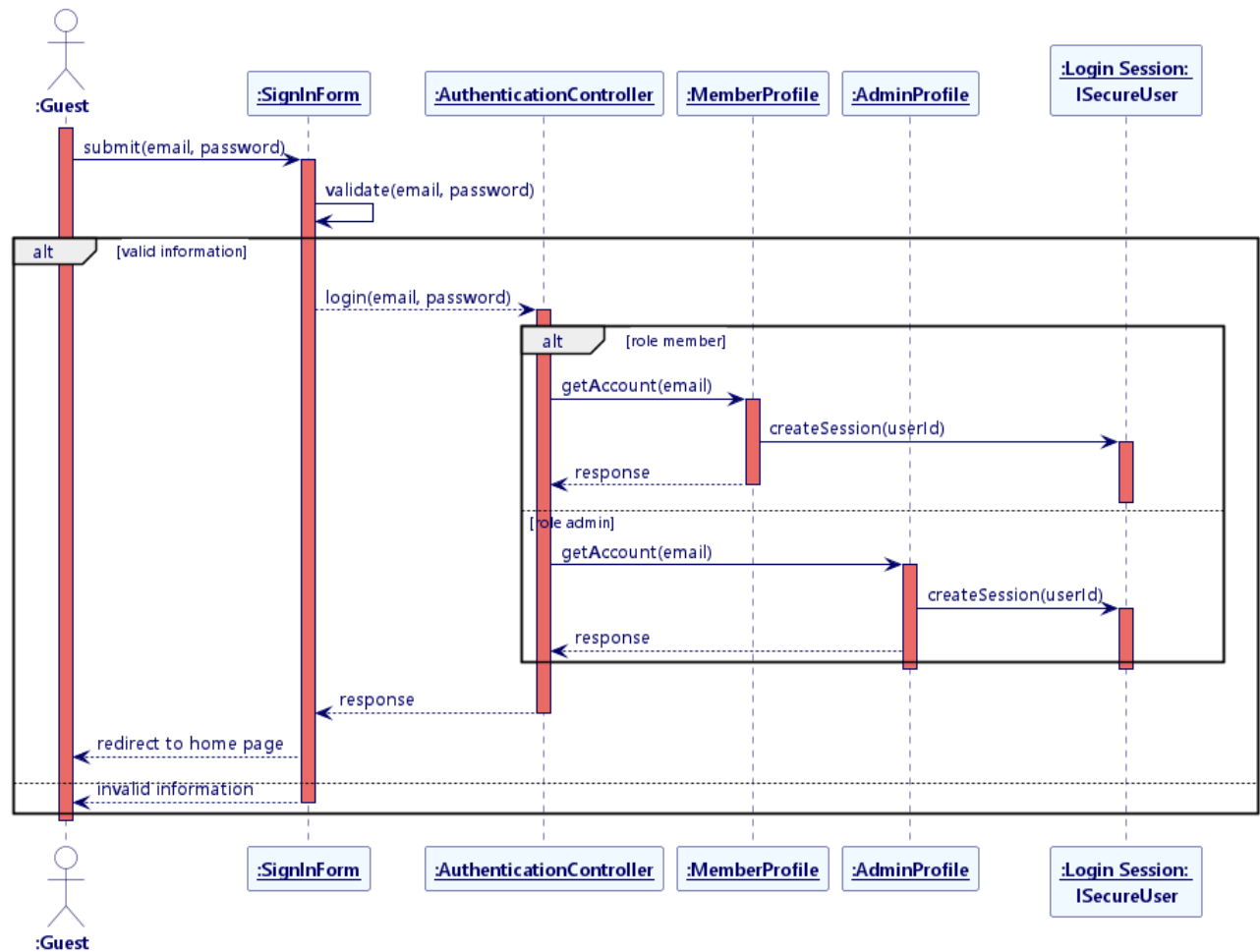


Figure 2-4: Sign In Sequence Diagram with Security

2. Sign Up

2.2.1 Basic Flow

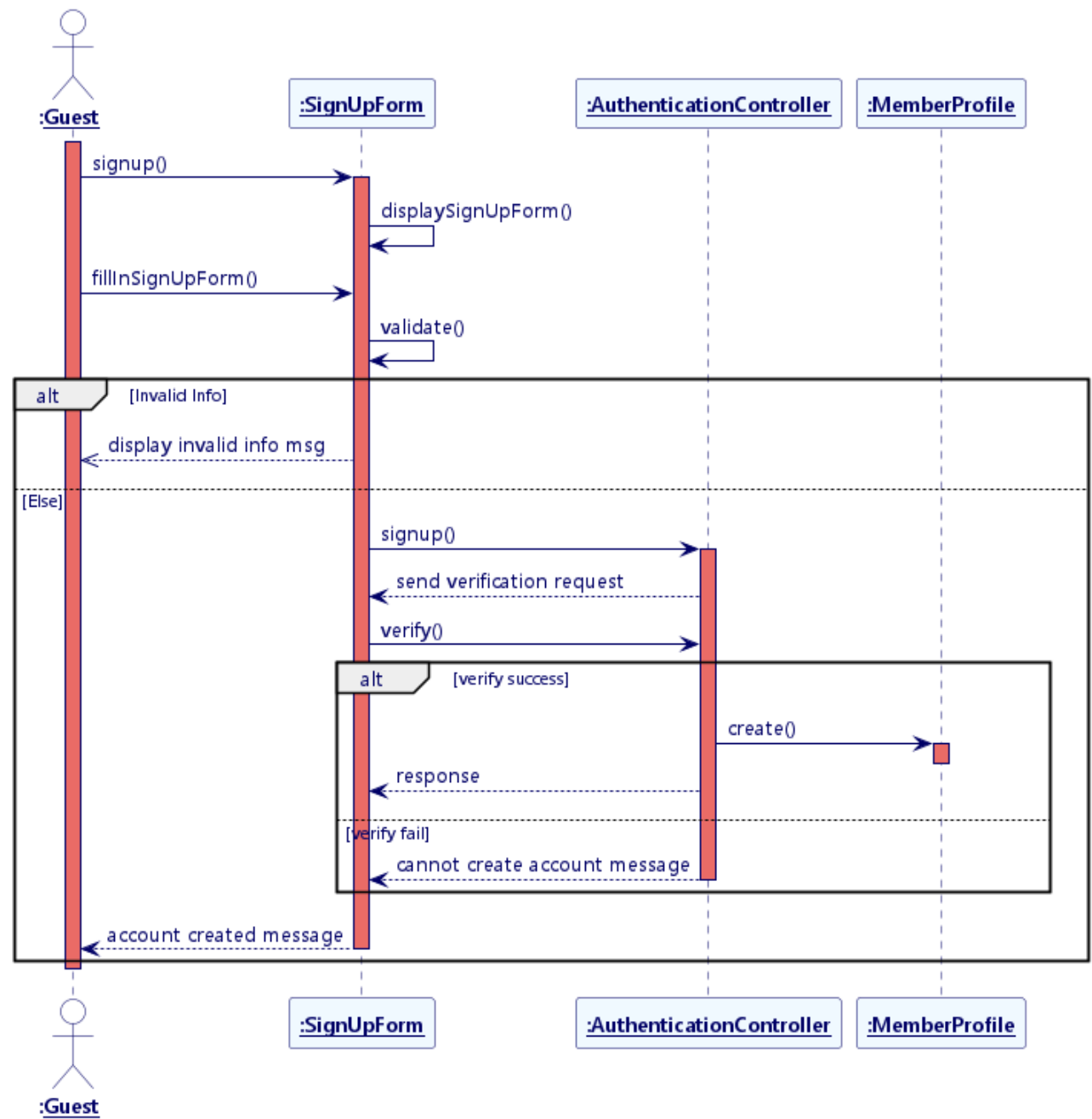


Figure 2-5: Sign Up Sequence Diagram - Basic Flow.

2.2.2 Basic Flow - VOPC

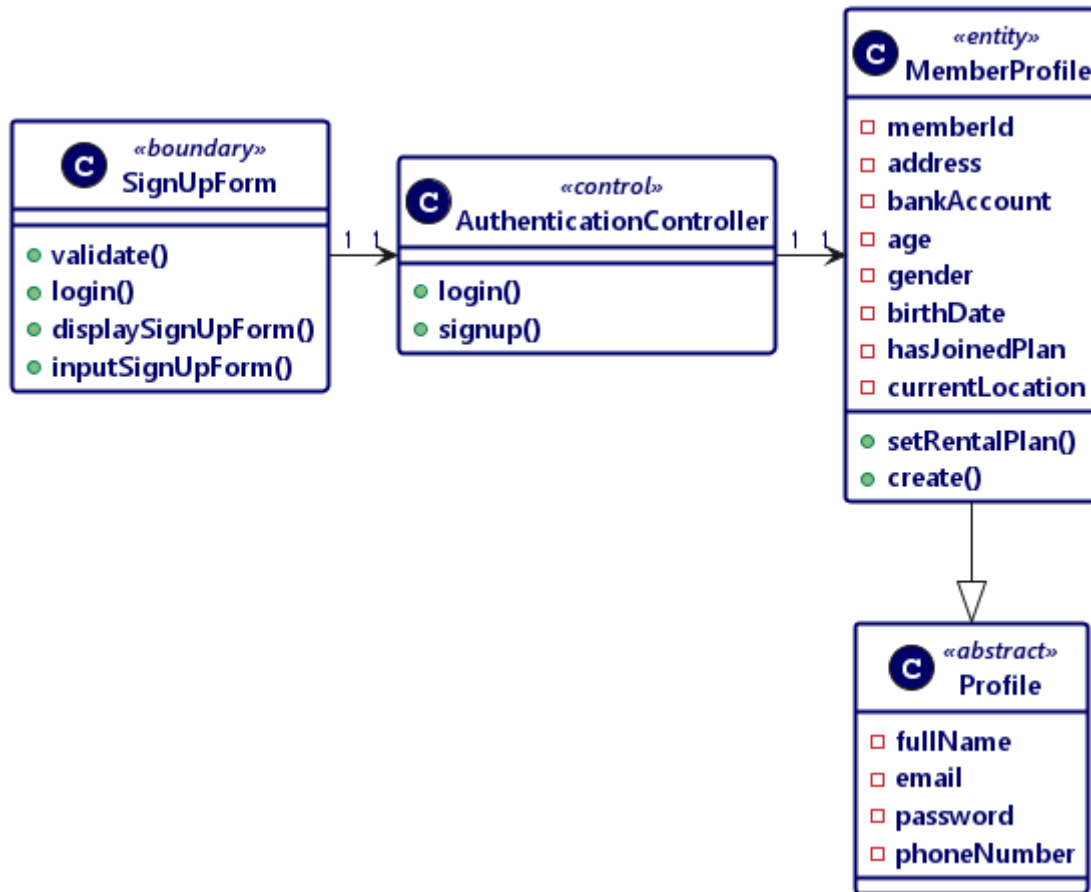


Figure 2-6: Sign Up Class Diagram

2.2.3 Basic Flow – Distribution

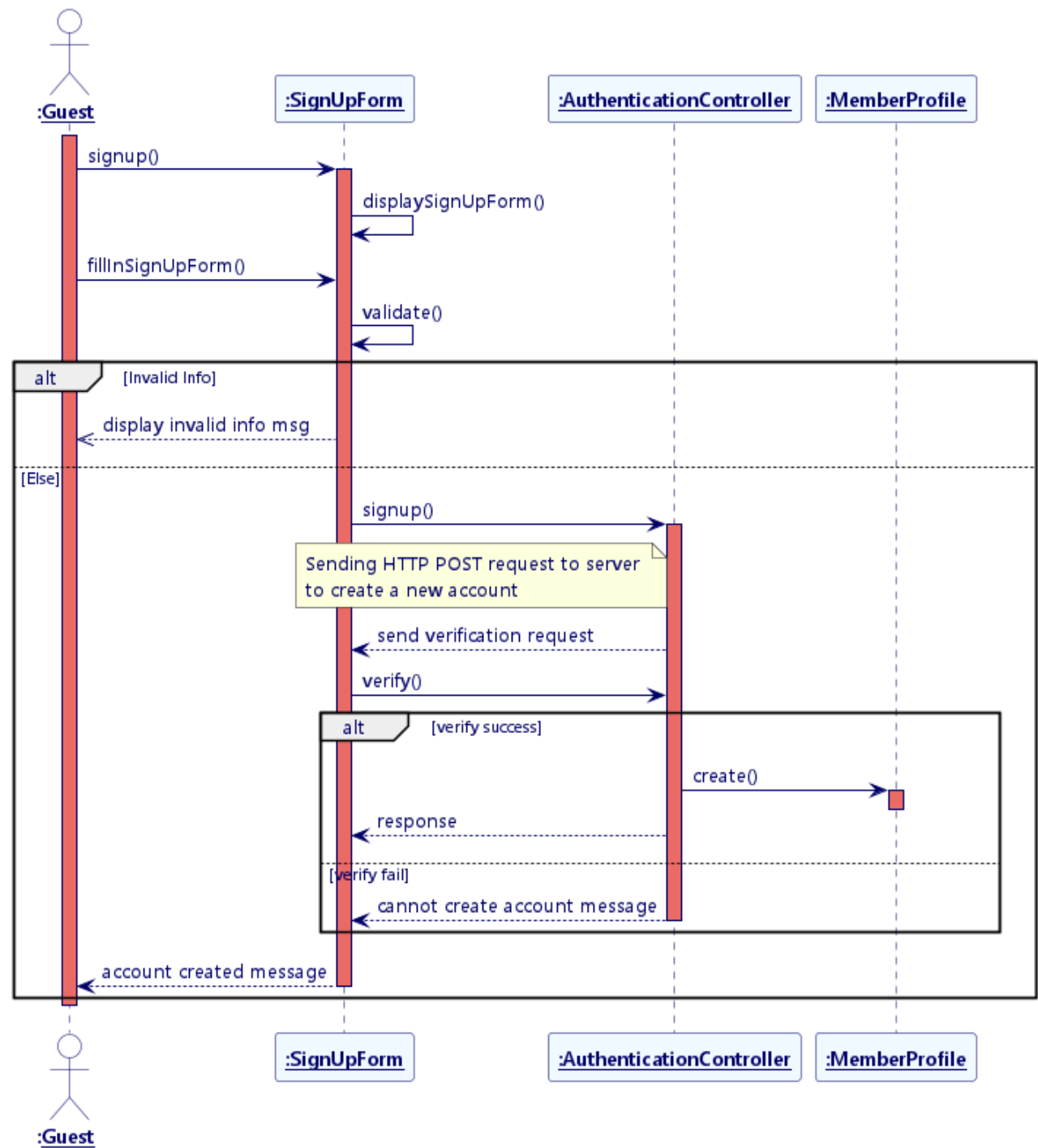


Figure 2-7: Sign Up Sequence Diagram with Distribution

2.2.4 Basic Flow - Persistence

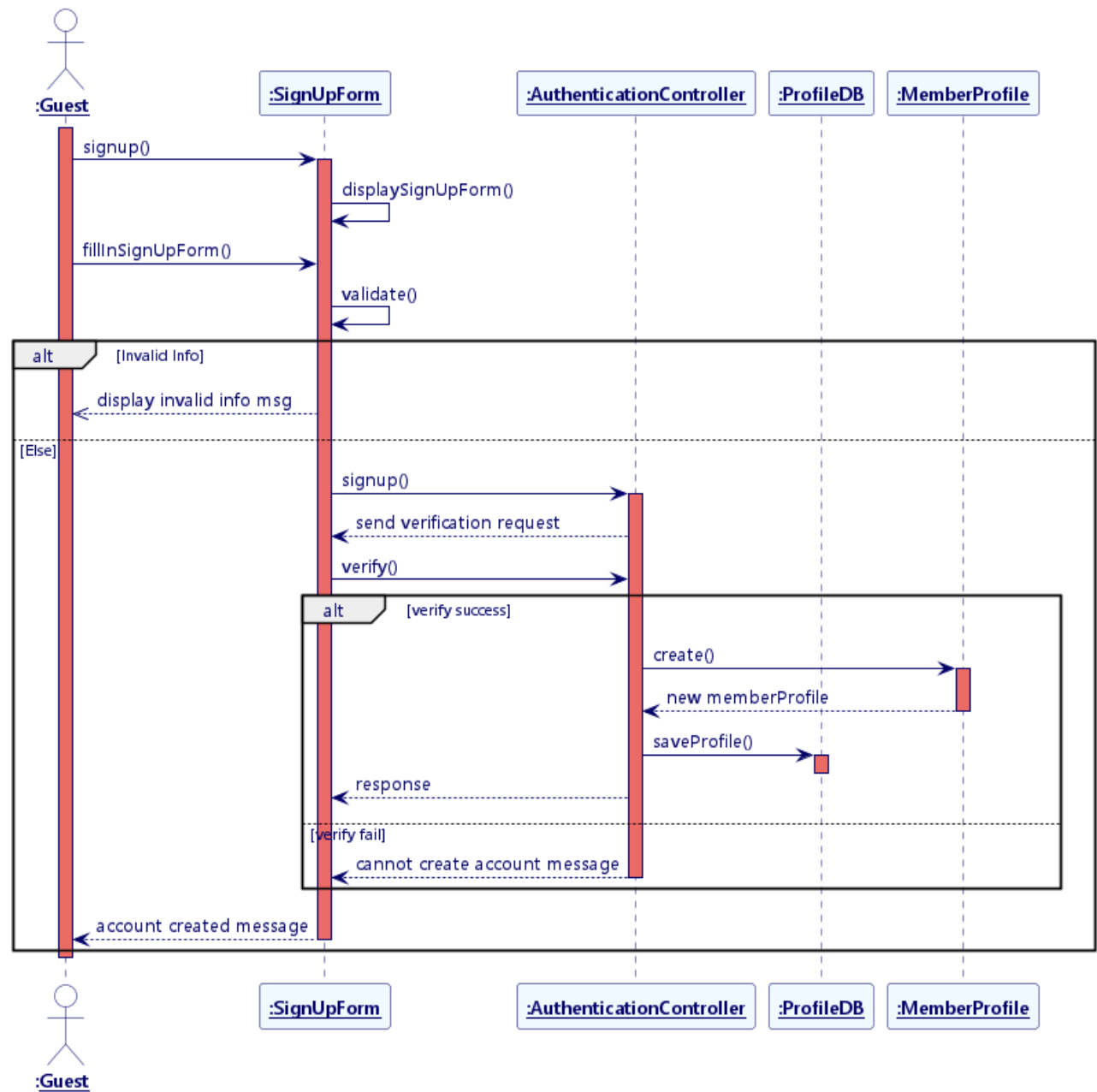


Figure 2-8: Sign Up Sequence Diagram with Persistence

3. Edit Profile

2.3.1 Basic Flow

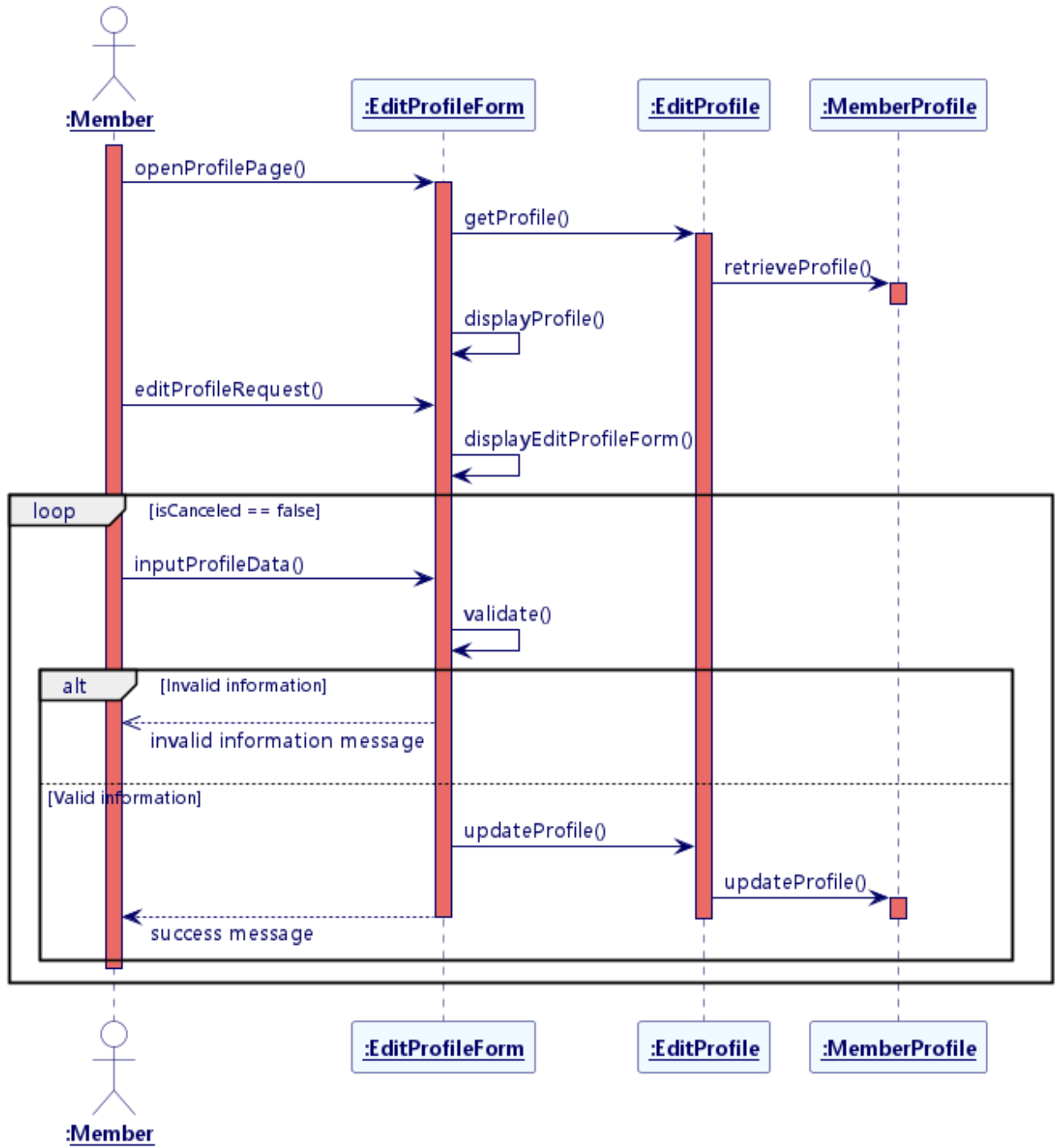


Figure 2-9: Edit Profile Sequence Diagram - Basic Flow.

2.3.2 Basic Flow - VOPC

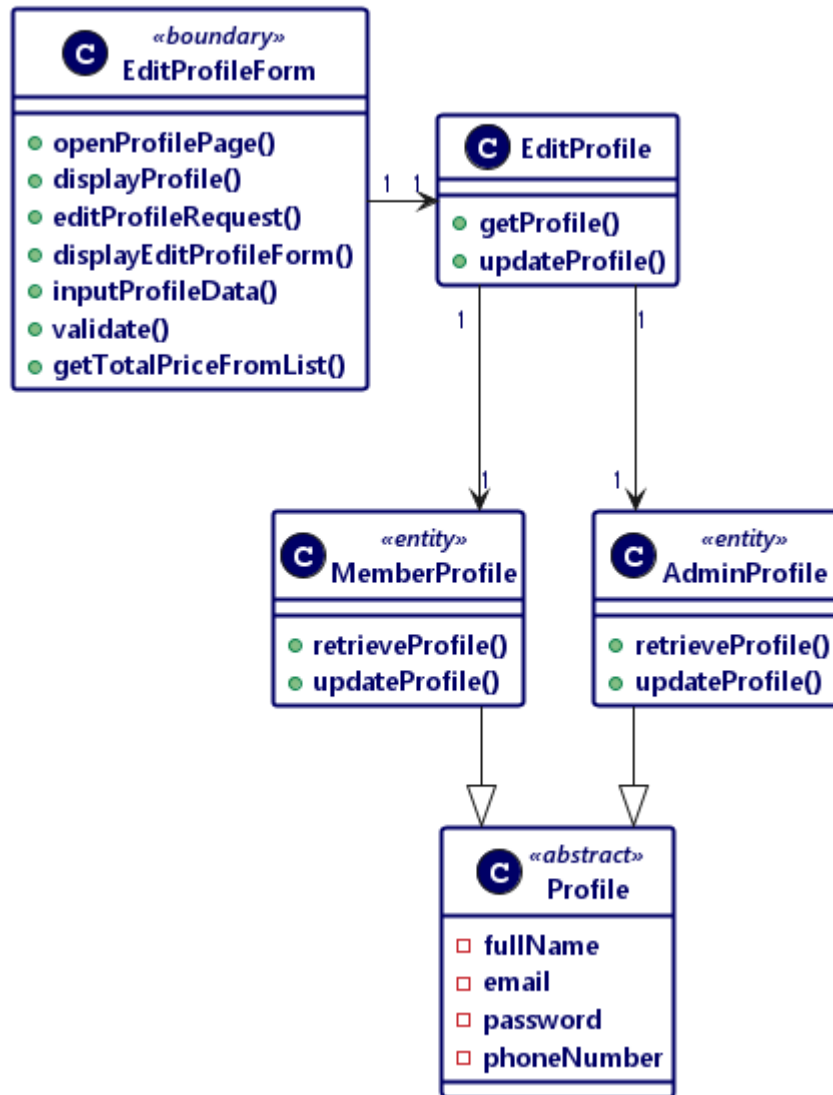


Figure 2-10: Edit Profile Class Diagram

2.3.3 Basic Flow - Distribution

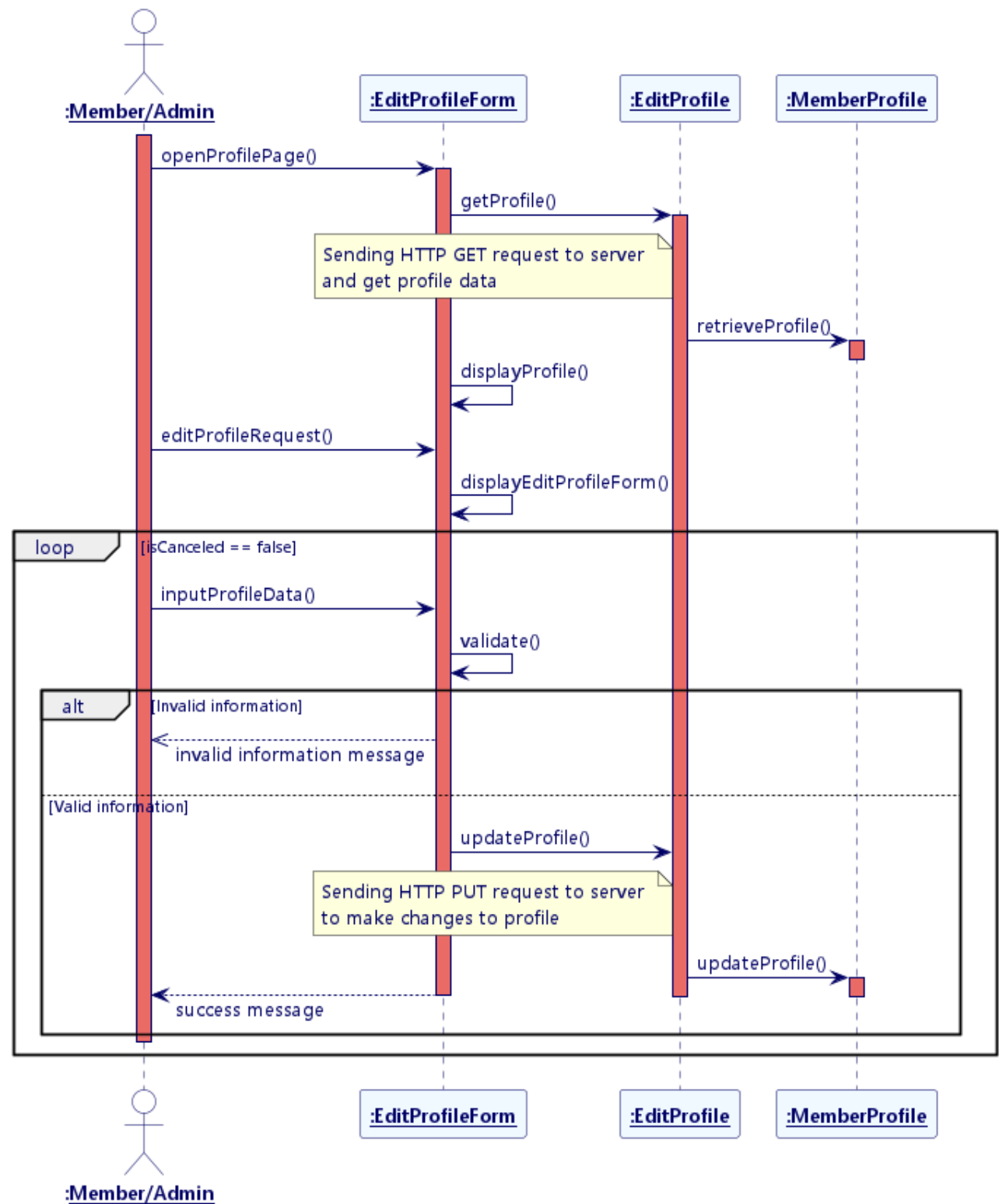


Figure 2-11: Edit Profile Sequence Diagram with Distribution

2.3.4 Basic Flow – Persistence

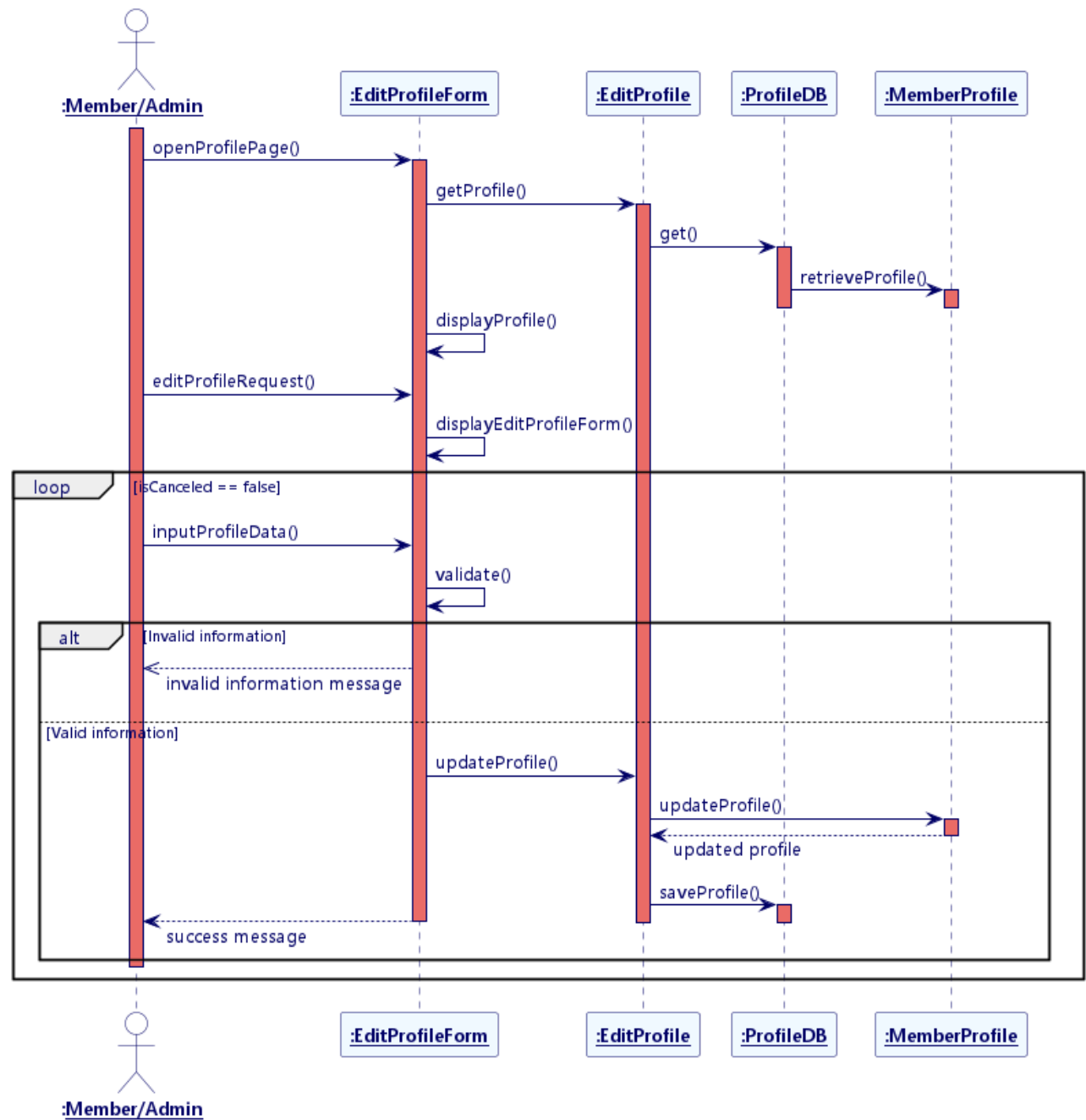


Figure 2-12: Edit Profile Sequence Diagram with Persistence

4. Forum Service

2.4.1 Add a Post

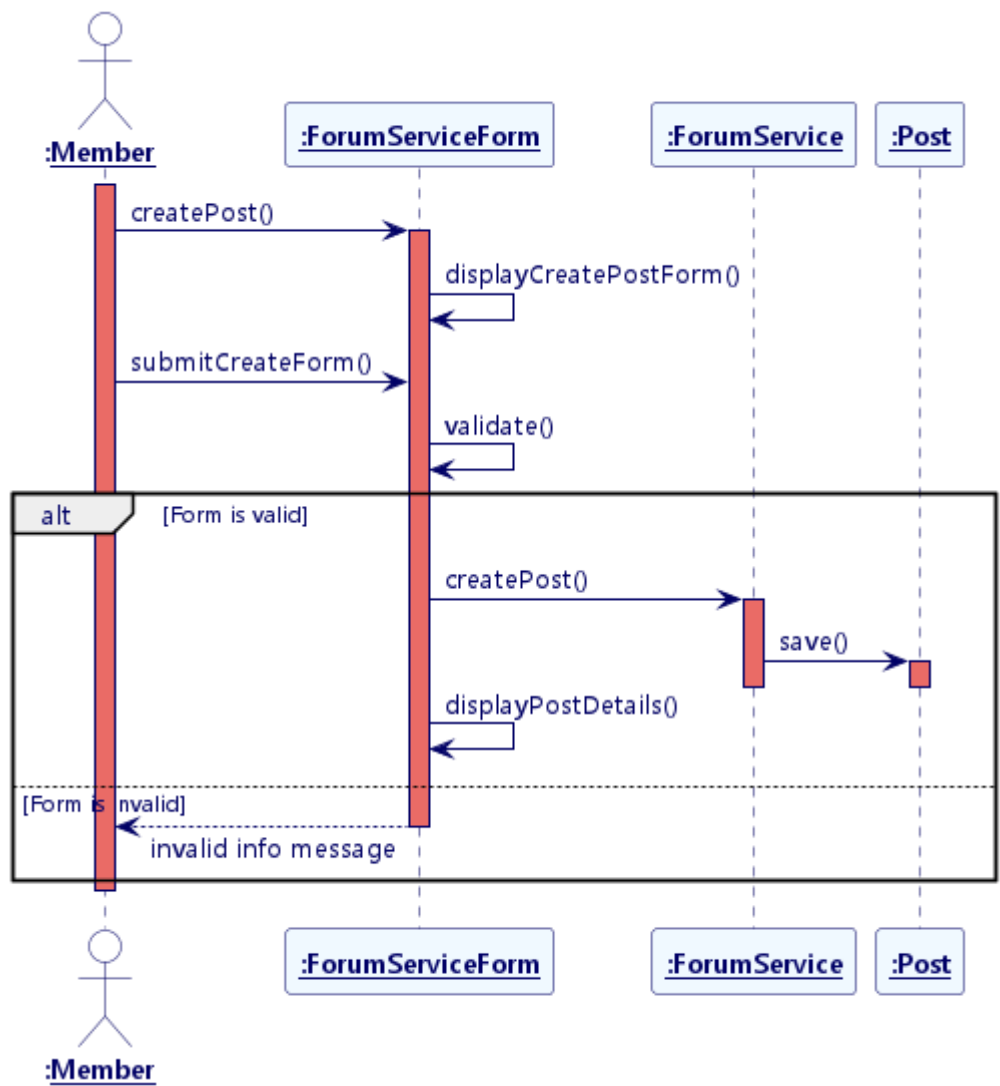


Figure 2-13: Add a Post Sequence Diagram - Basic Flow.

2.4.2 Add a Post - VOPC

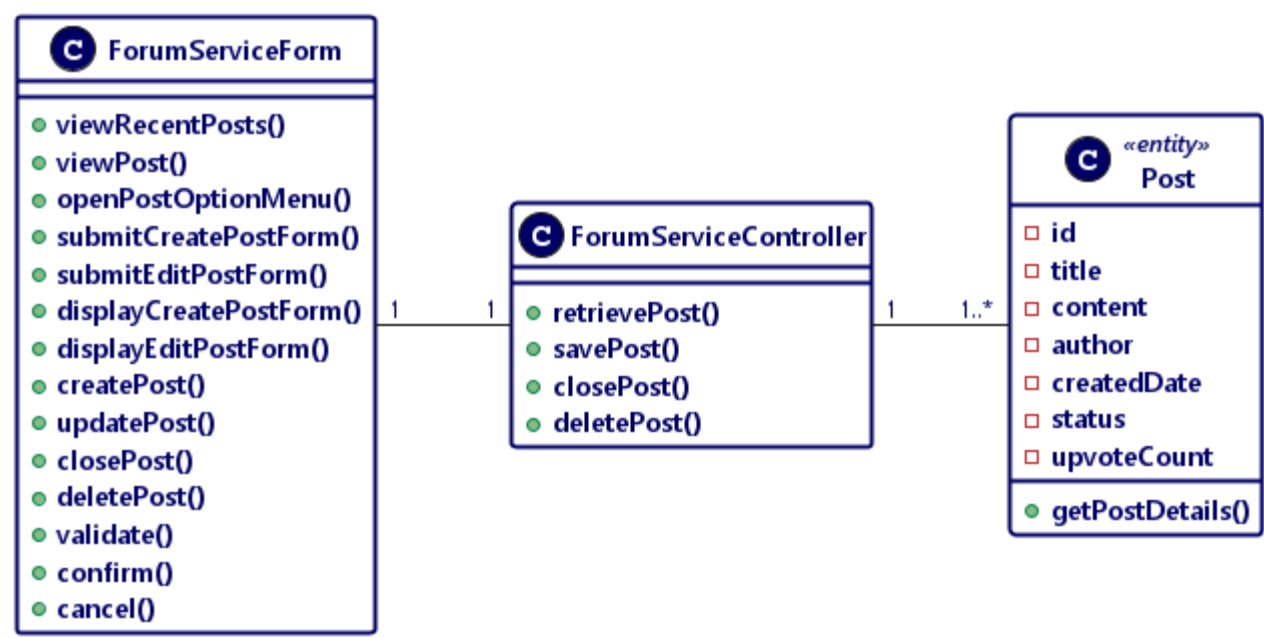


Figure 2-14: Add Post Class Diagram

2.4.3 Add a Post – Distribution

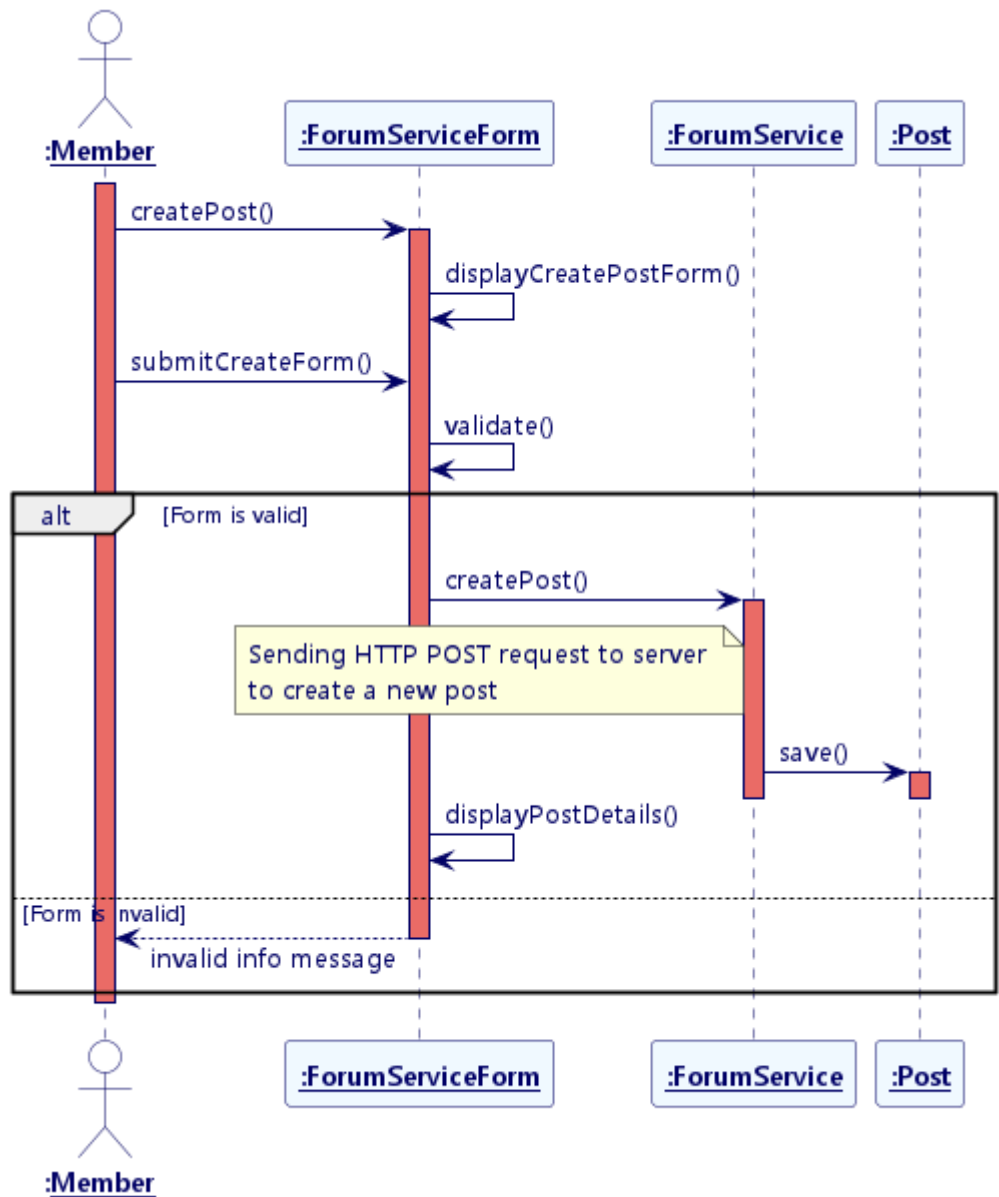


Figure 2-15: Add a Post Sequence Diagram with Distribution

2.4.4 Add a Post – Persistence

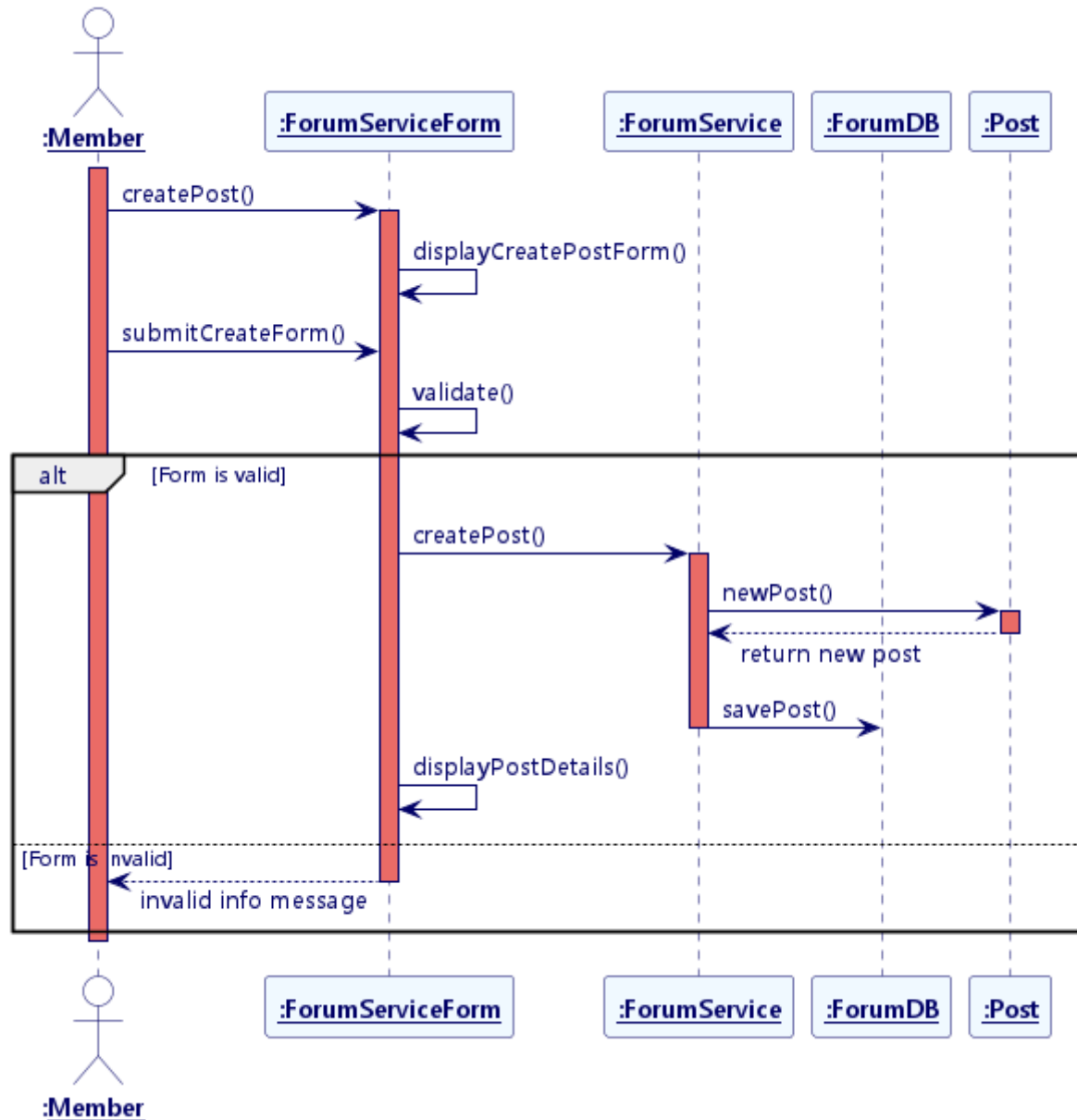


Figure 2-16: Add a Post Sequence Diagram with Persistence

2.4.5 Edit a Post

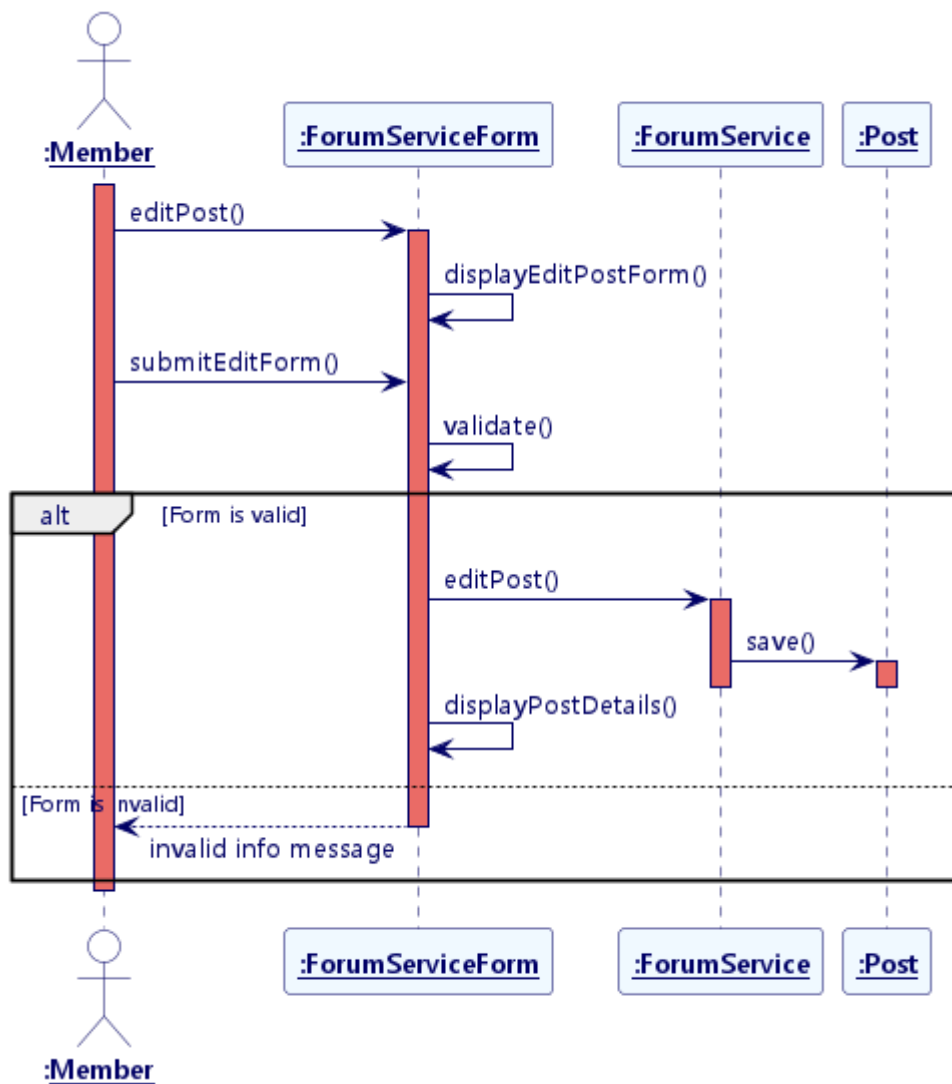


Figure 2-17: Edit Post Sequence Diagram - Basic Flow.

2.4.6 Edit a Post - VOPC

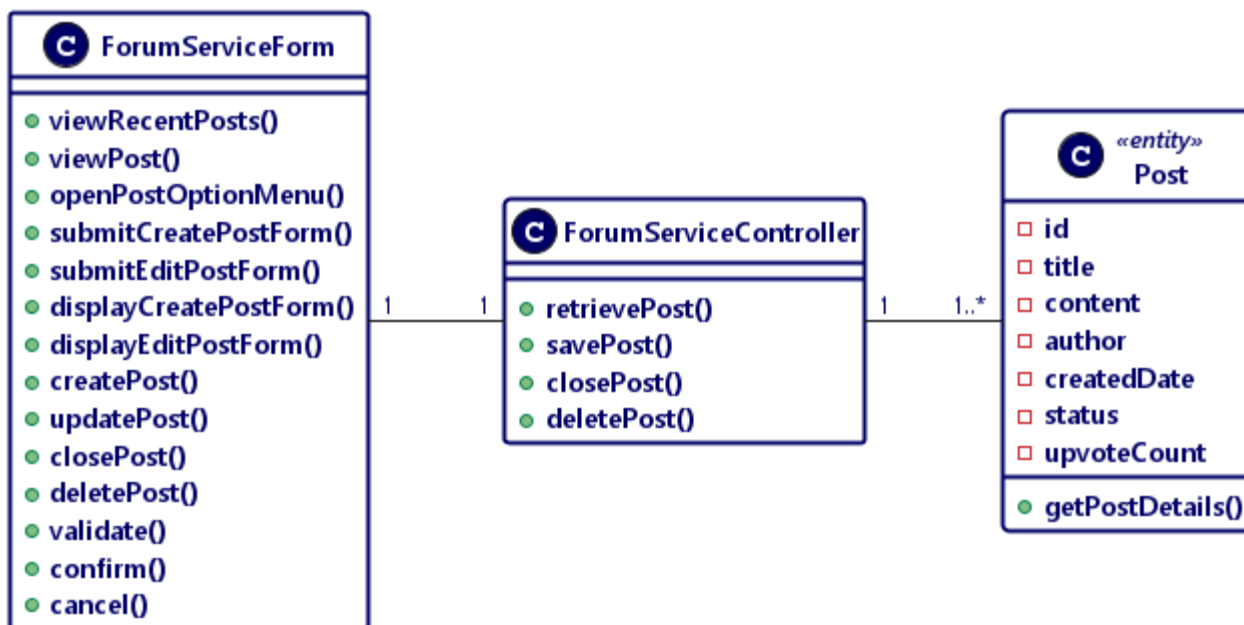


Figure 2-18: Edit Post Class Diagram

2.4.7 Edit a Post – Distribution

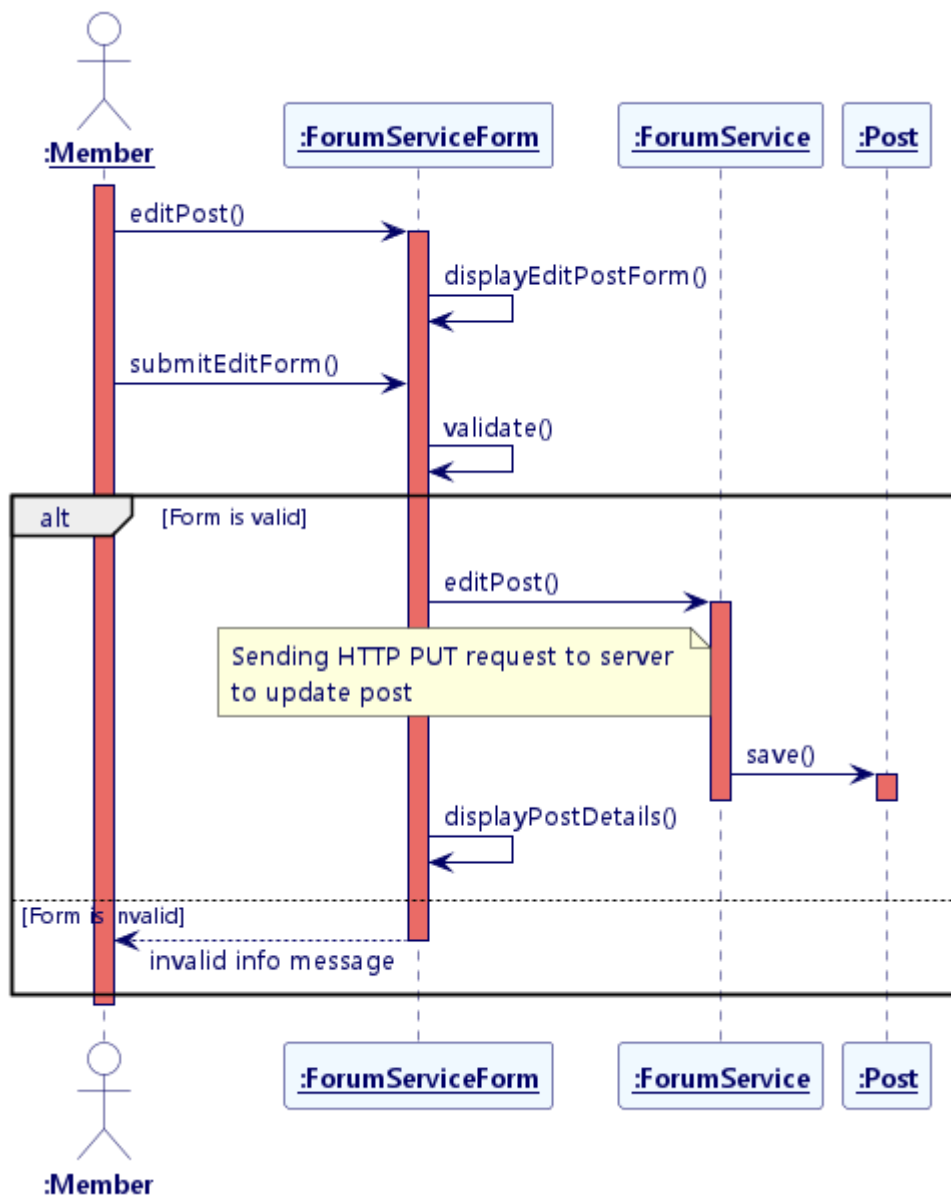


Figure 2-19: Edit a Post Sequence Diagram with Distribution

2.4.8 Edit a Post – Persistence

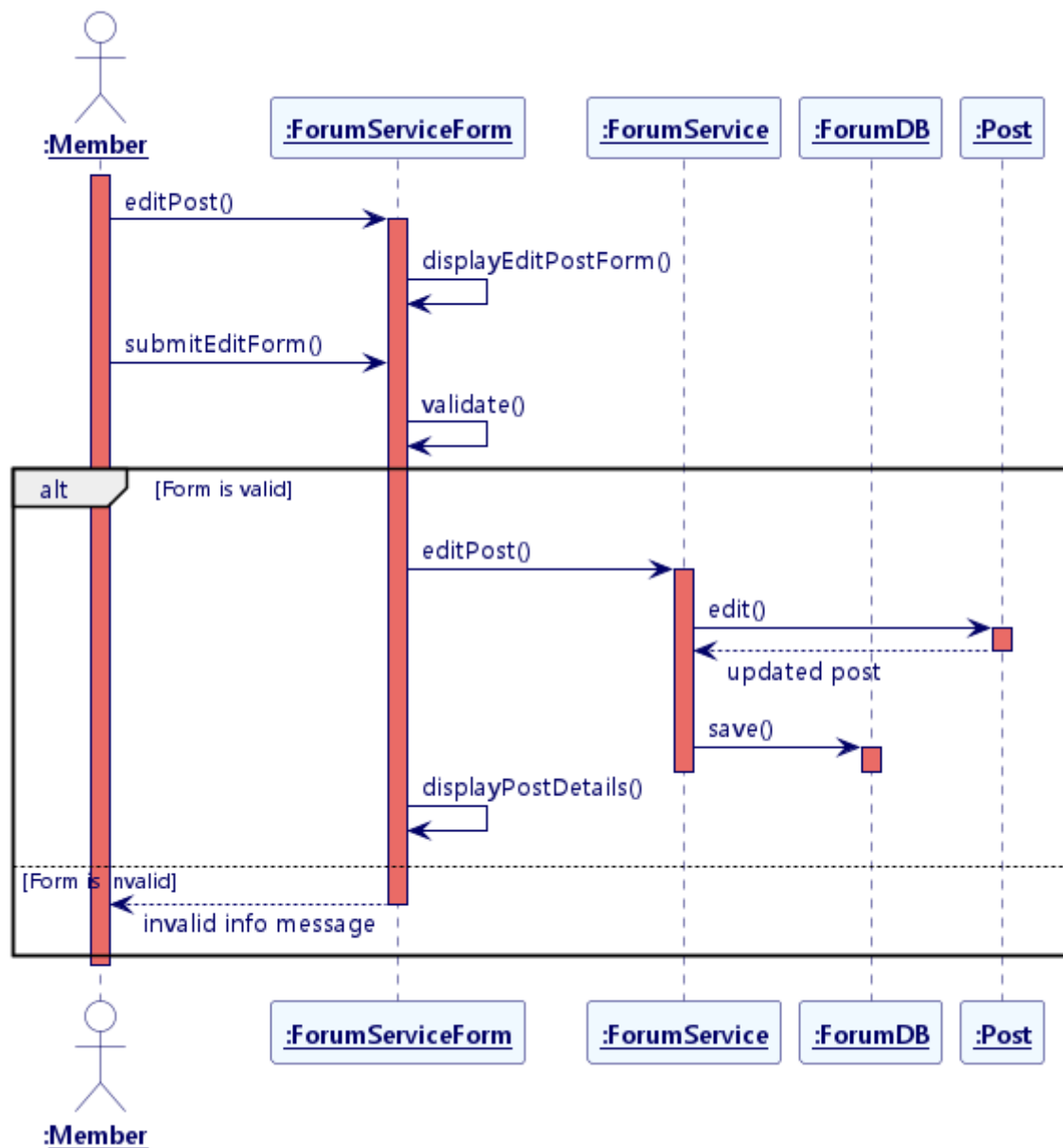


Figure 2-20: Edit a Post Sequence Diagram with Persistence

2.4.9 Close a Post

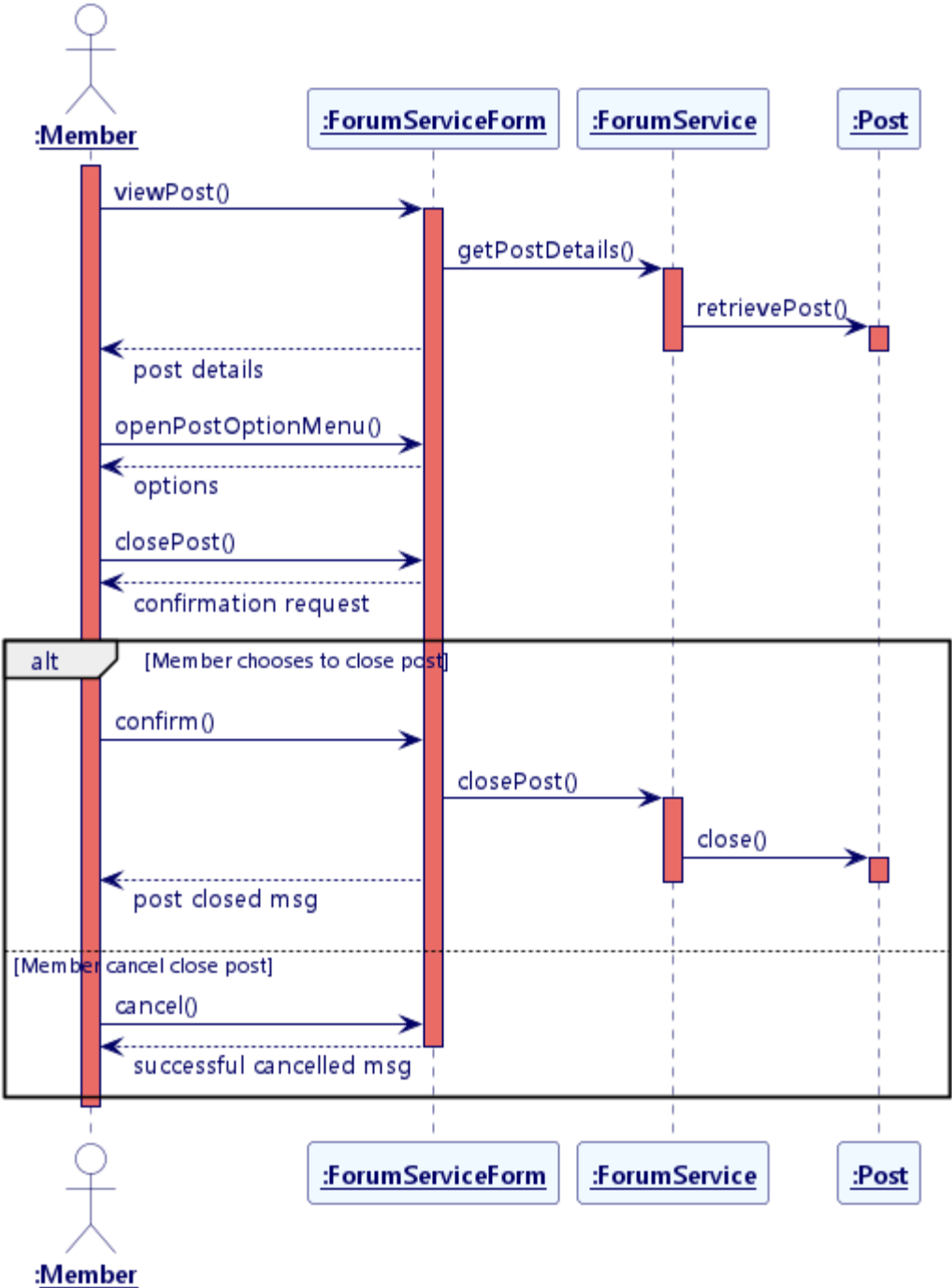


Figure 2-21: Close Post Sequence Diagram - Basic Flow.

2.4.10 Close a Post - VOPC

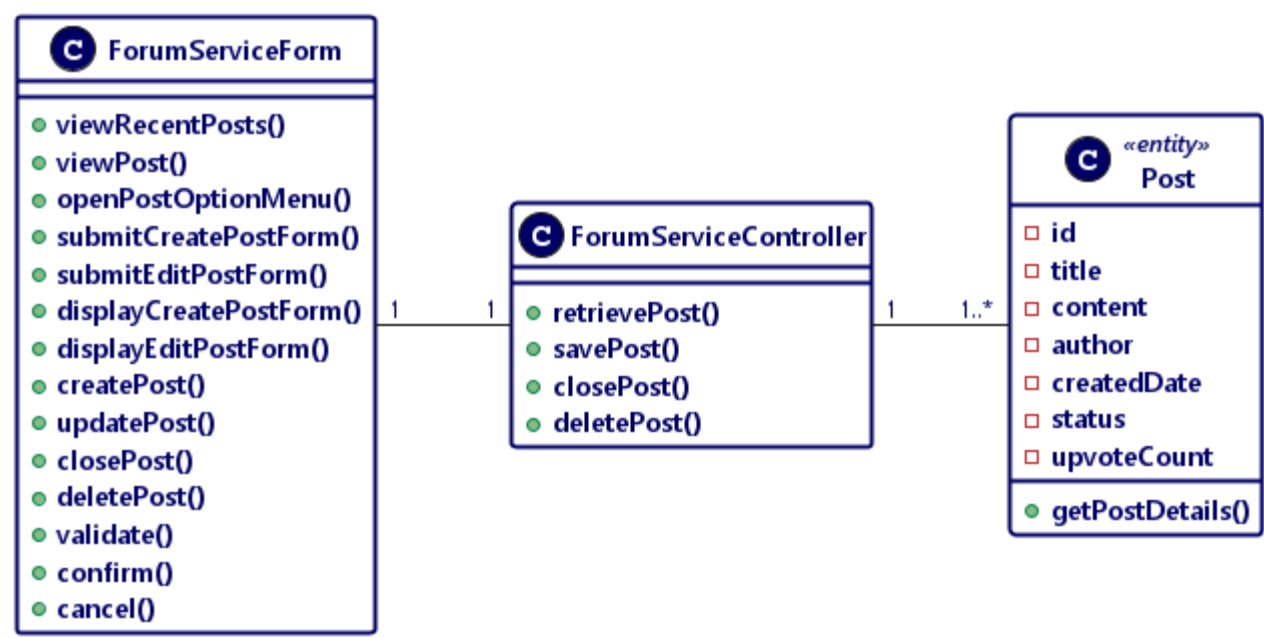


Figure 2-22: Close Post Class Diagram

2.4.11 Close a Post – Distribution

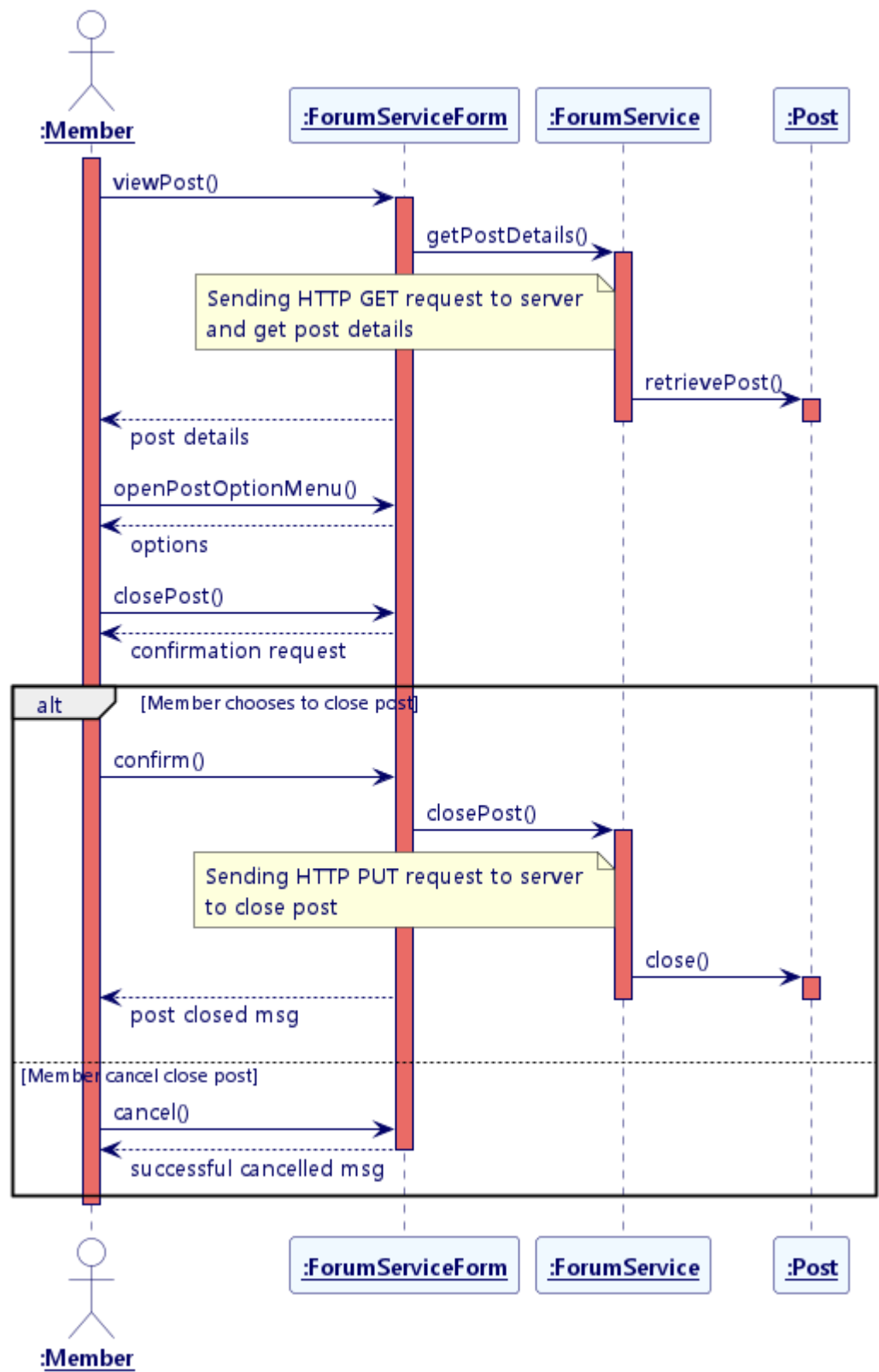


Figure 2-23: Close a Post Sequence Diagram with Distribution

2.4.12 Close a Post – Persistence

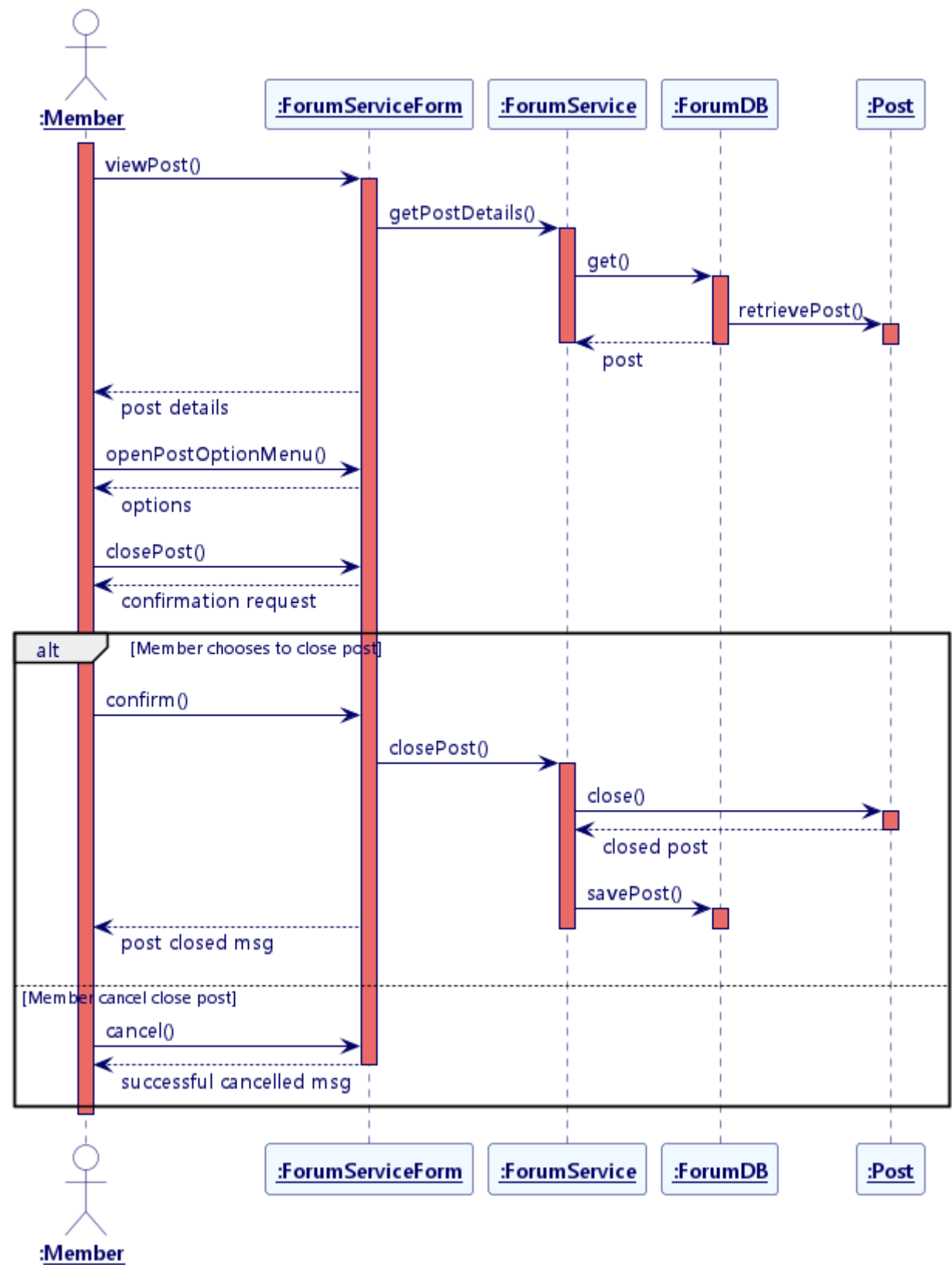


Figure 2-24: Close a Post Sequence Diagram with Persistence

2.4.13 Delete a Post

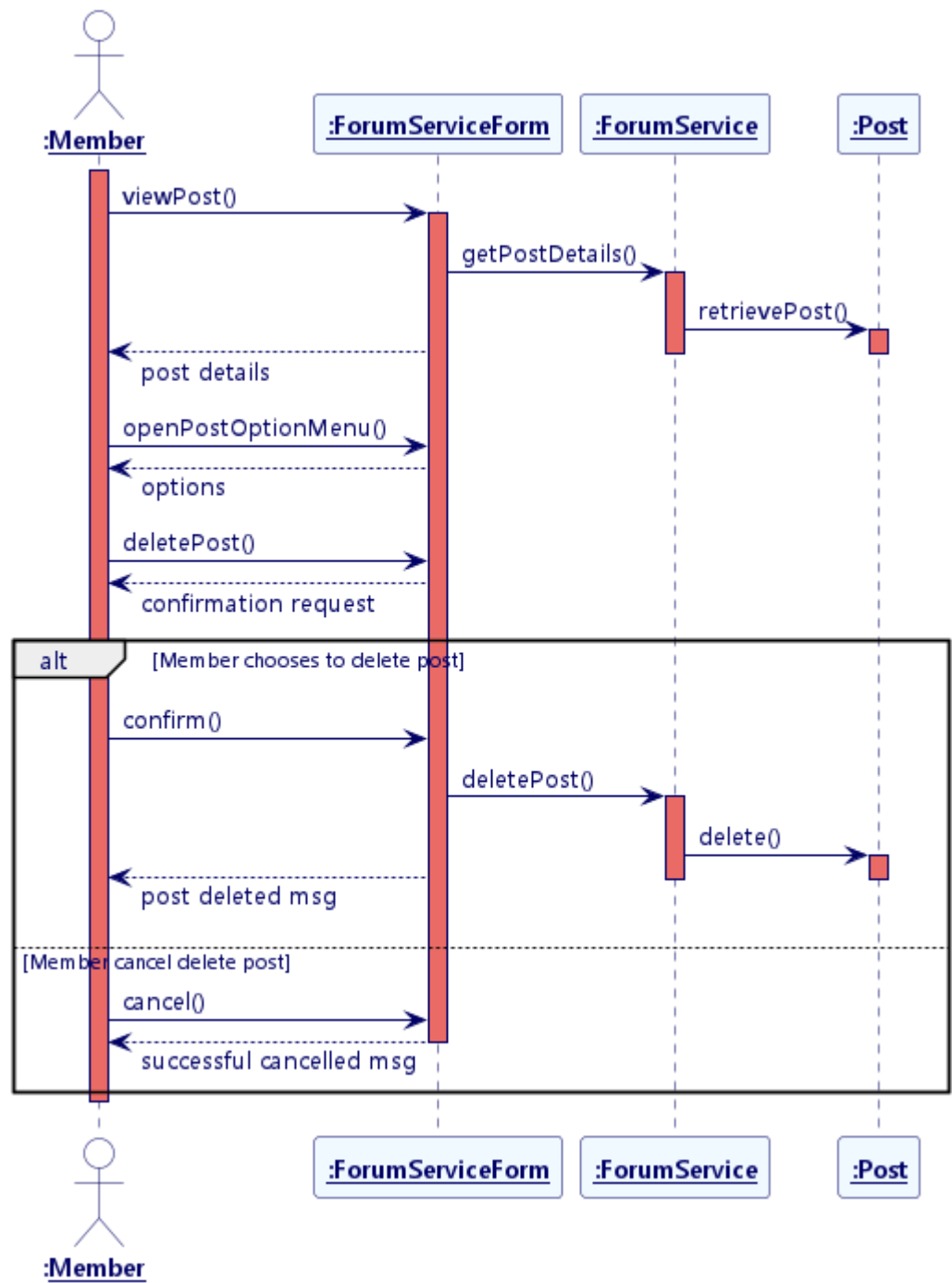


Figure 2-25: Delete Post Sequence Diagram - Basic Flow.

2.4.14 Delete a Post - VOPC

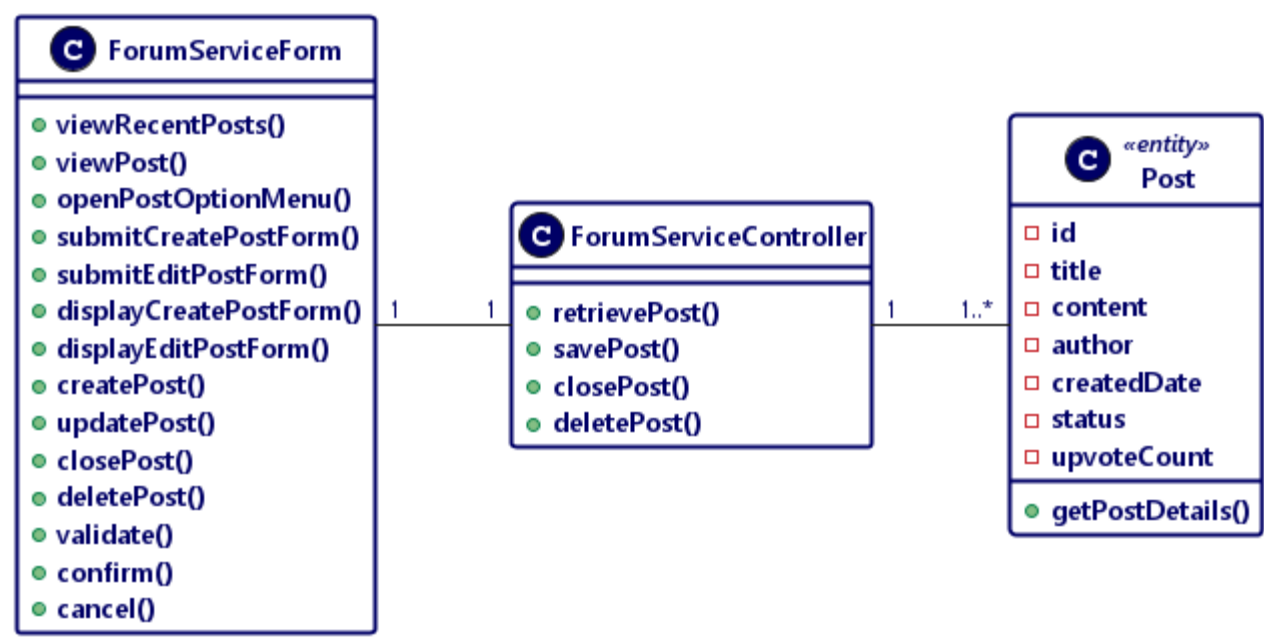


Figure 2-26: Delete Post Class Diagram

2.4.15 Delete a Post – Distribution

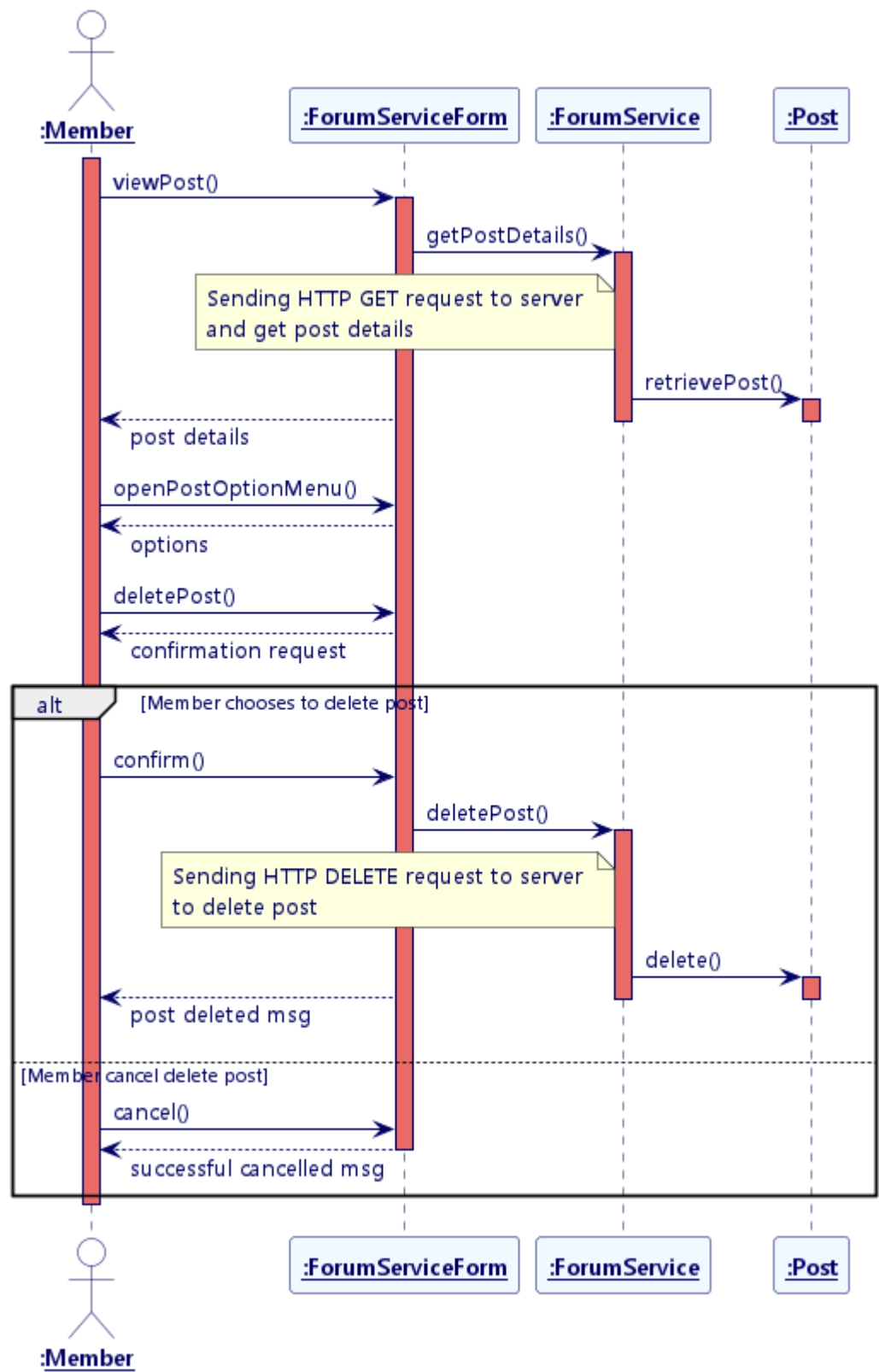


Figure 2-27: Delete a Post with Distribution

2.4.16 Delete a Post – Persistence

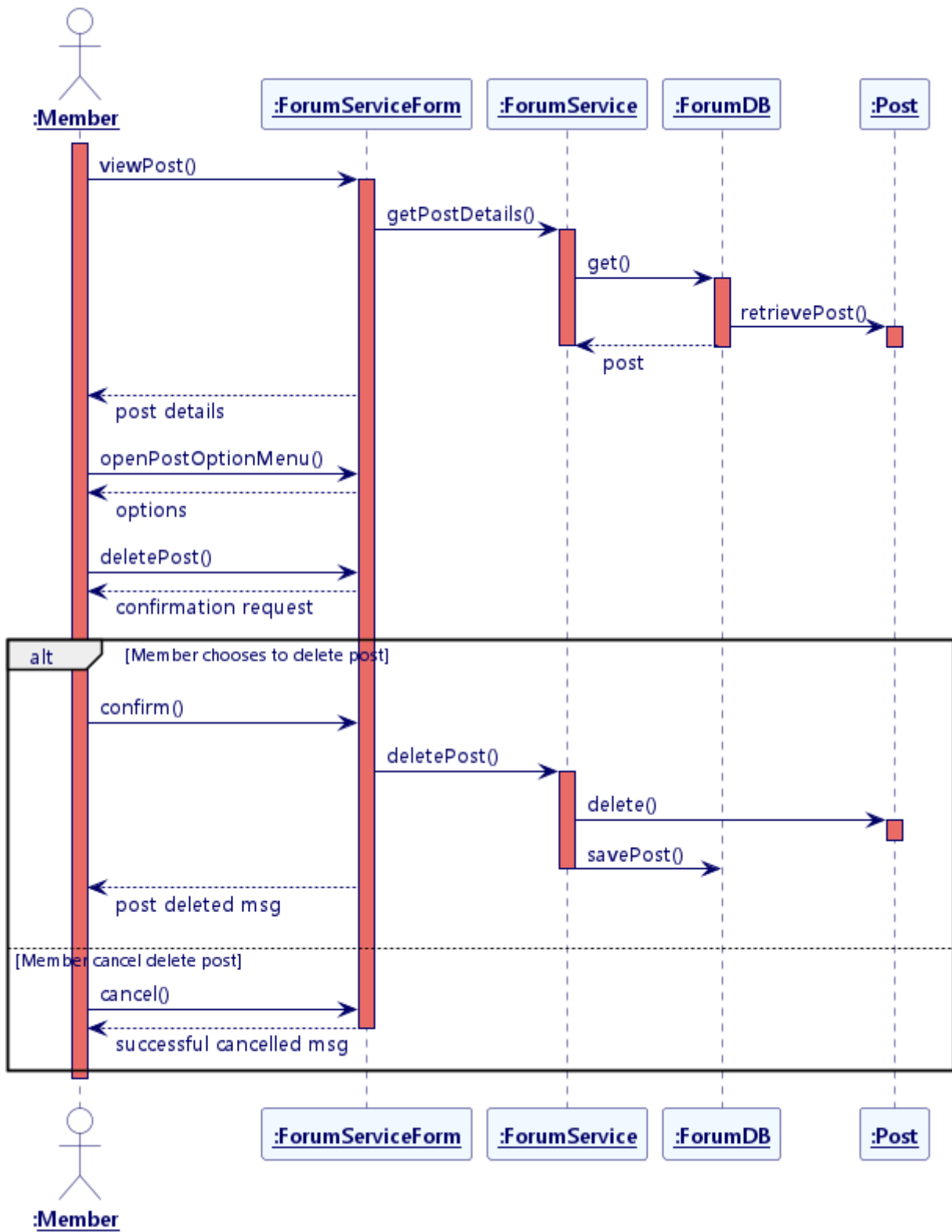


Figure 2-28: Delete a Post Sequence Diagram with Persistence

5. Update Book's Information

2.5.1 Add a Book

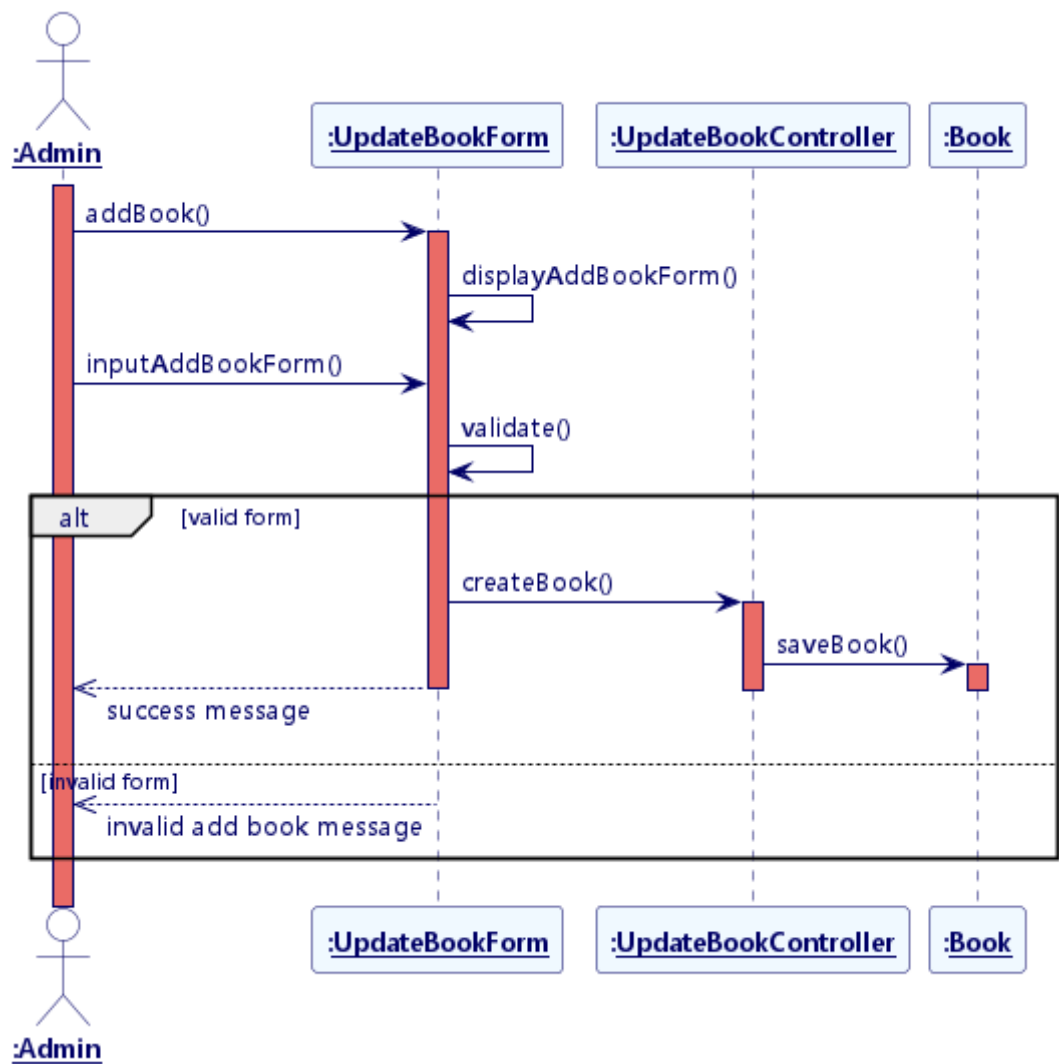


Figure 2-29: Add Book Sequence Diagram - Basic Flow.

2.5.2 Add a Book - VOPC

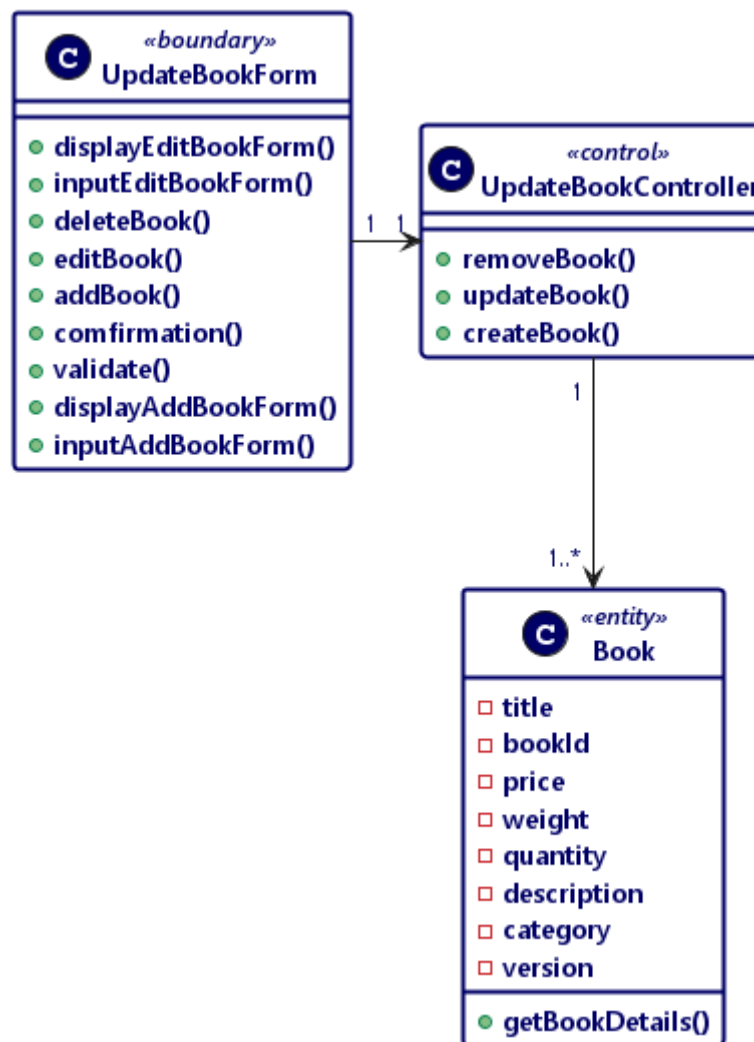


Figure 2-30

2.5.3 Add a Book – Distribution

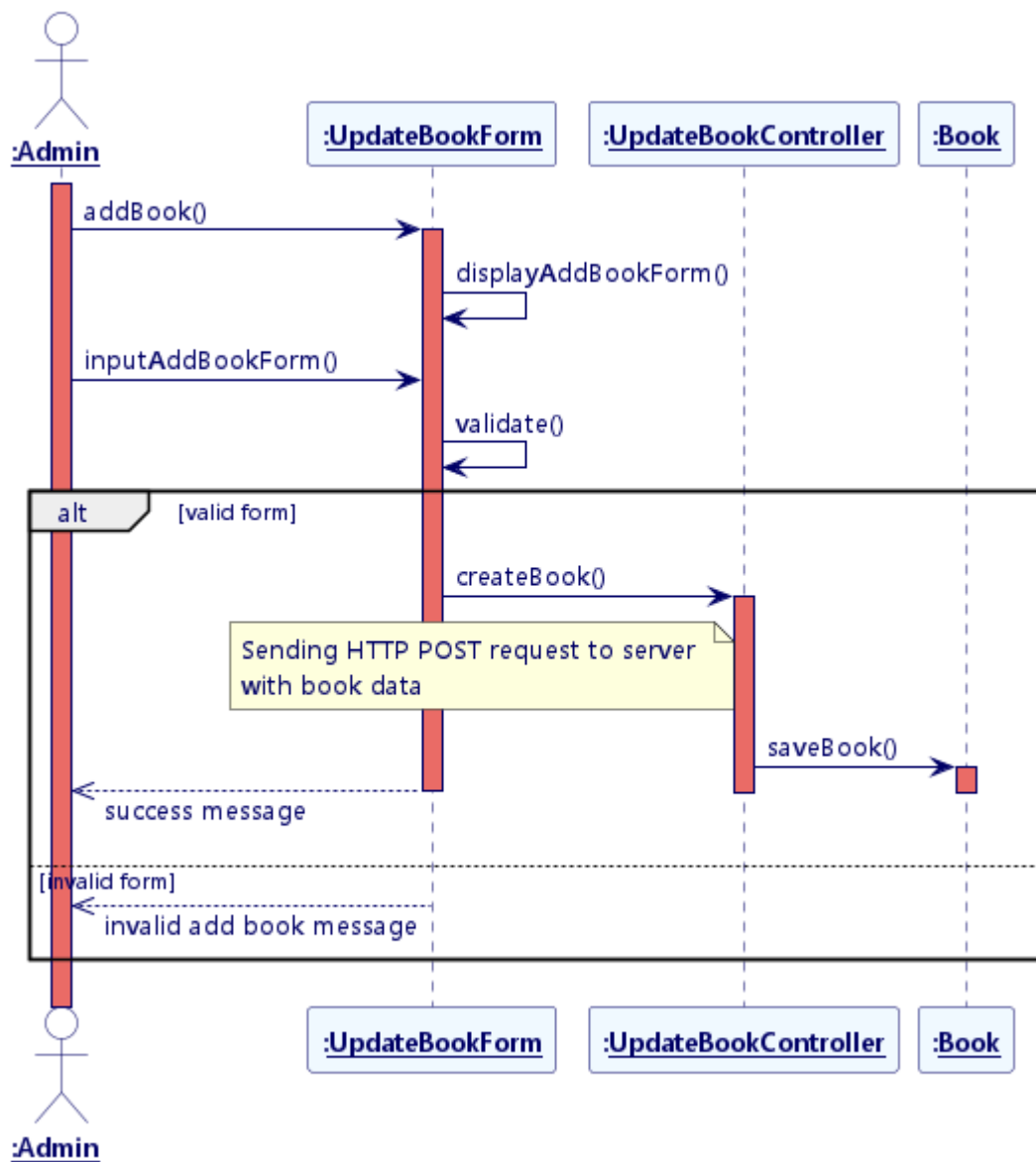


Figure 2-31: Add a Book Sequence Diagram with Distribution

2.5.4 Add a Book – Persistence

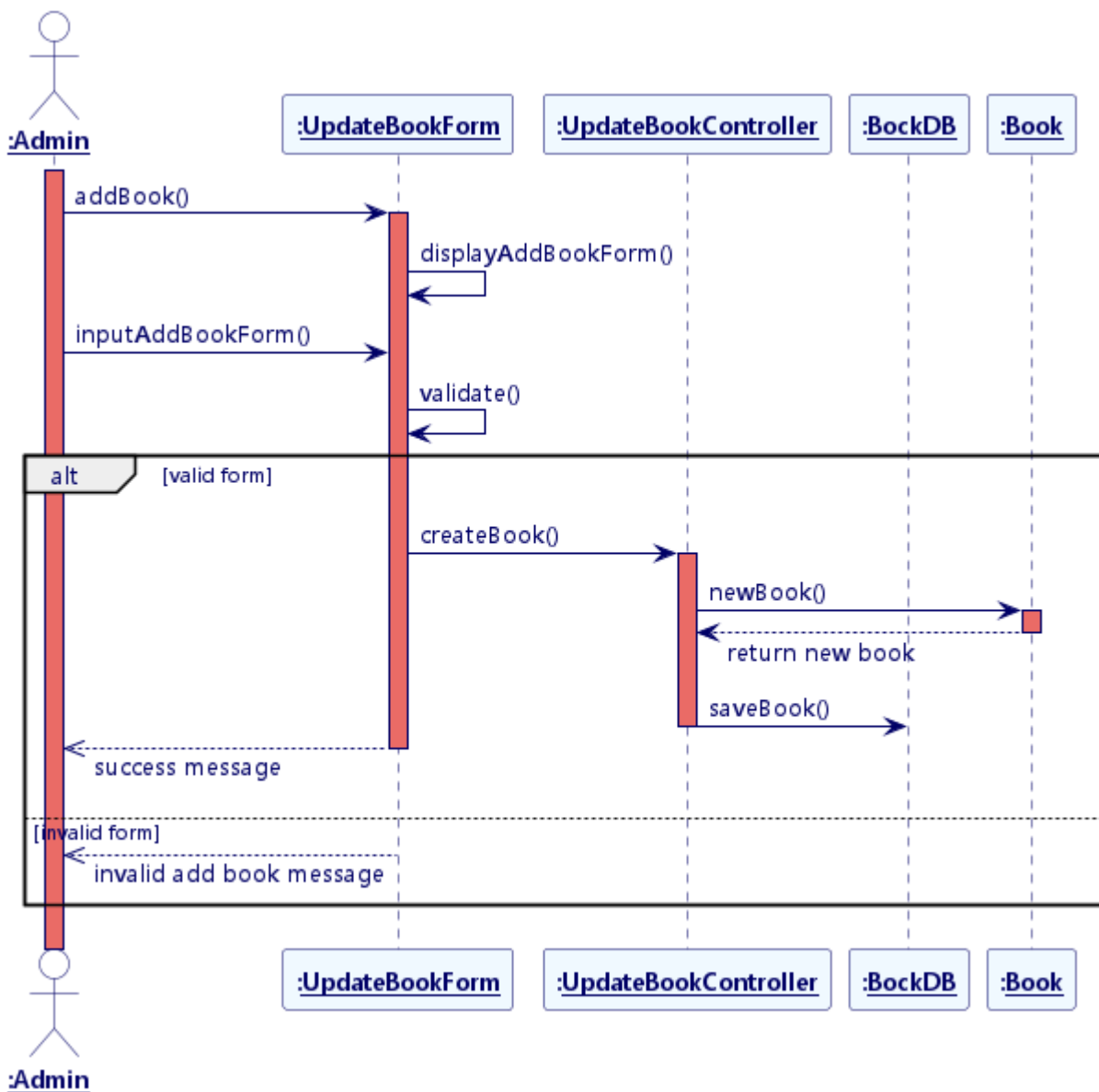


Figure 2-32: Add a Book Sequence Diagram with Persistence

2.5.5 Edit a Book

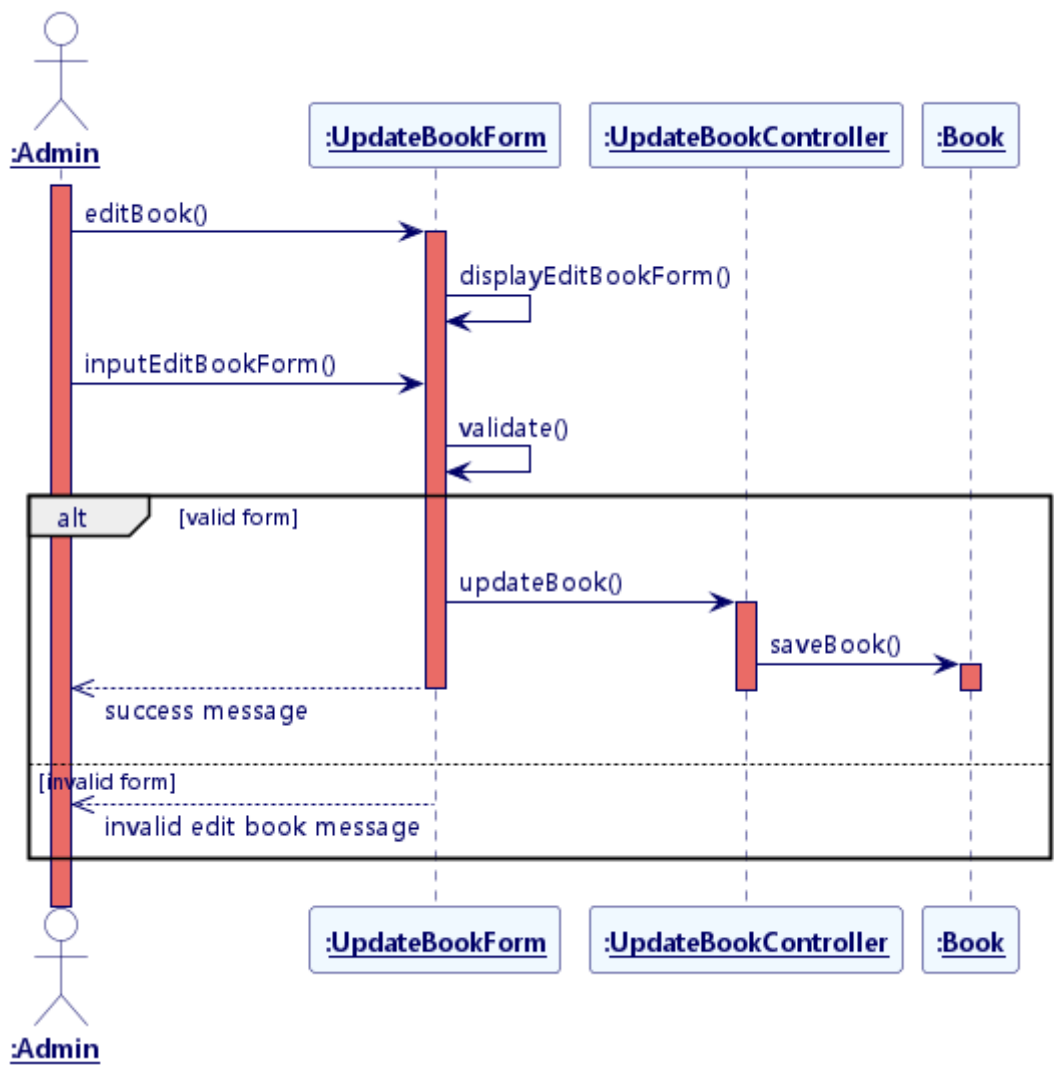


Figure 2-33: Edit Book Sequence Diagram - Basic Flow.

2.5.6 Edit a Book - VOPC

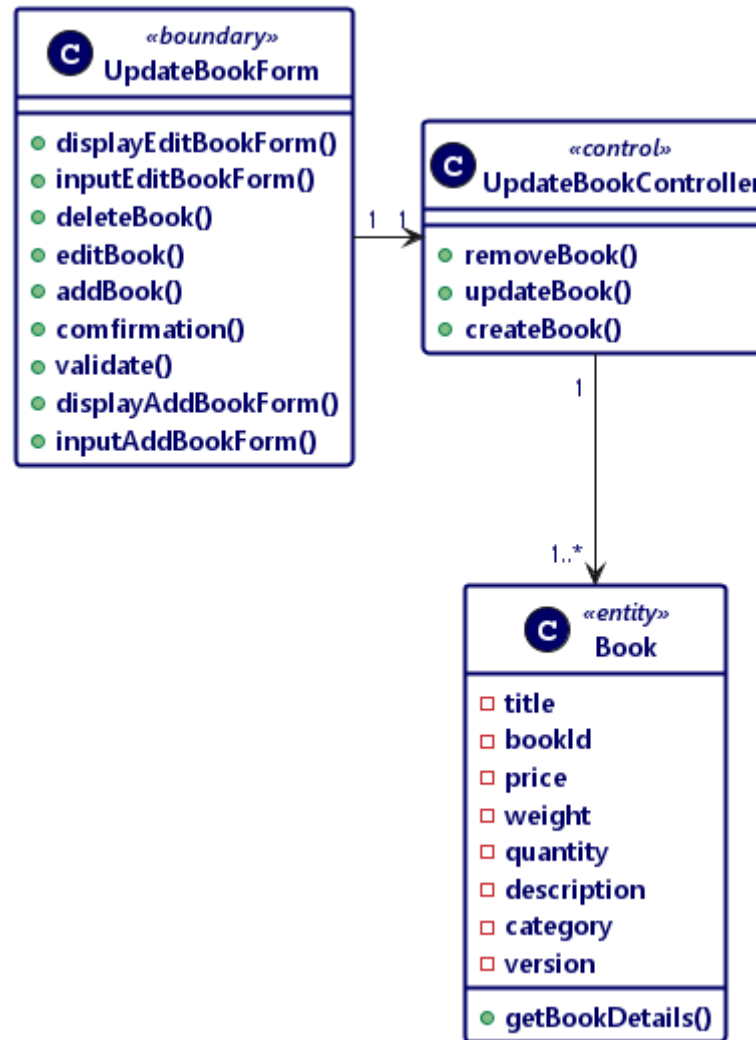


Figure 2-34: Edit Book Class Diagram

2.5.7 Edit a Book – Distribution

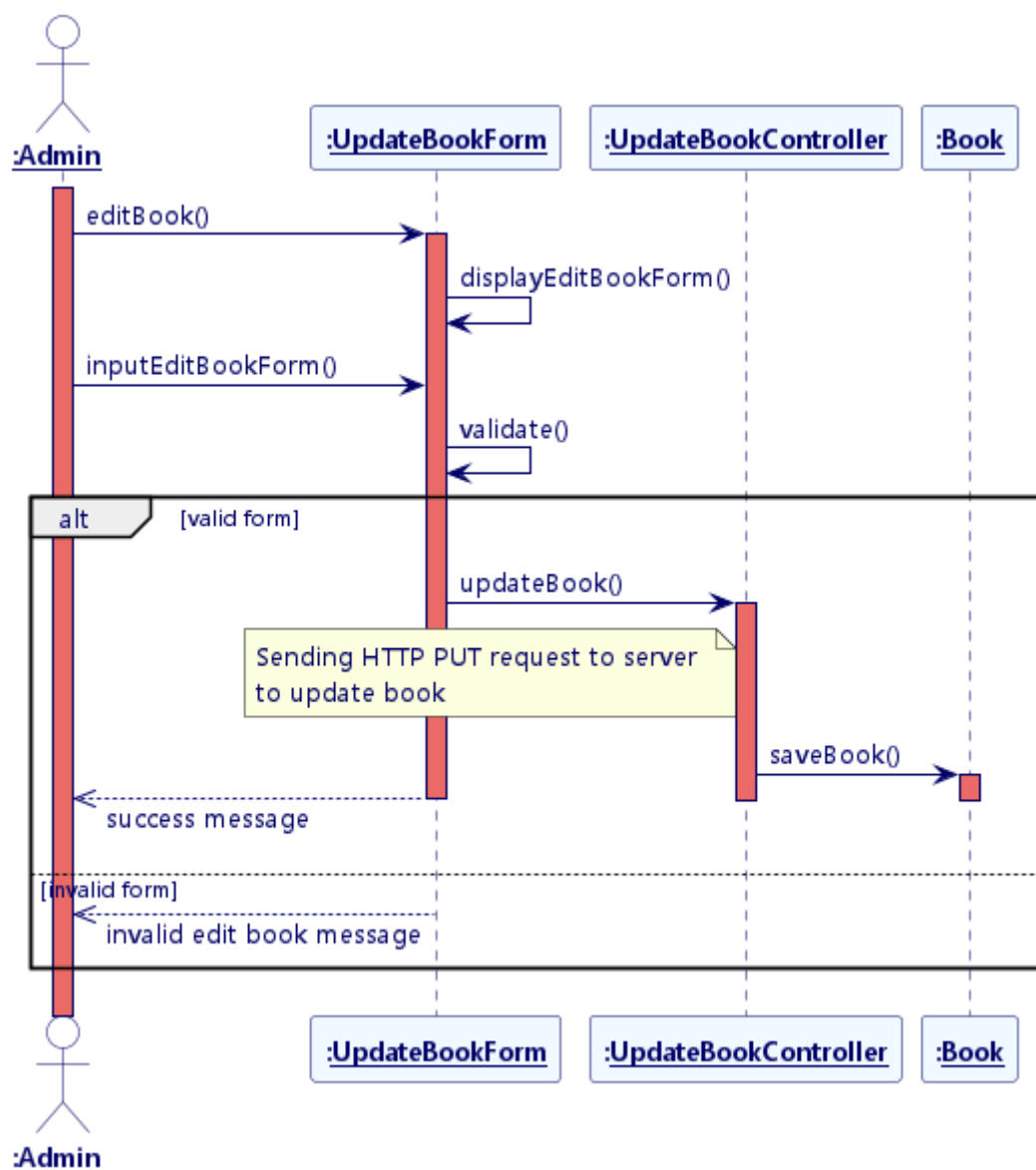


Figure 2-35: Edit a Book Sequence Diagram with Distribution

2.5.8 Edit a Book – Persistence

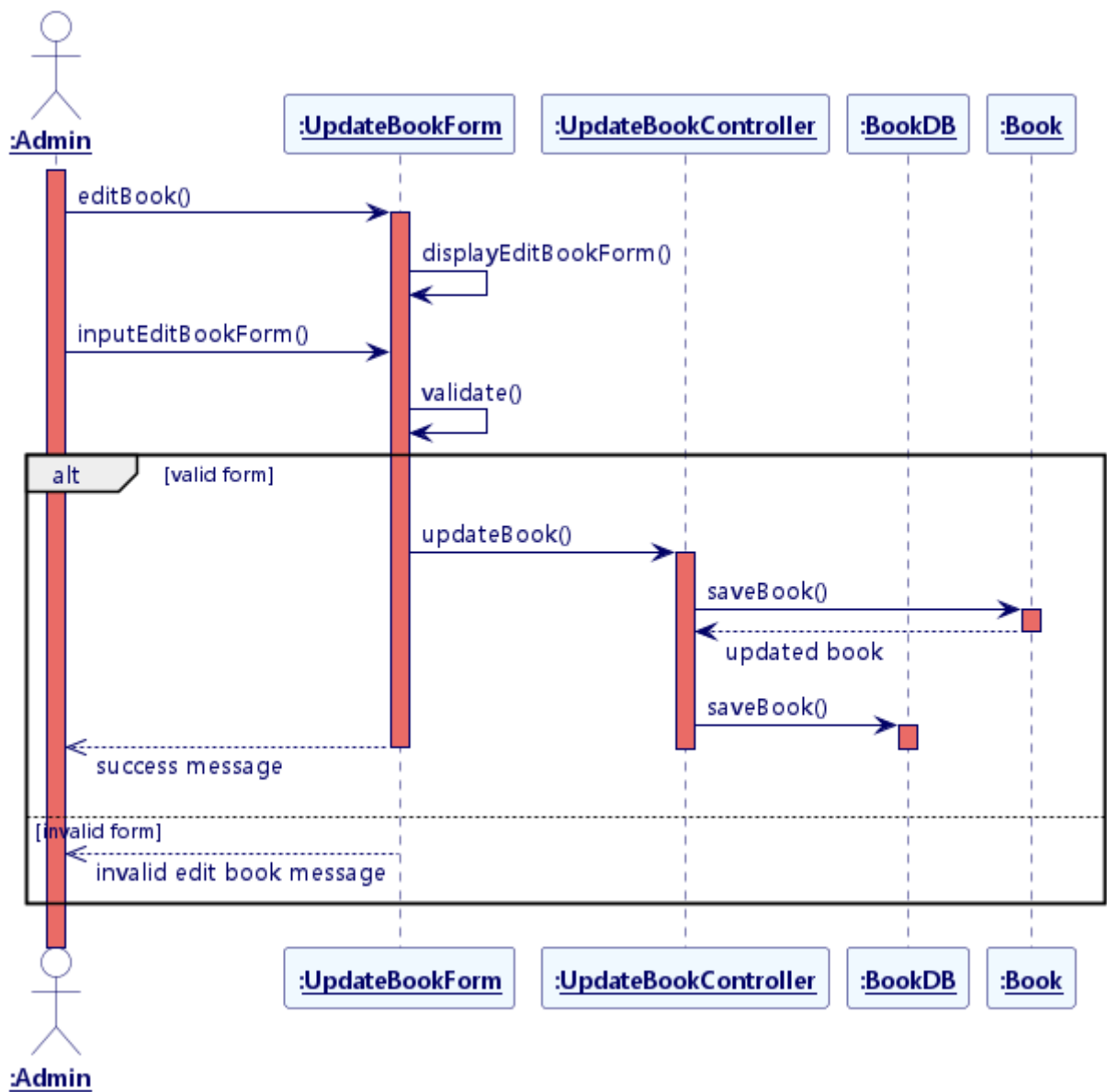


Figure 2-36: Edit a Book Sequence Diagram with Persistence

2.5.9 Delete a Book

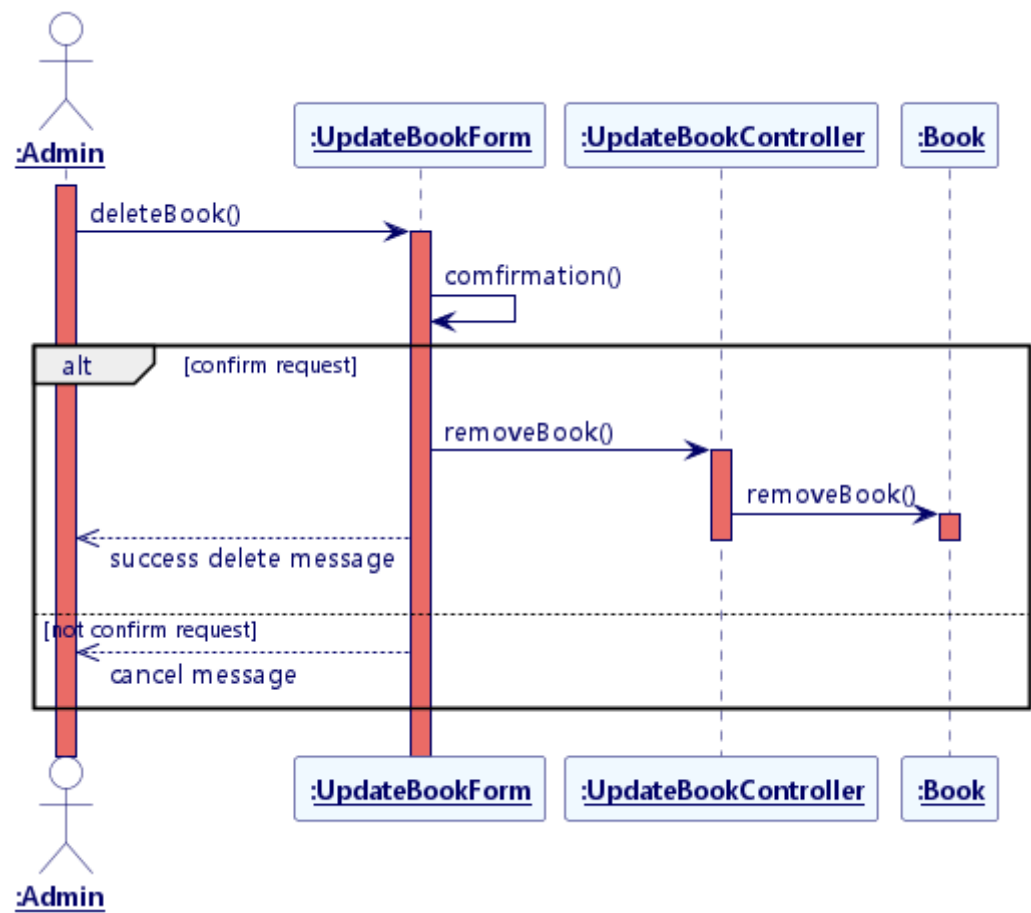


Figure 2-37: Delete Book Sequence Diagram - Basic Flow.

2.5.10 Delete a Book - VOPC

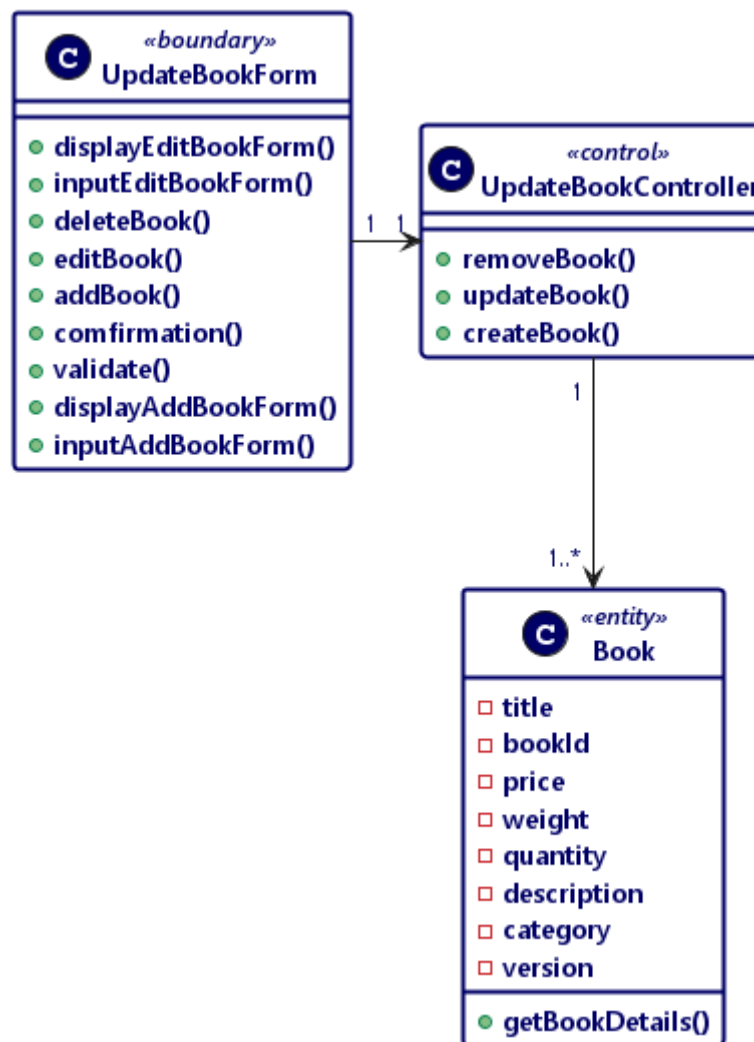


Figure 2-38: Delete Book Class Diagram

2.5.11 Delete a Post – Distribution

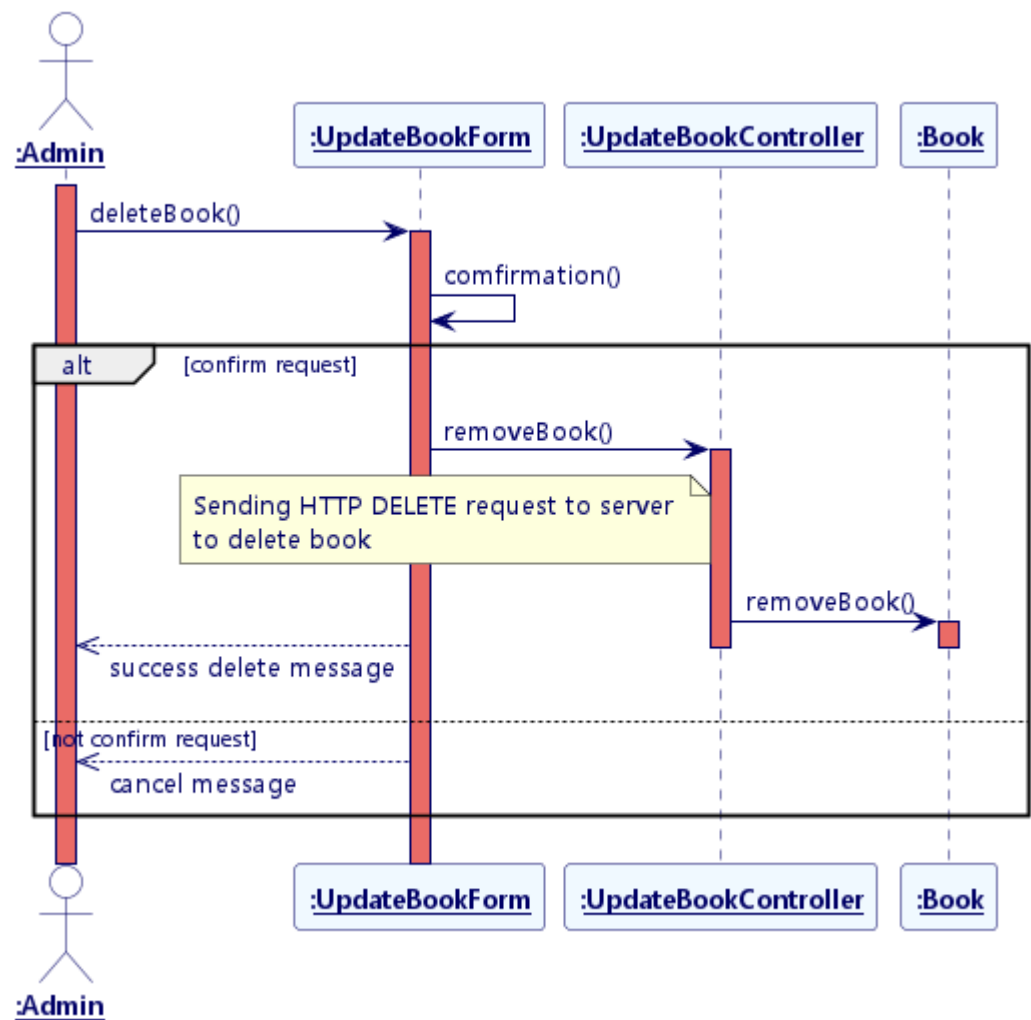


Figure 2-39: Delete a Post with Distribution

2.5.12 Delete a Post – Persistence

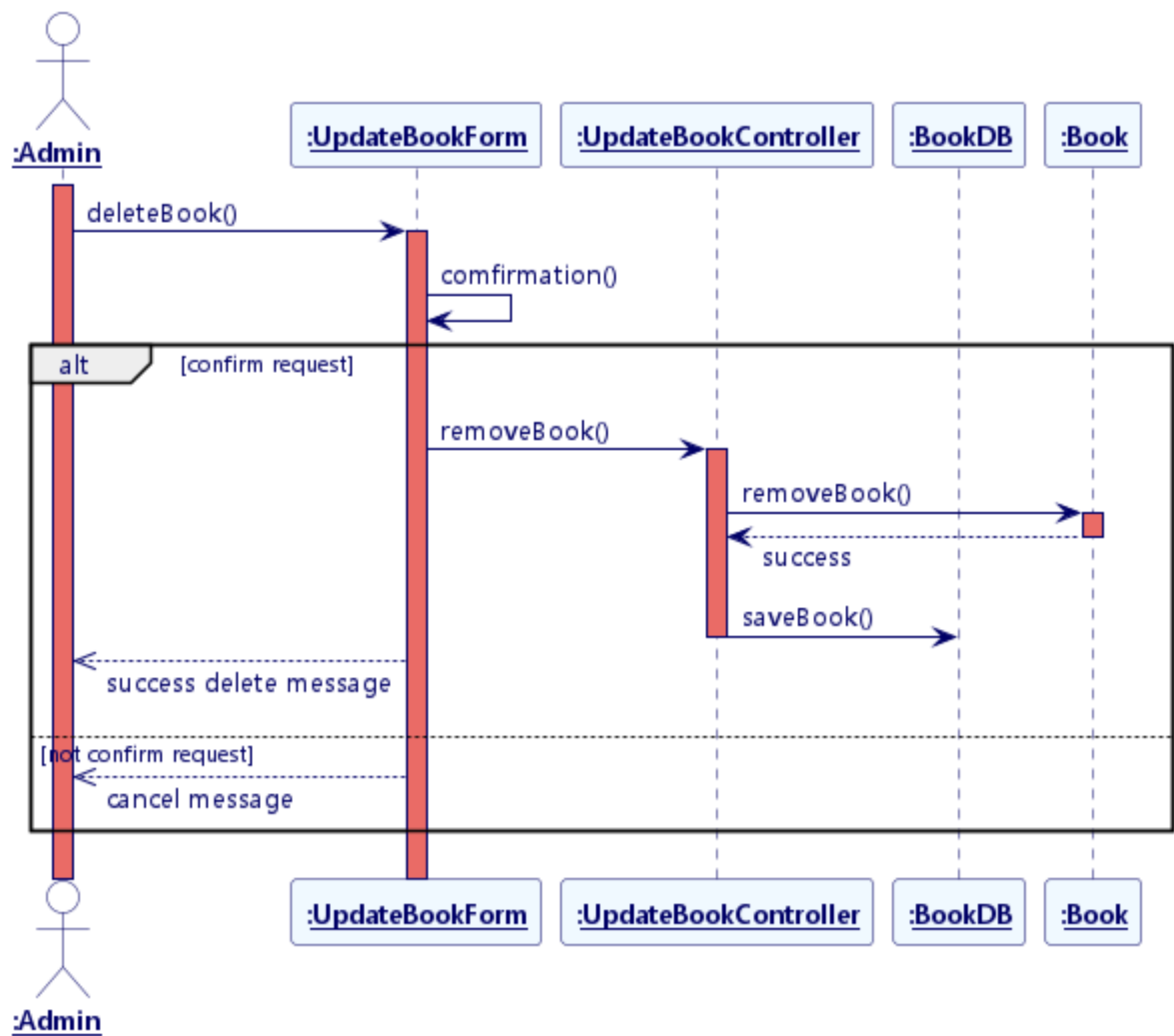


Figure 2-40: Delete a Post Sequence Diagram with Persistence

6. Chat Box

2.6.1 Basic Flow

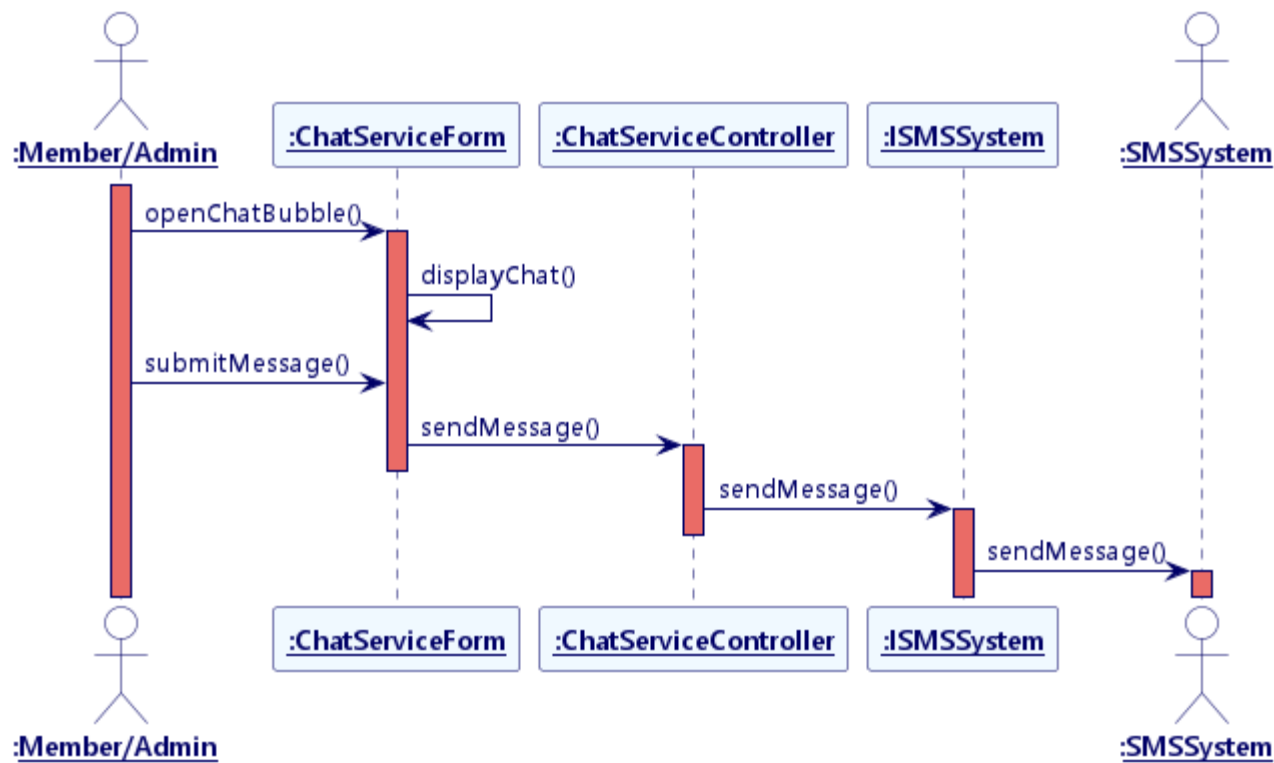


Figure 2-41: Chat Box Sequence Diagram - Basic Flow.

2.6.2 Basic Flow - VOPC

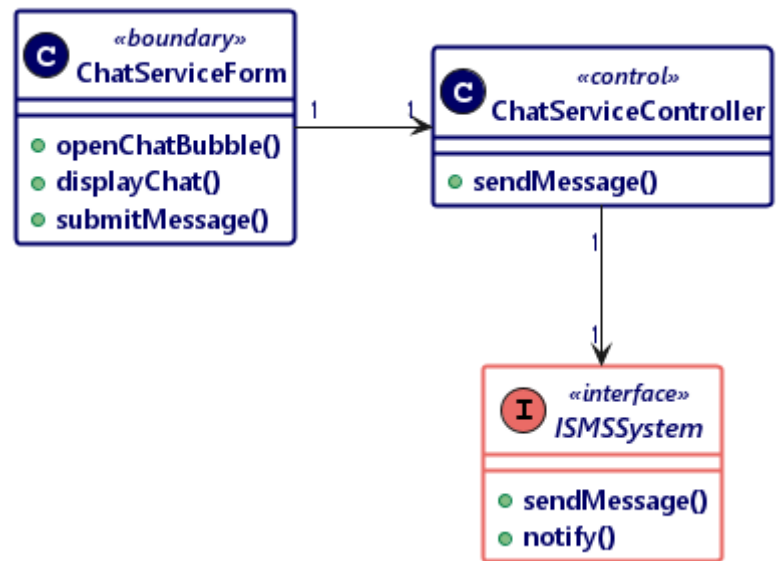


Figure 2-42: Chat Class Diagram

2.6.3 Basic Flow – Distribution

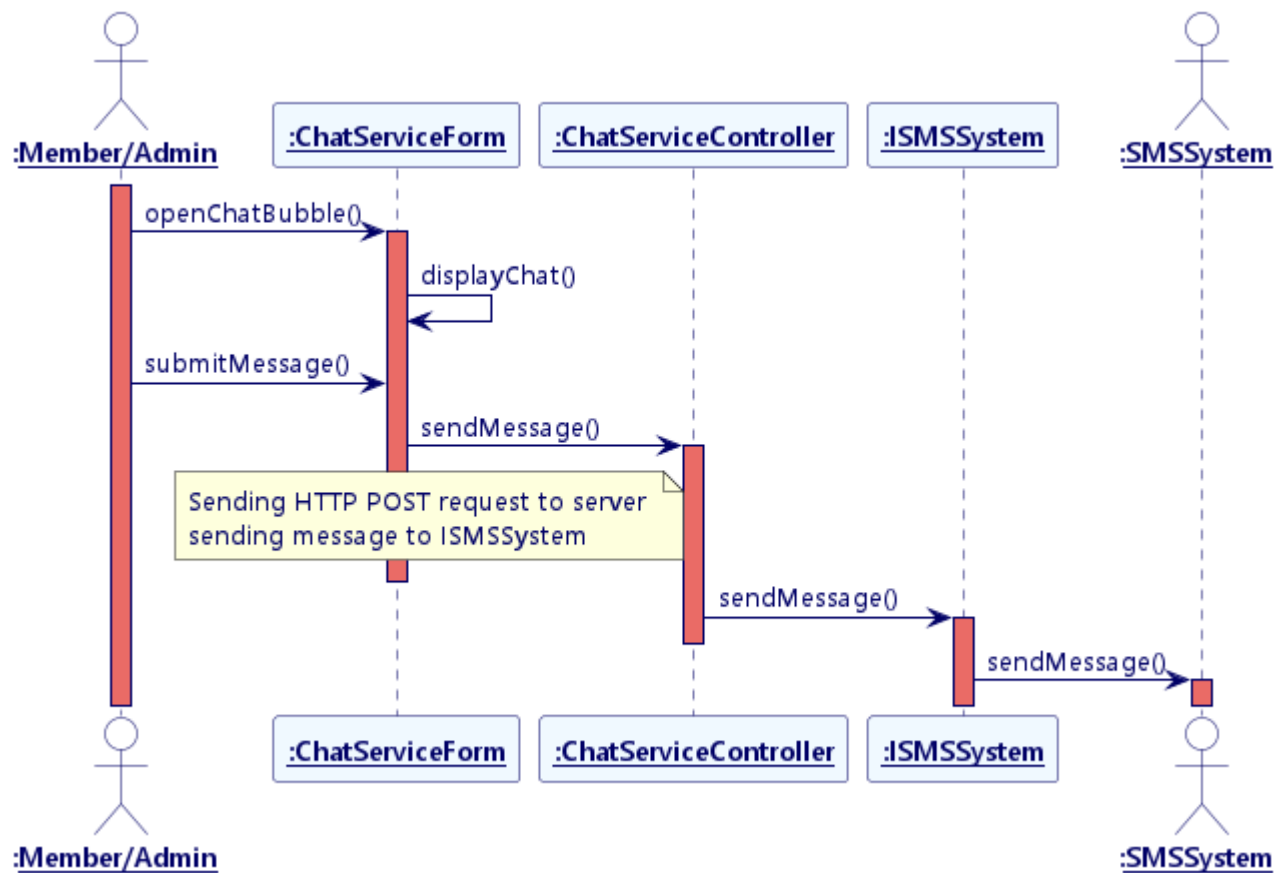


Figure 2-43: Chat Box Sequence Diagram with Distribution

7. Update Cart

2.7.1 Basic Flow

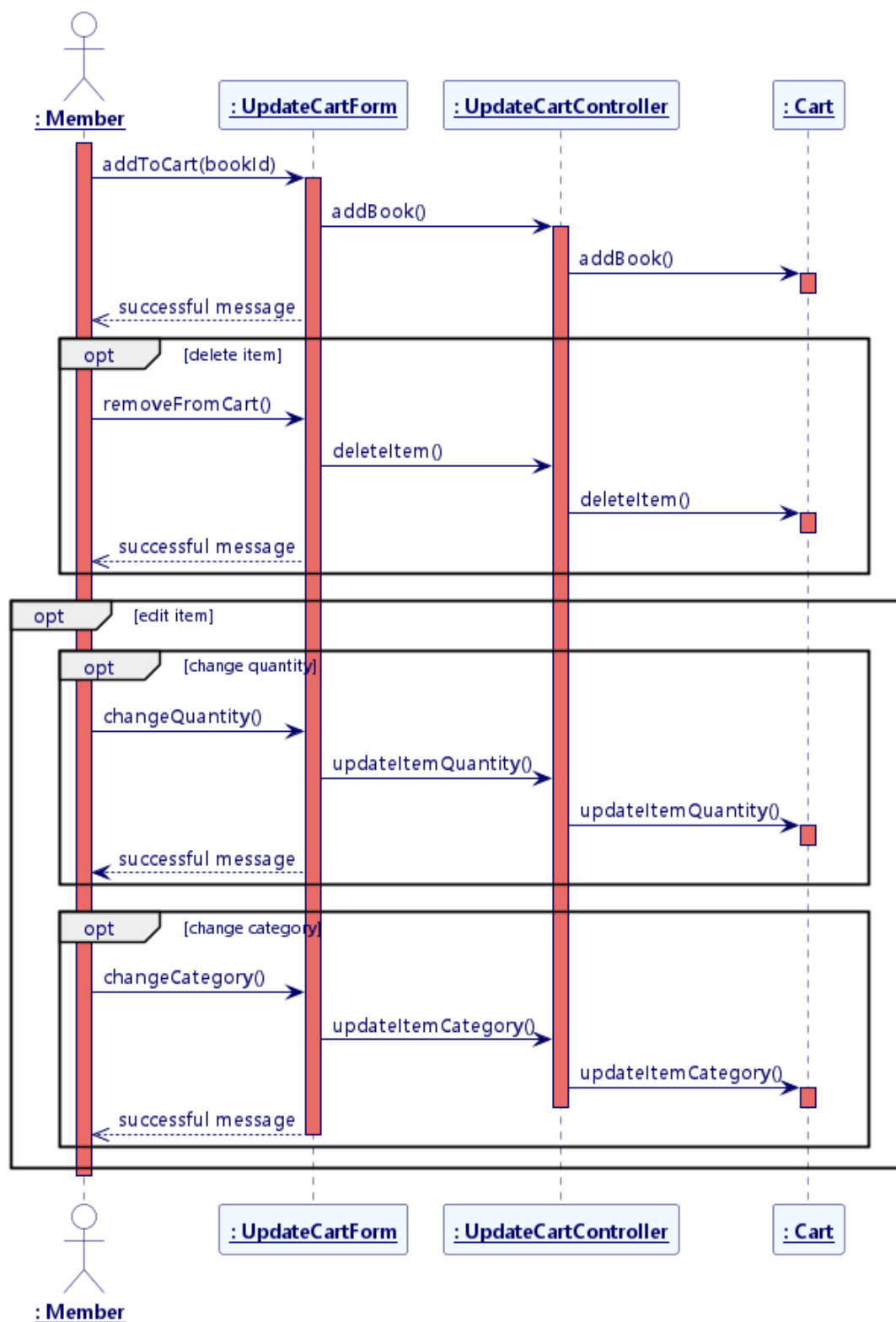


Figure 2-44: Update Cart Sequence Diagram - Basic Flow.

2.7.2 Basic Flow - VOPC

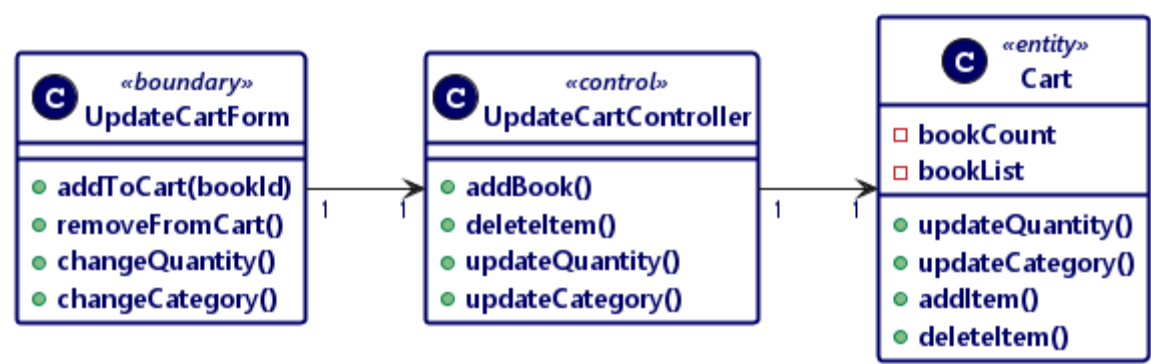


Figure 2-45: Update Cart Class Diagram

2.7.3 Basic Flow – Distribution

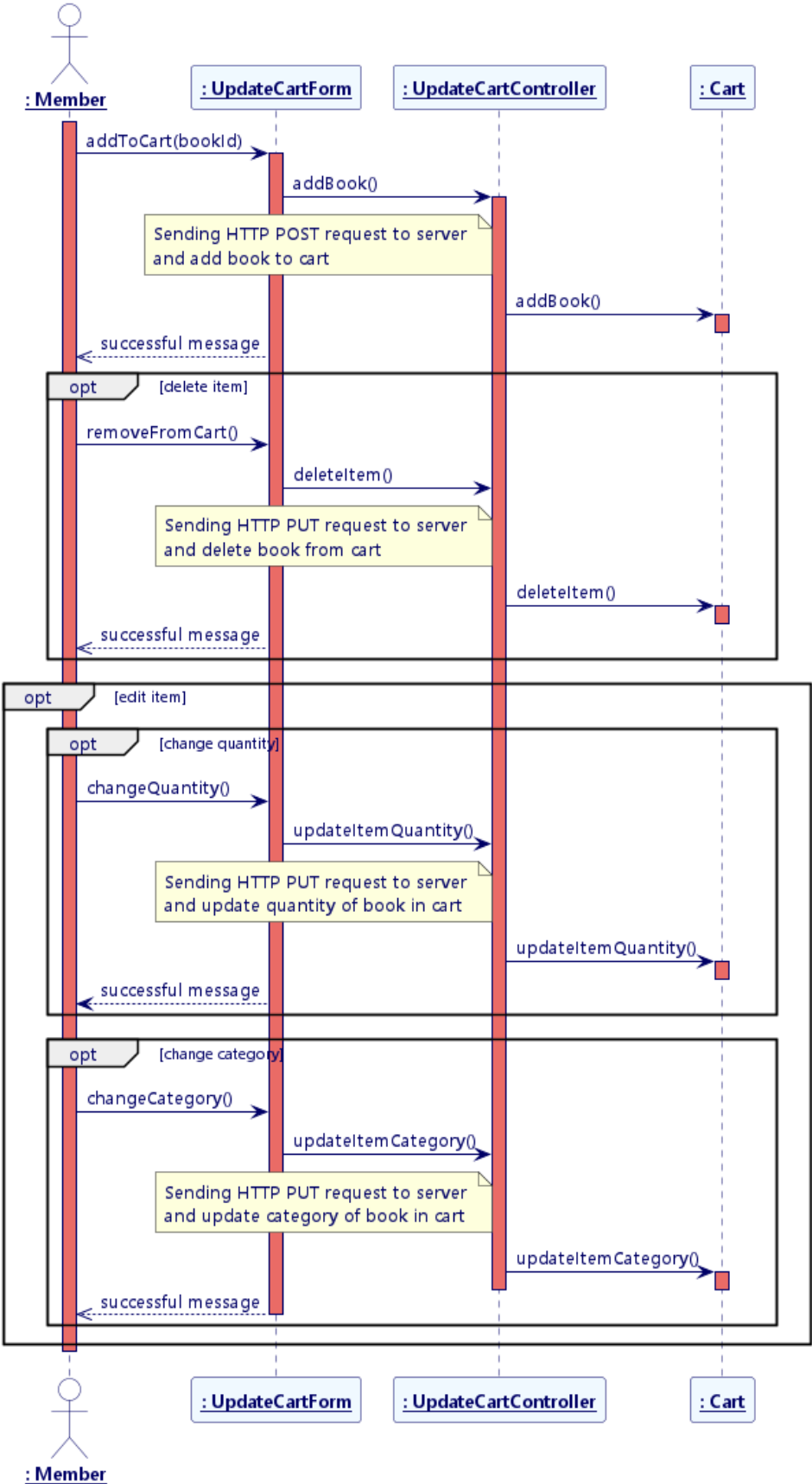


Figure 2-46: Update Cart Sequence Diagram with Distribution

8. Register for a Rental Plan

2.8.1 Basic Flow

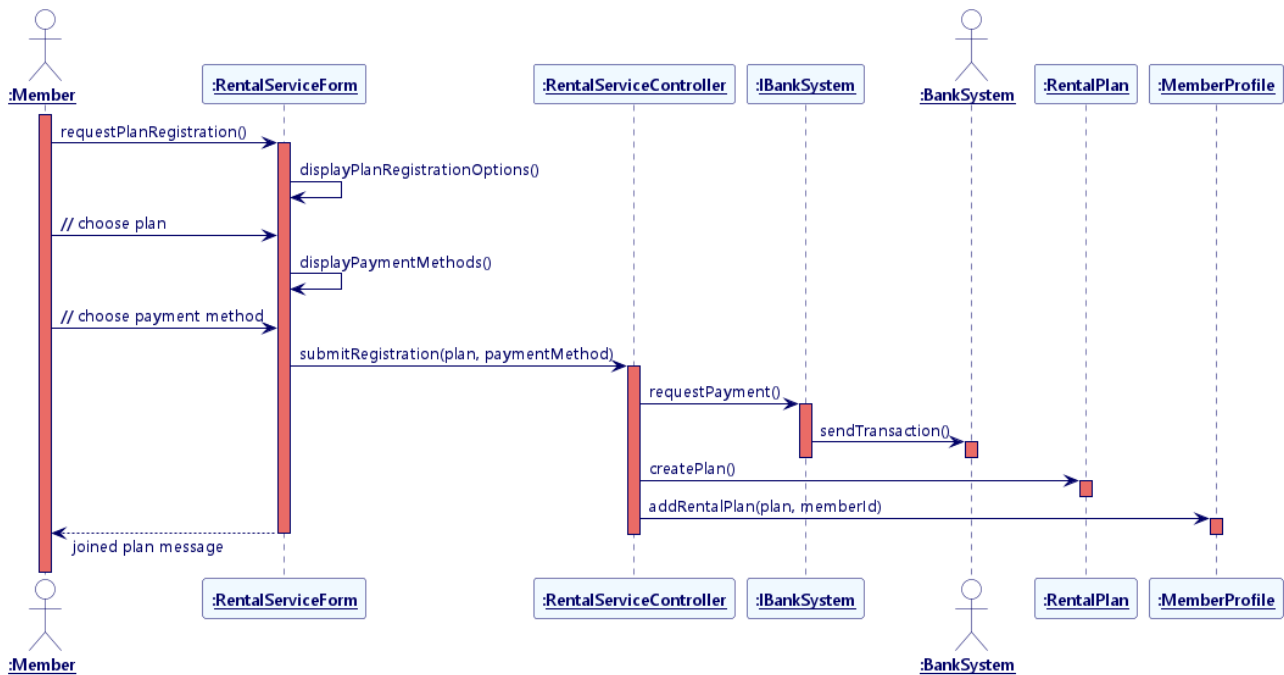


Figure 2-47: Register for a Rental Plan Sequence Diagram - Basic Flow.

2.8.2 Basic Flow - VOPC

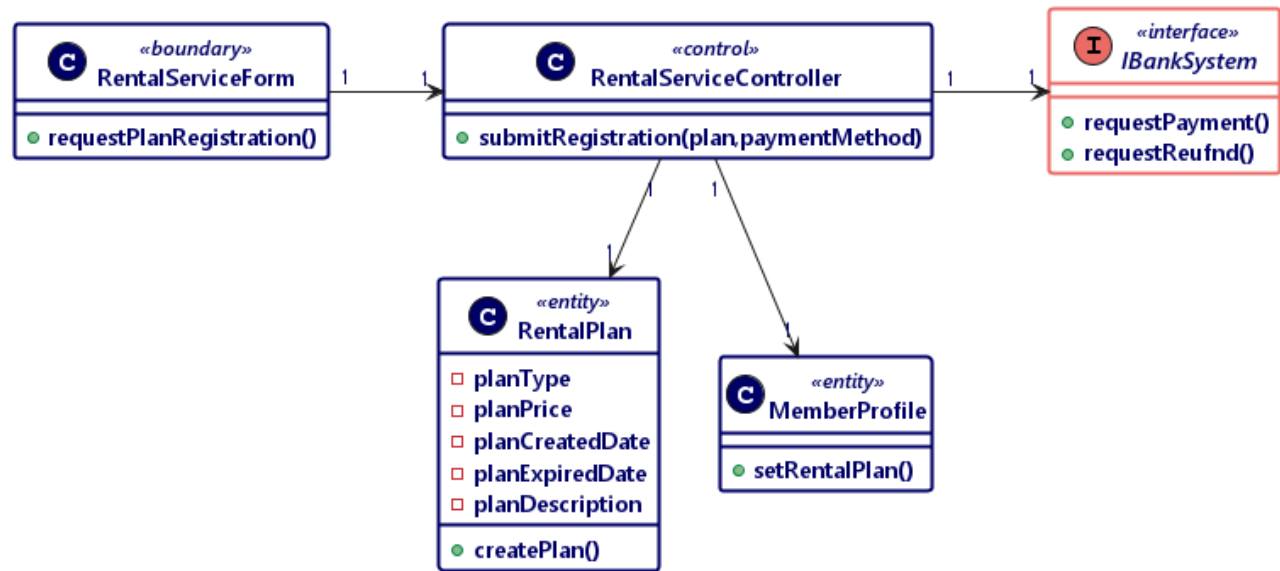


Figure 2-48: Register for a Rental Plan Class Diagram

2.8.3 Basic Flow – Distribution

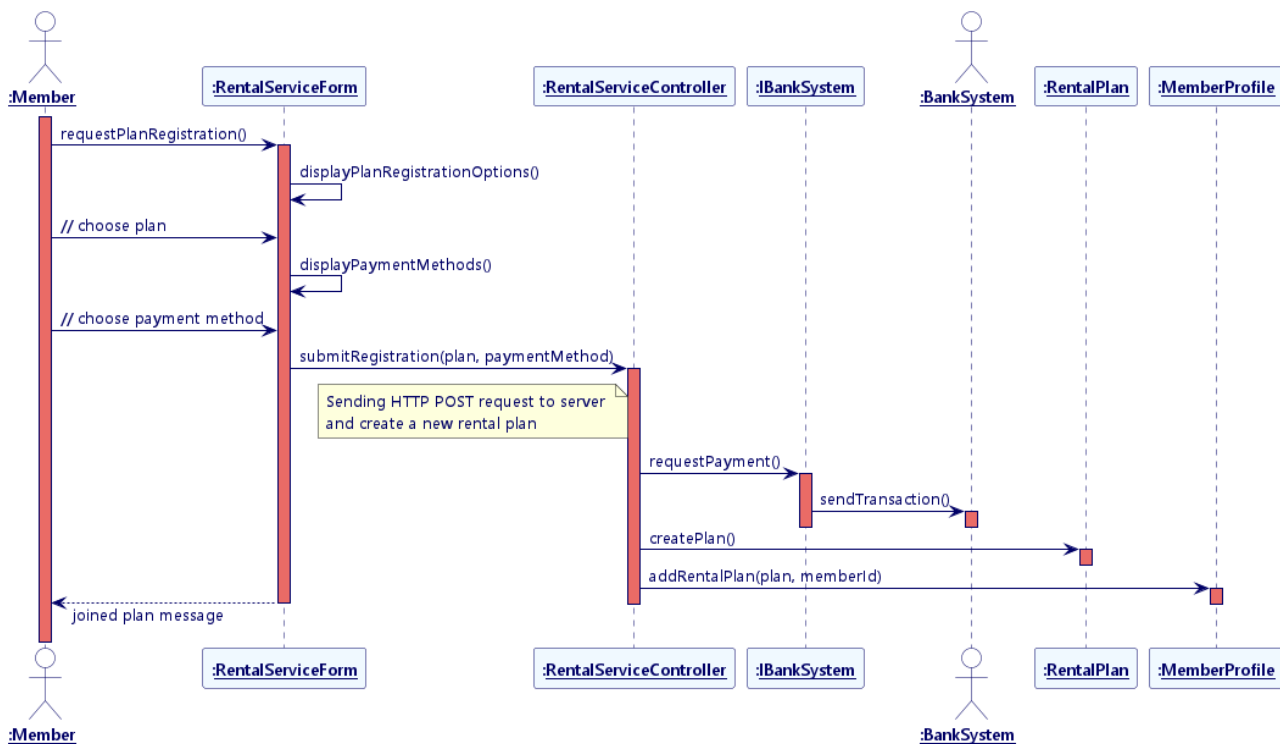


Figure 2-49: Register for a Rental Plan Sequence Diagram with Distribution

2.8.4 Basic Flow – Persistence

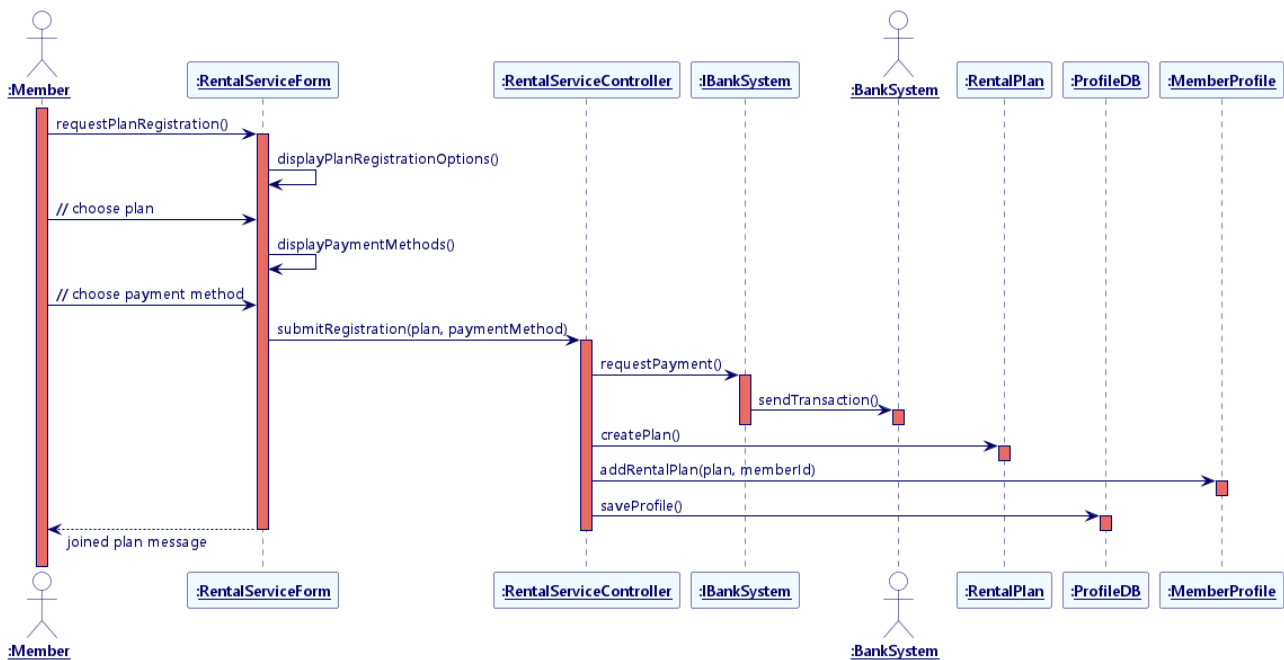


Figure 2-50: Register for a Rental Plan Sequence Diagram with Persistence

9. Read Book

2.9.1 Basic Flow

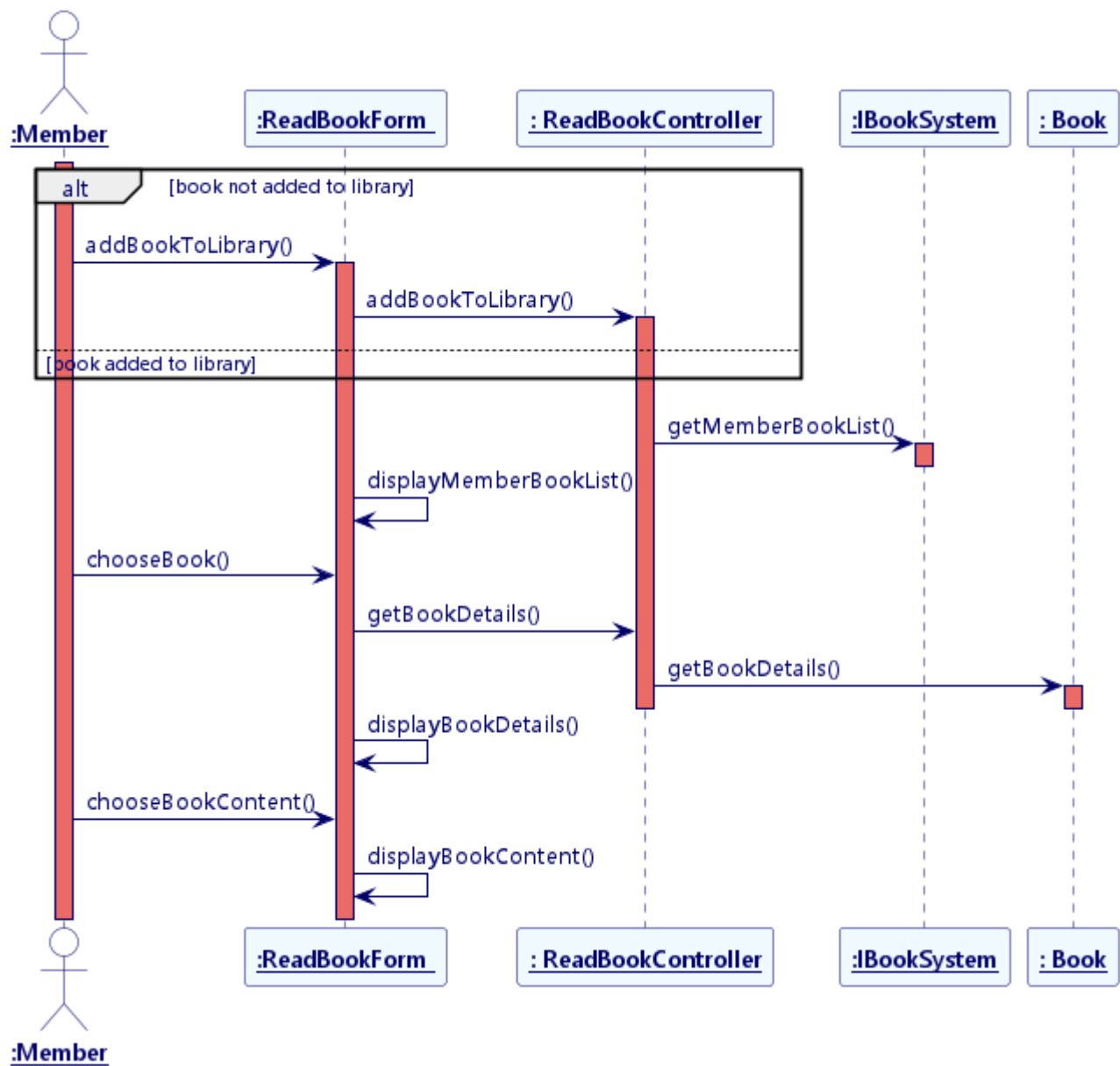


Figure 2-51: Read Book Sequence Diagram - Basic Flow.

2.9.2 Basic Flow - VOPC

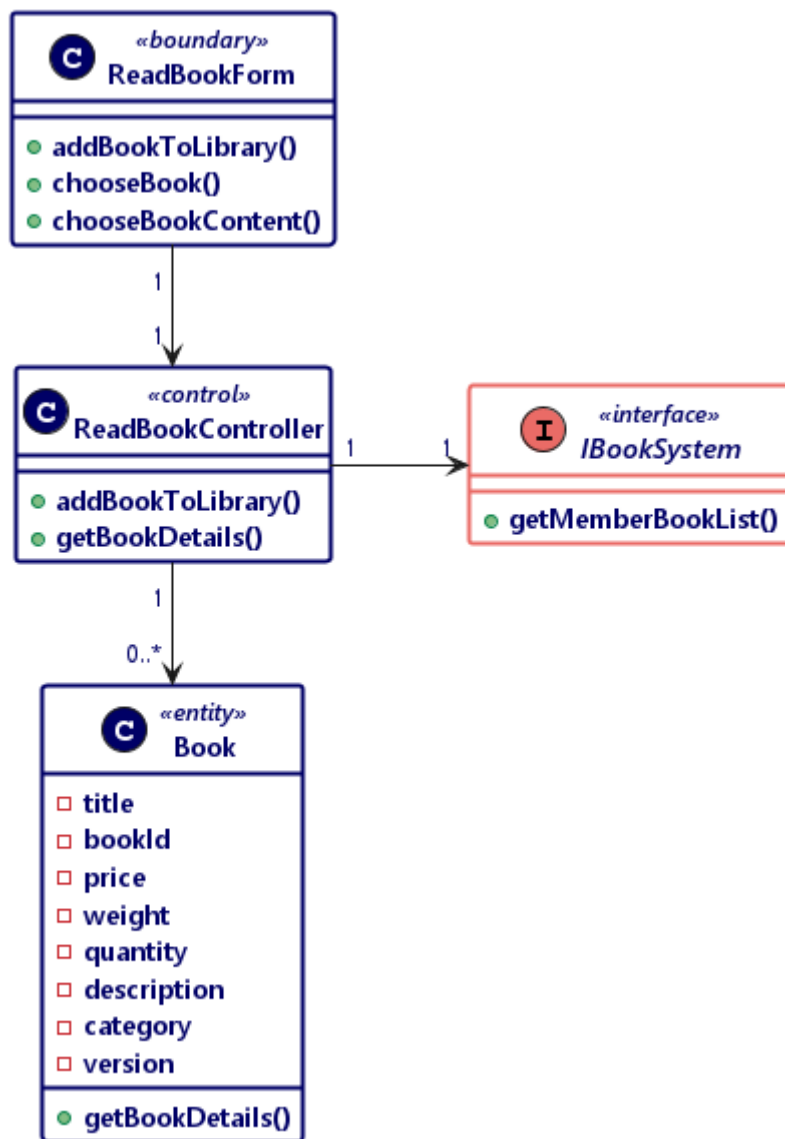


Figure 2-52: Read Book Class Diagram

2.9.3 Basic Flow – Distribution

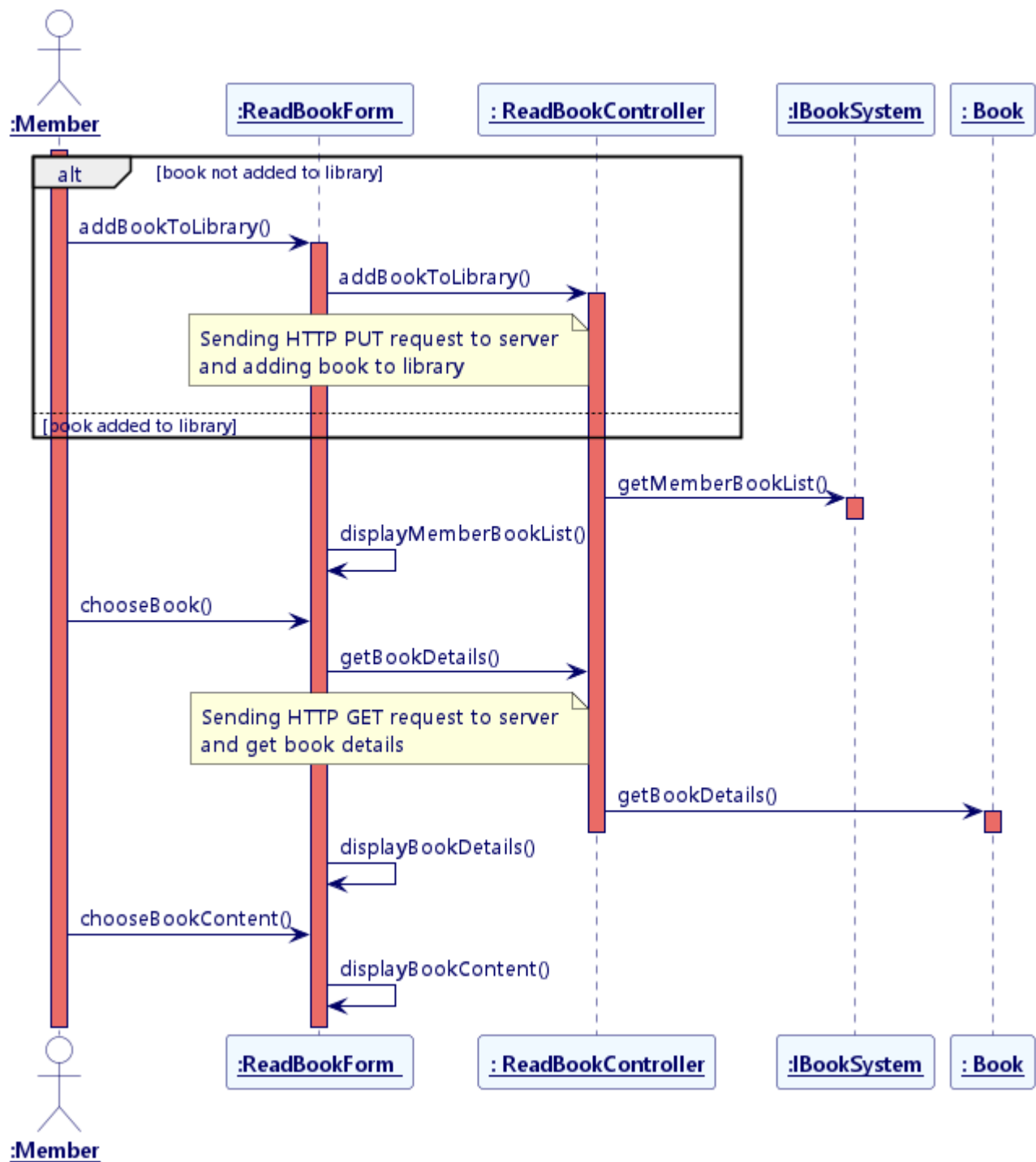


Figure 2-53: Read Book Sequence Diagram with Distribution

10. Buy Book

2.10.1 Basic Flow

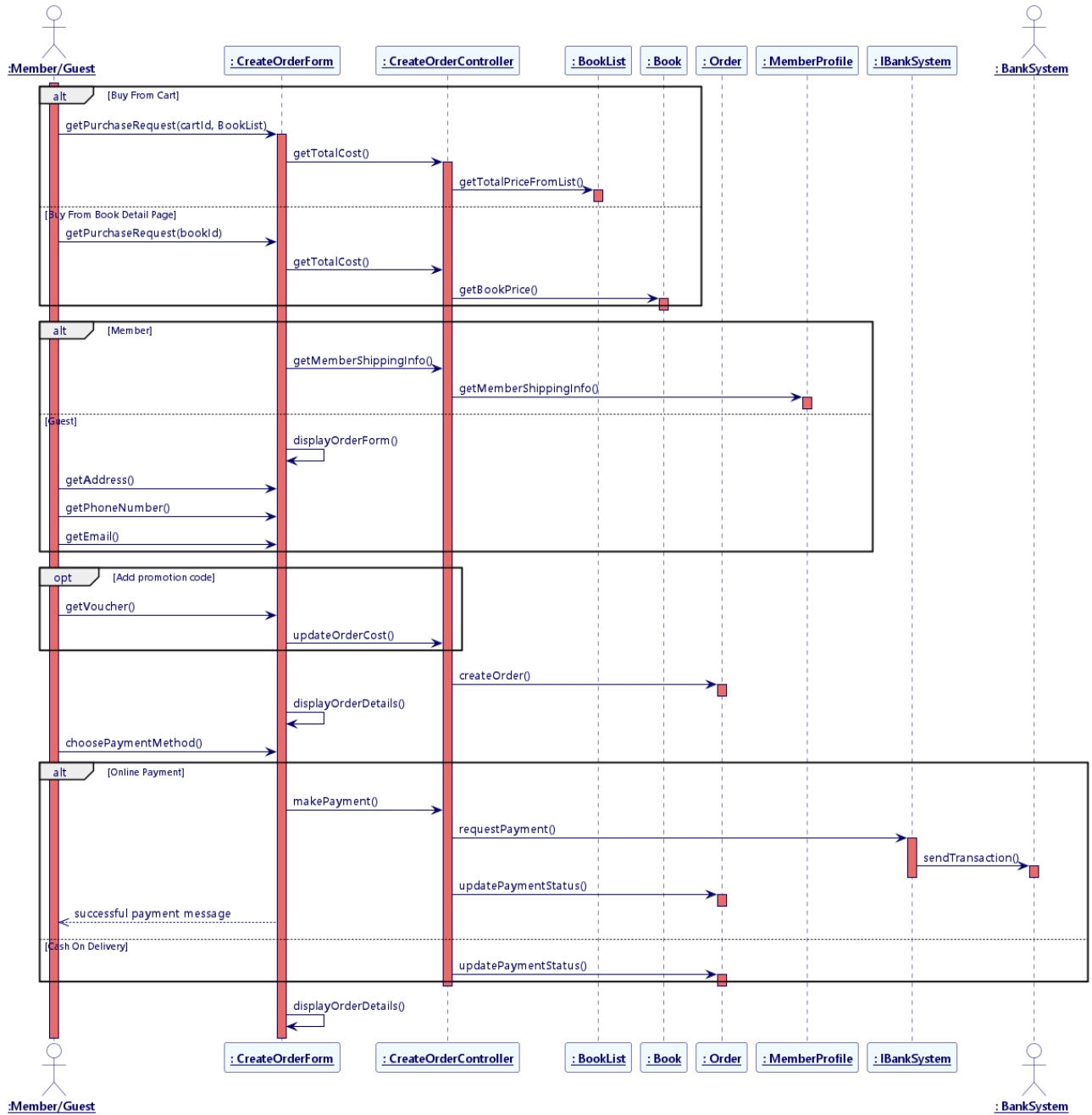


Figure 2-54: Buy Book Sequence Diagram - Basic Flow.

2.10.2 Basic Flow - VOPC

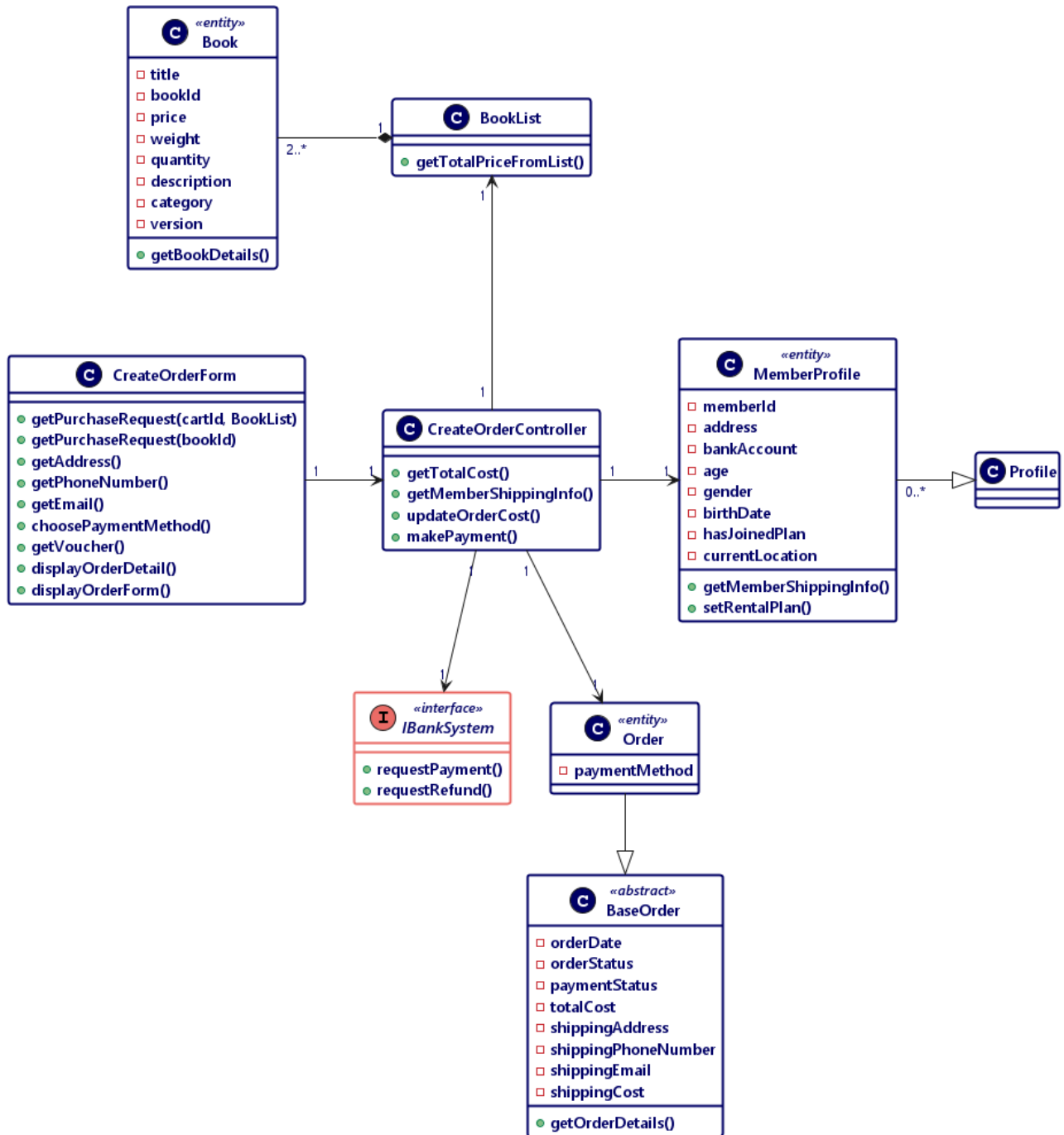


Figure 2-55: Buy Book Class Diagram

2.10.3 Basic Flow – Distribution

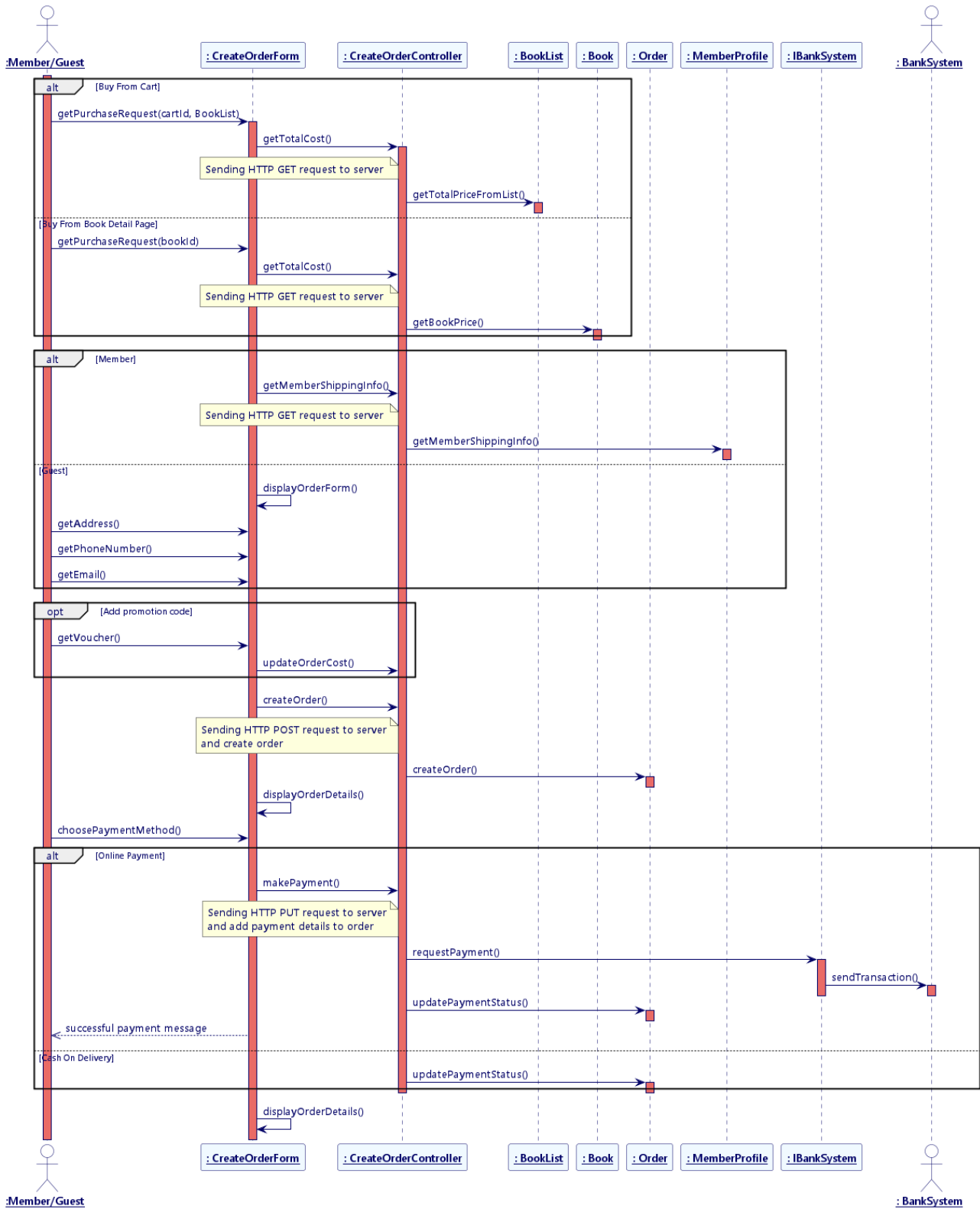


Figure 2-56: Buy Book Sequence Diagram with Distribution

2.10.4 Basic Flow – Persistence

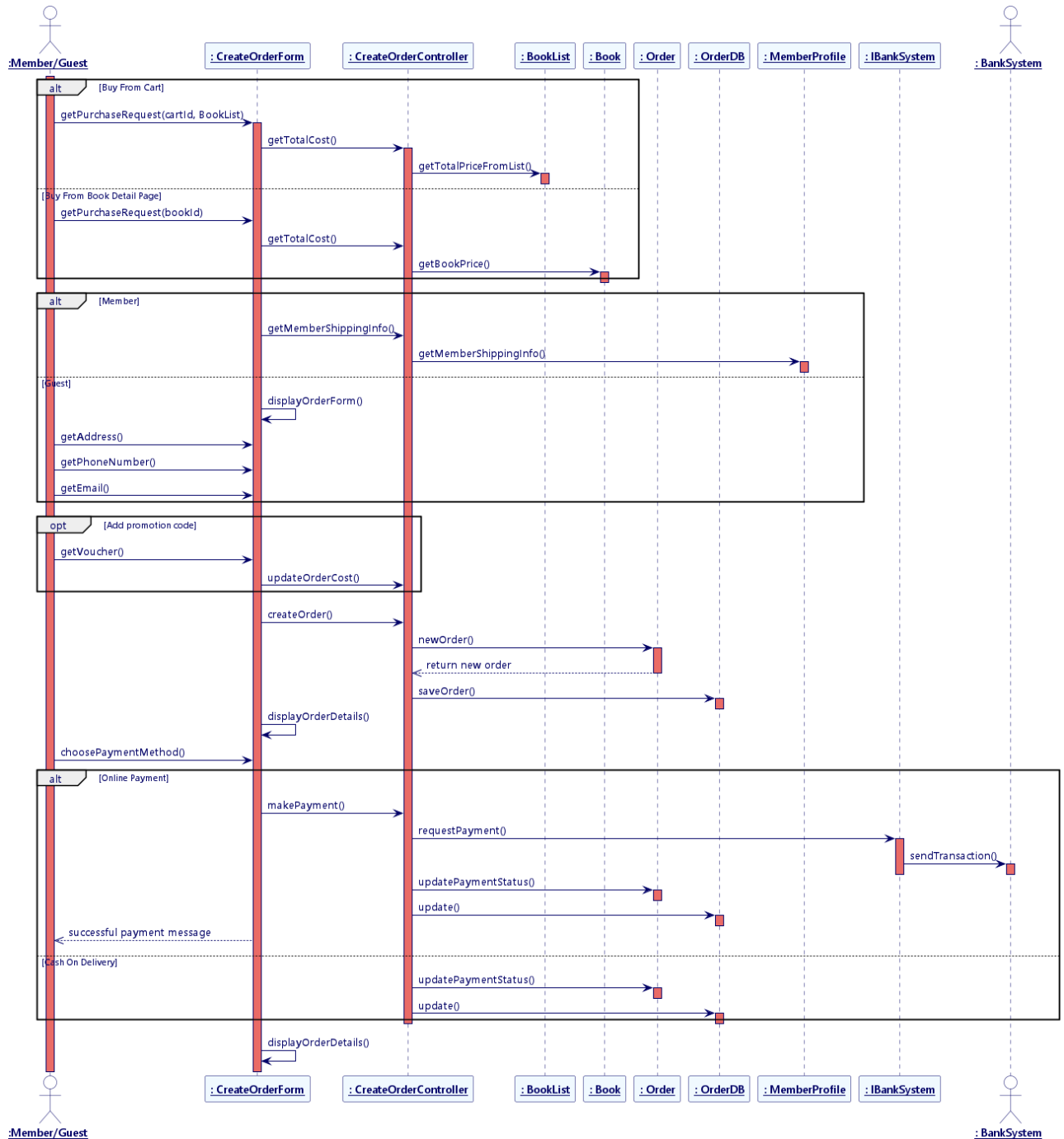


Figure 2-57: Buy Book Sequence Diagram with Persistence

11. Search Book

2.11.1 Basic Flow

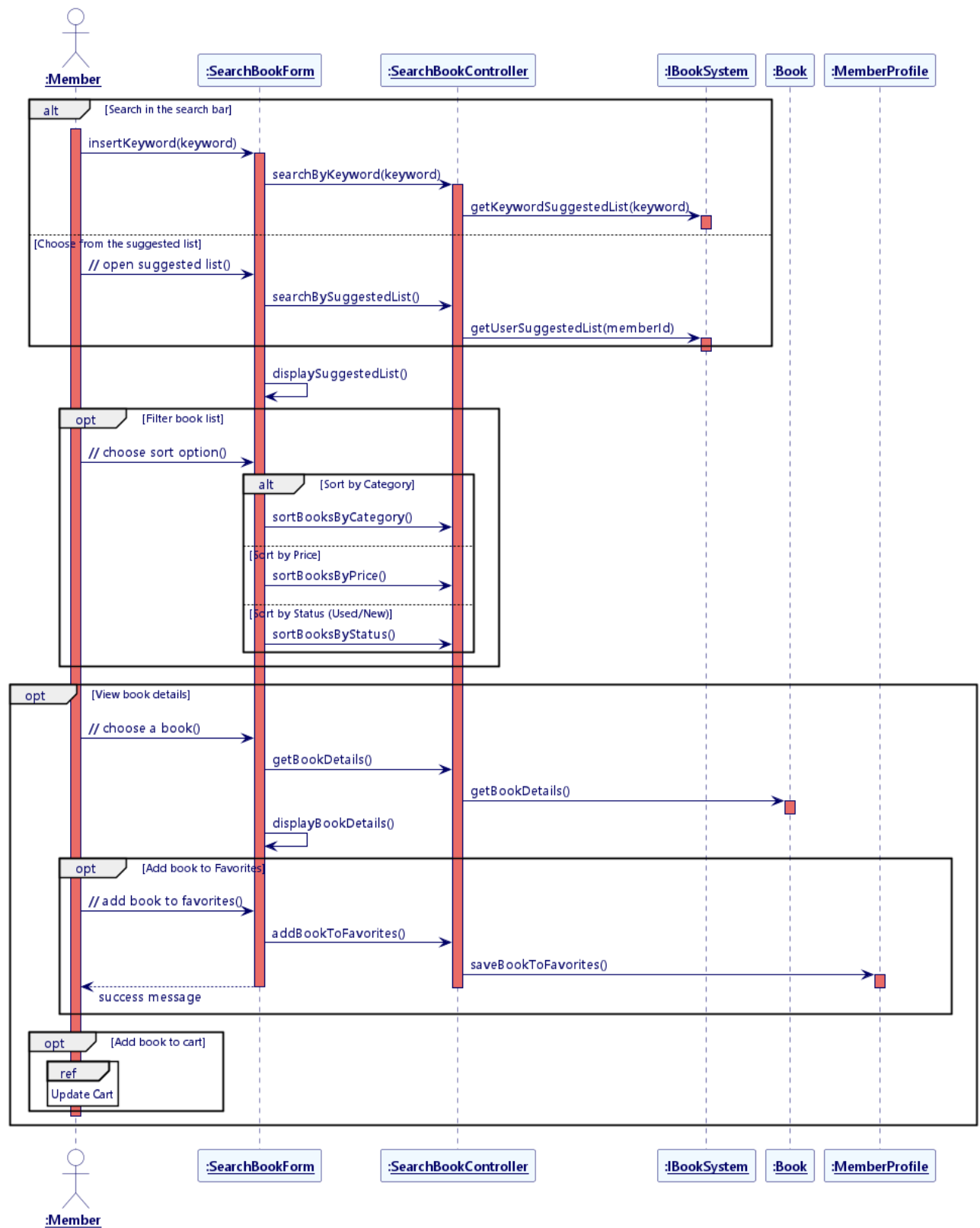


Figure 2-58: Search Book Sequence Diagram - Basic Flow.

2.11.2 Basic Flow - VOPC

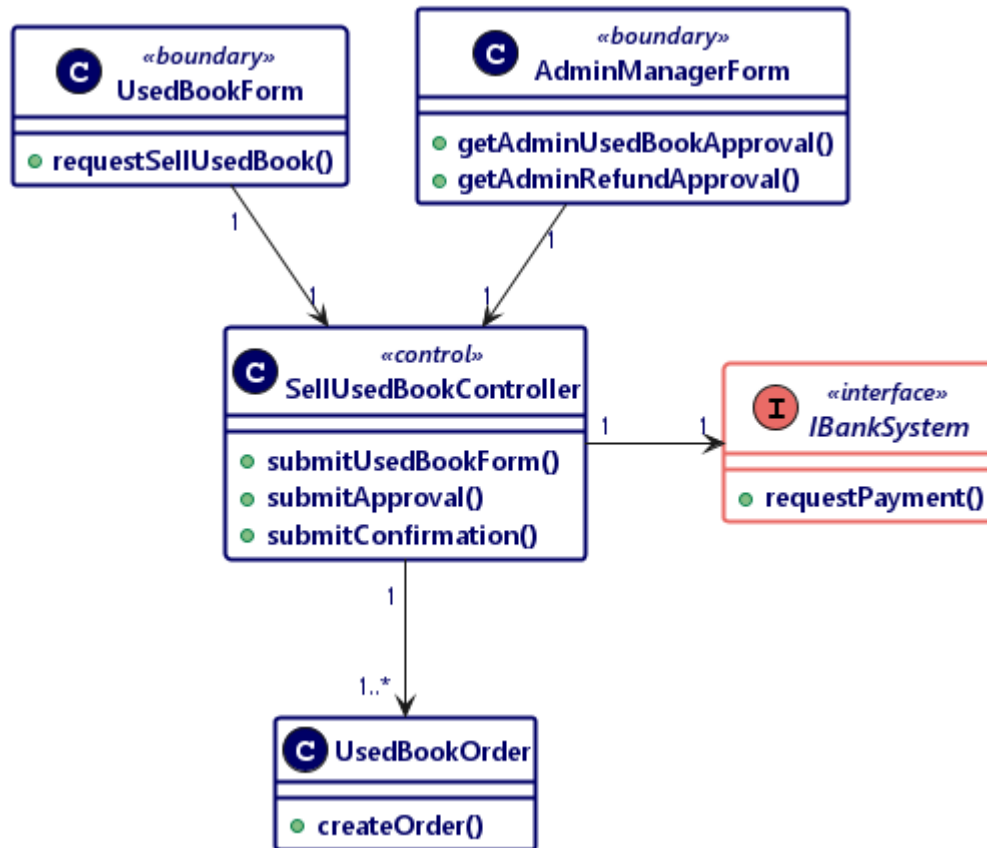


Figure 2-59: Search Book Class Diagram

2.11.3 Basic Flow – Distribution

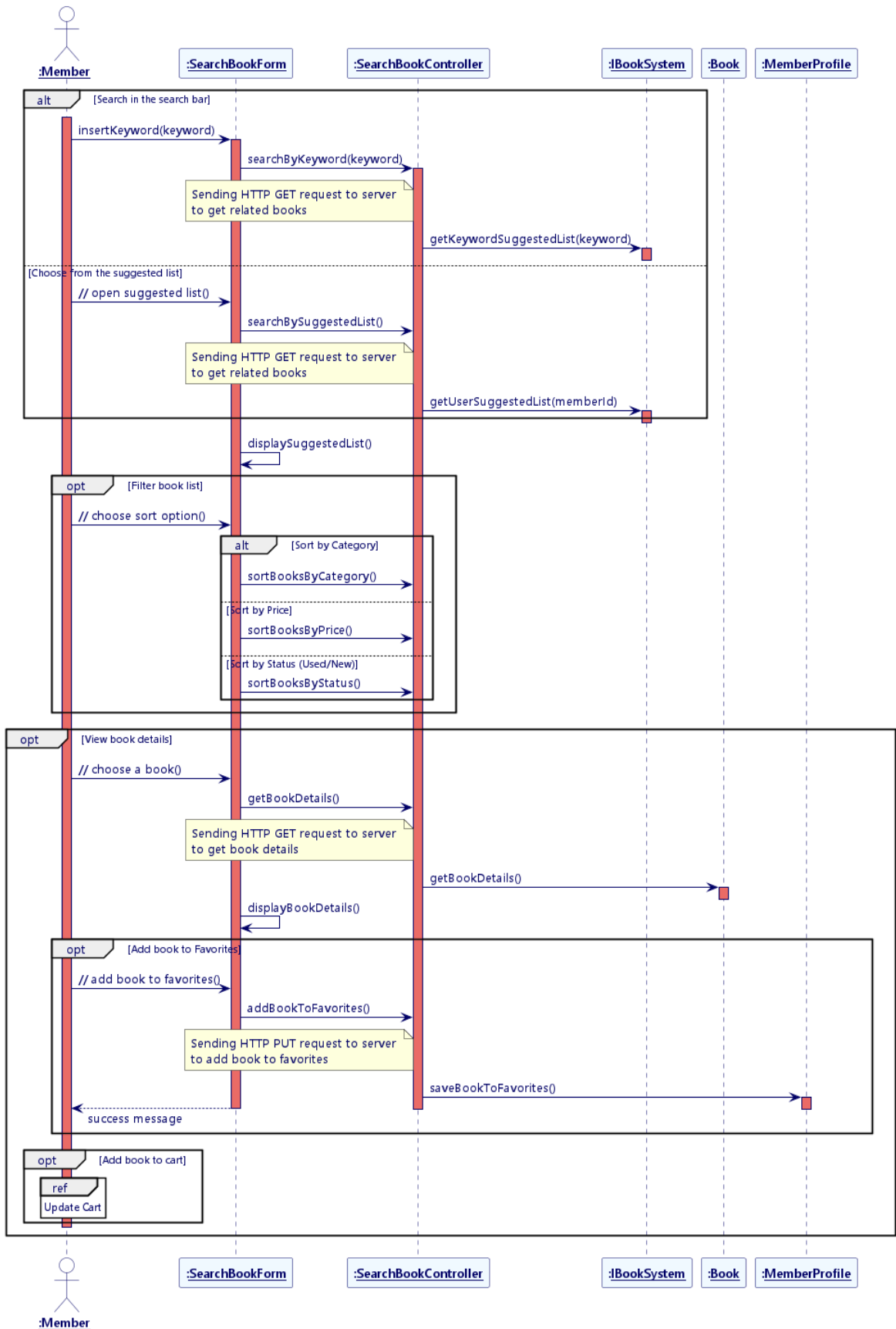


Figure 2-60: Search Book Sequence Diagram with Distribution

12. Cancel Order

2.12.1 Basic Flow

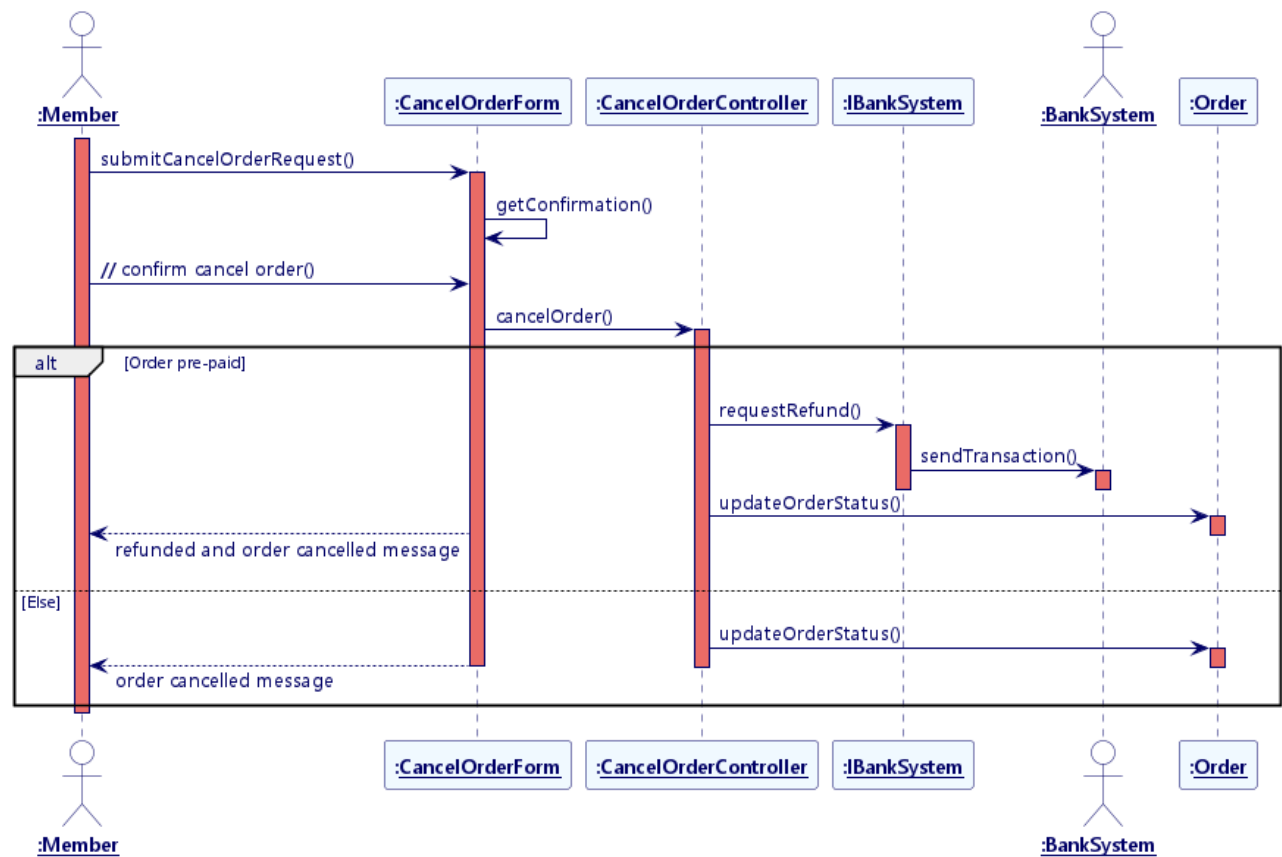


Figure 2-61: Cancel Order Sequence Diagram - Basic Flow.

2.12.2 Basic Flow - VOPC

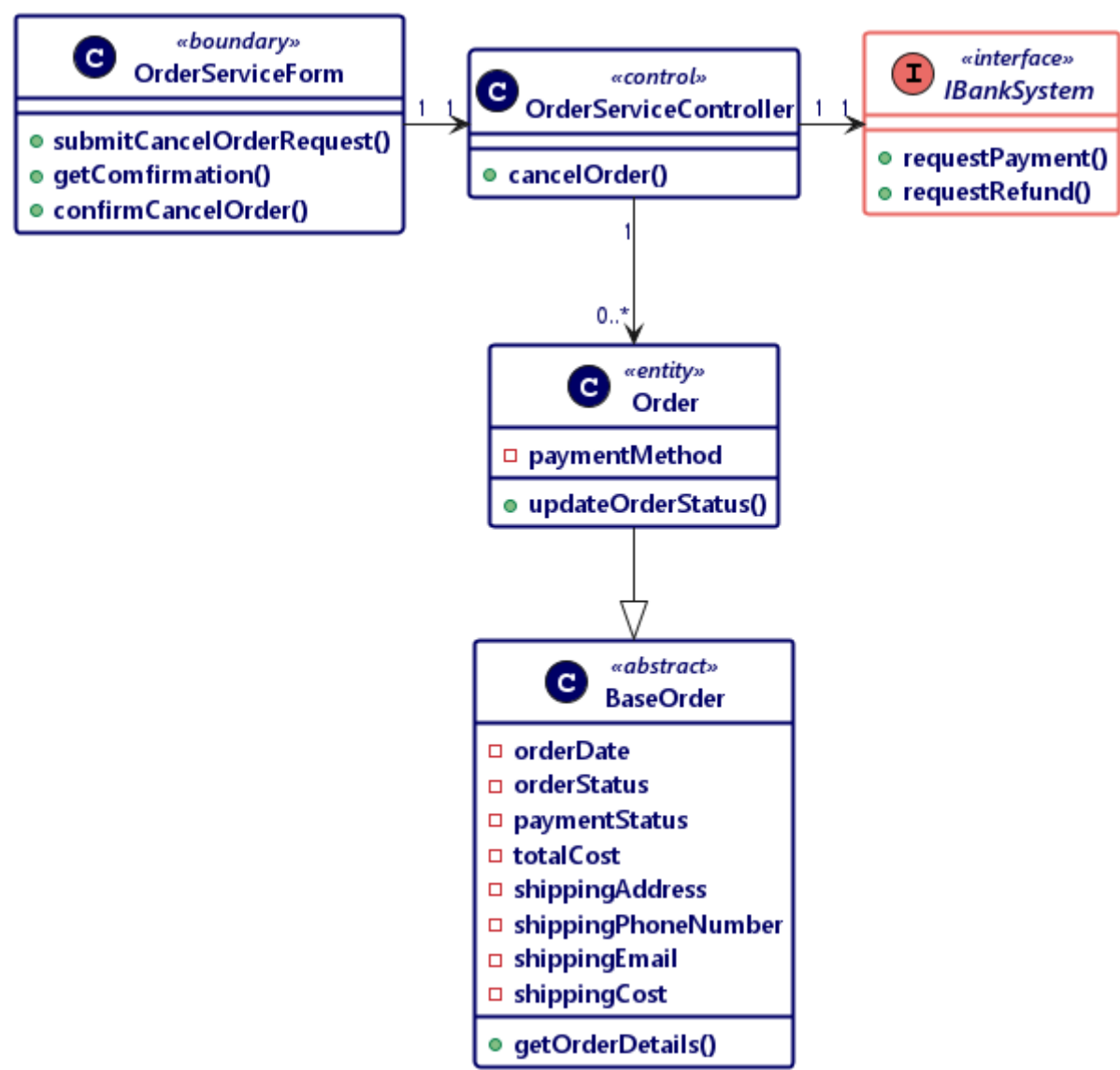


Figure 2-62: Cancel Order Class Diagram

2.12.3 Basic Flow – Distribution

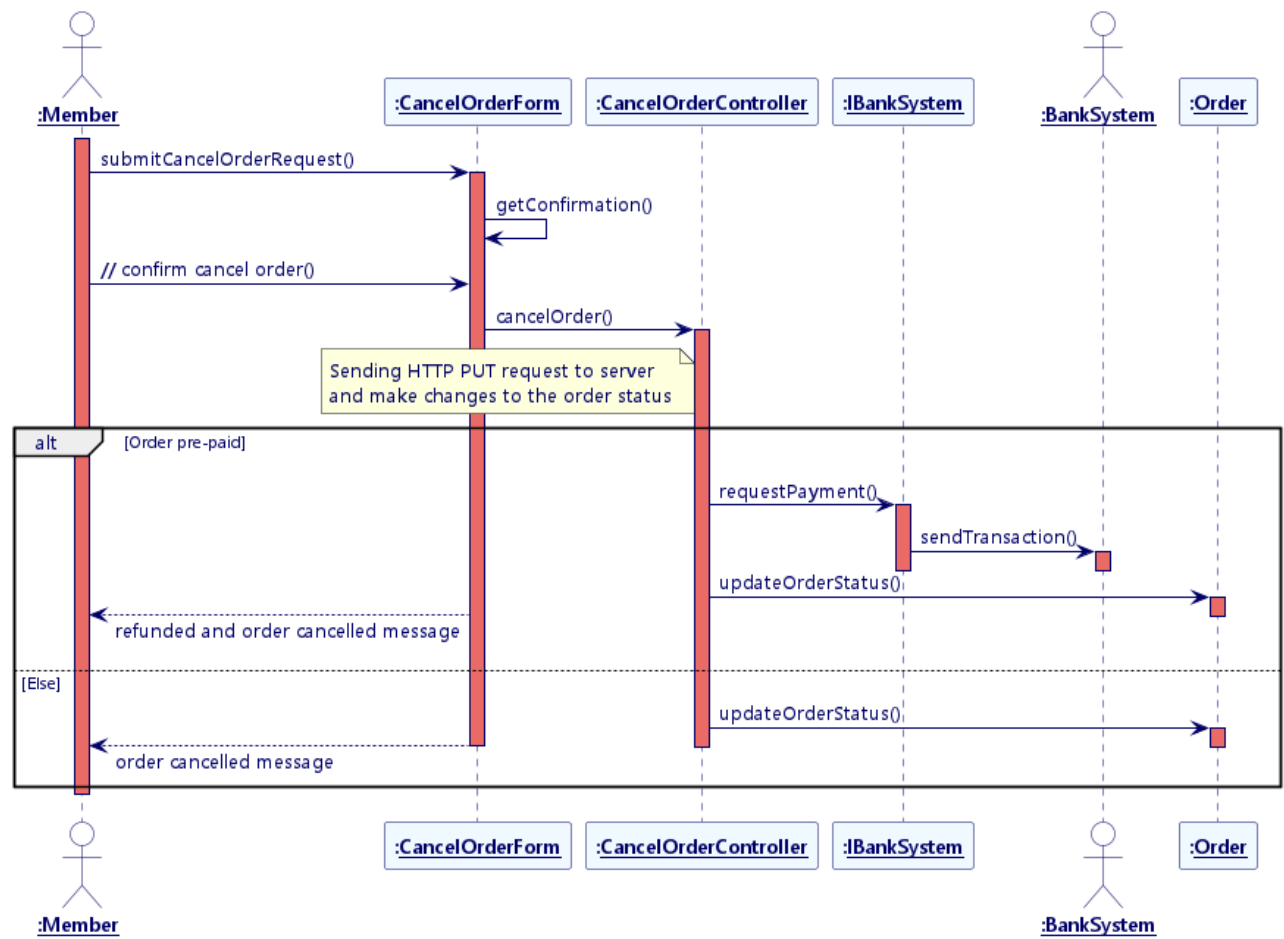


Figure 2-63: Cancel Order Sequence Diagram with Distribution

2.12.4 Basic Flow – Persistence

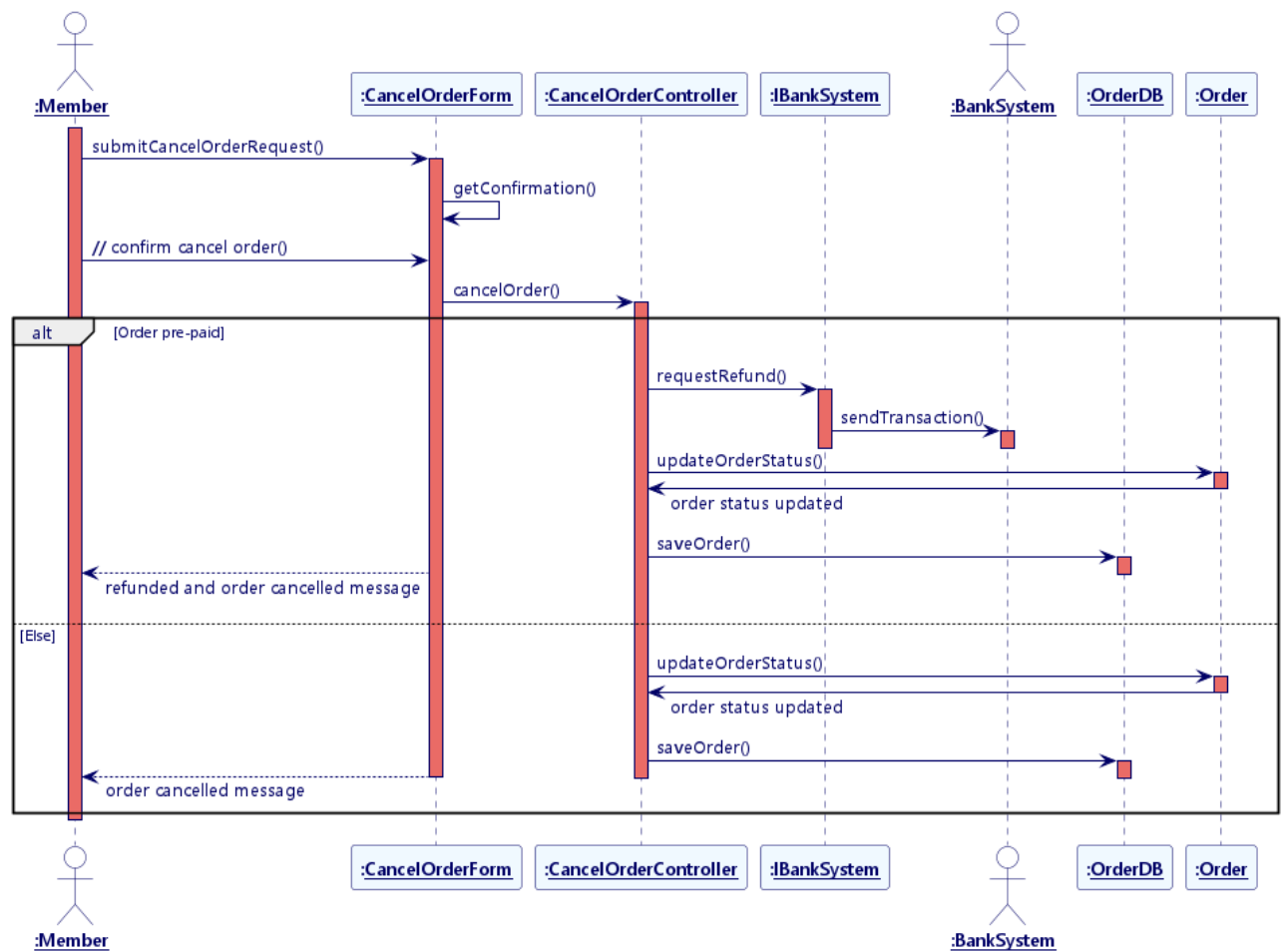


Figure 2-64: Cancel Order Sequence Diagram with Persistence

13. View Order

2.13.1 Basic Flow

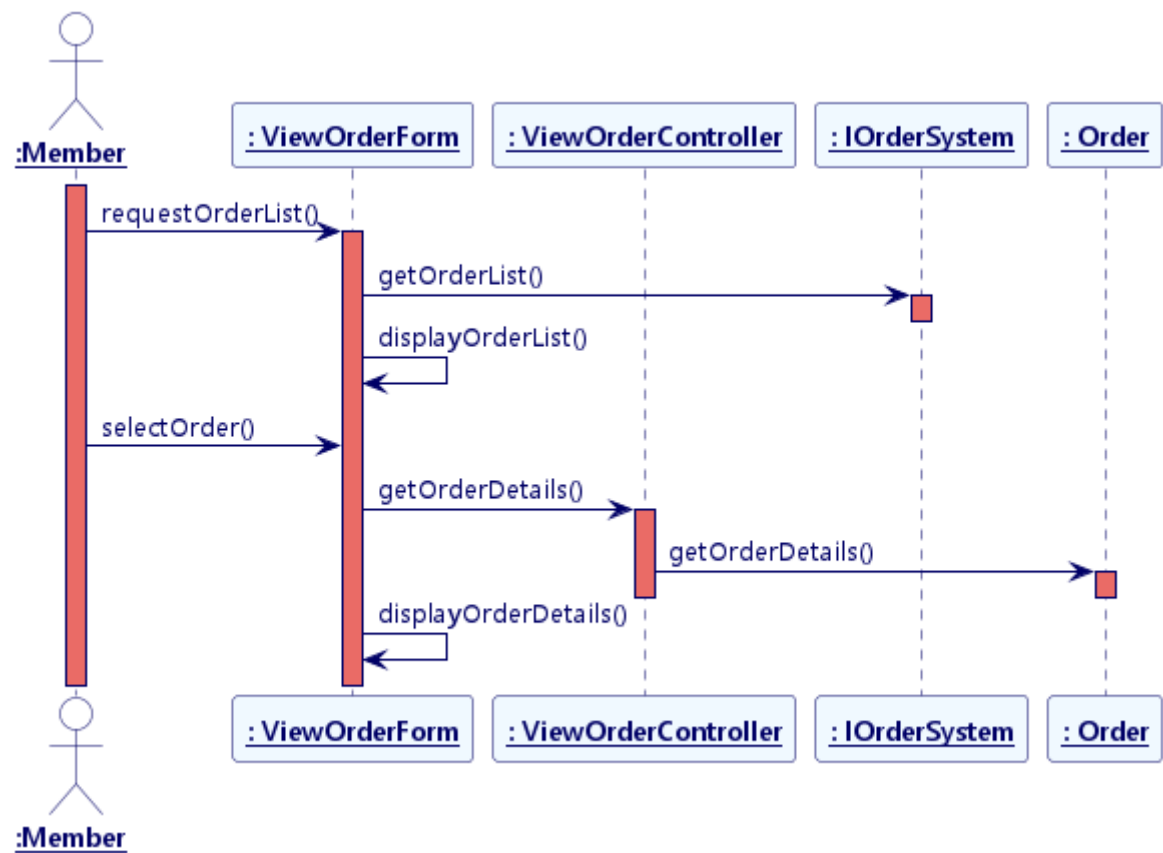


Figure 2-65: View Order Sequence Diagram - Basic Flow.

2.13.2 Basic Flow - VOPC

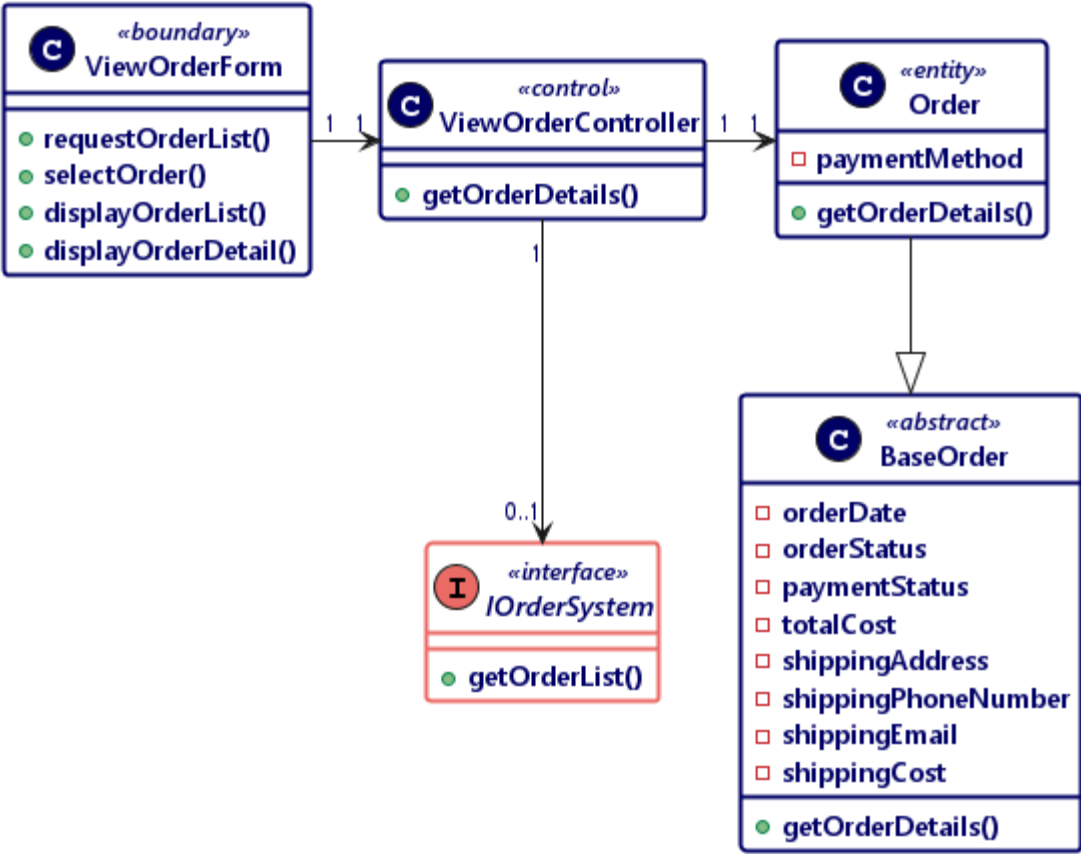


Figure 2-66: View Order Class Diagram

2.13.3 Basic Flow – Distribution

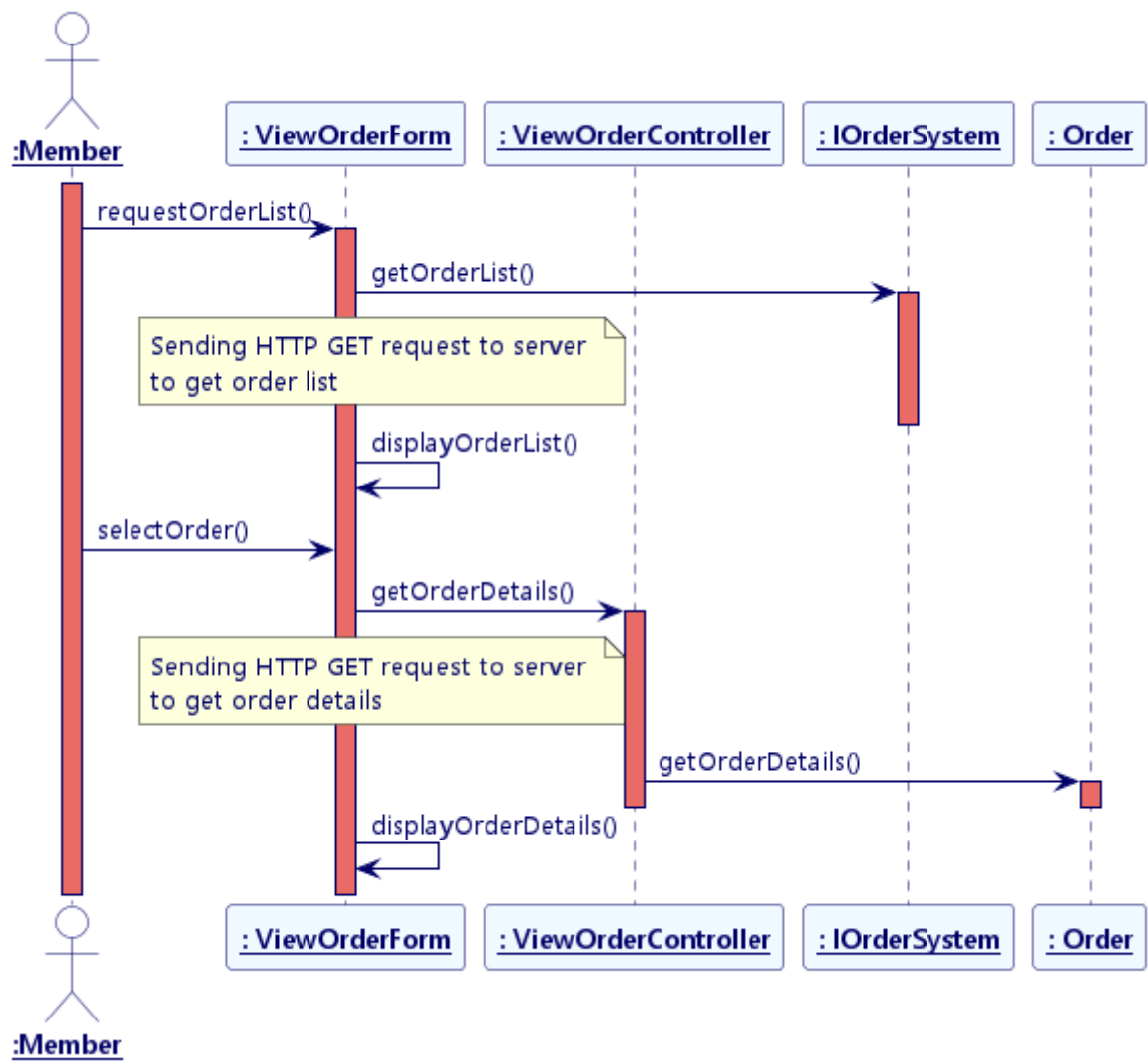


Figure 2-67: View Order Sequence Diagram with Distribution

14. Review Order

2.14.1 Basic Flow

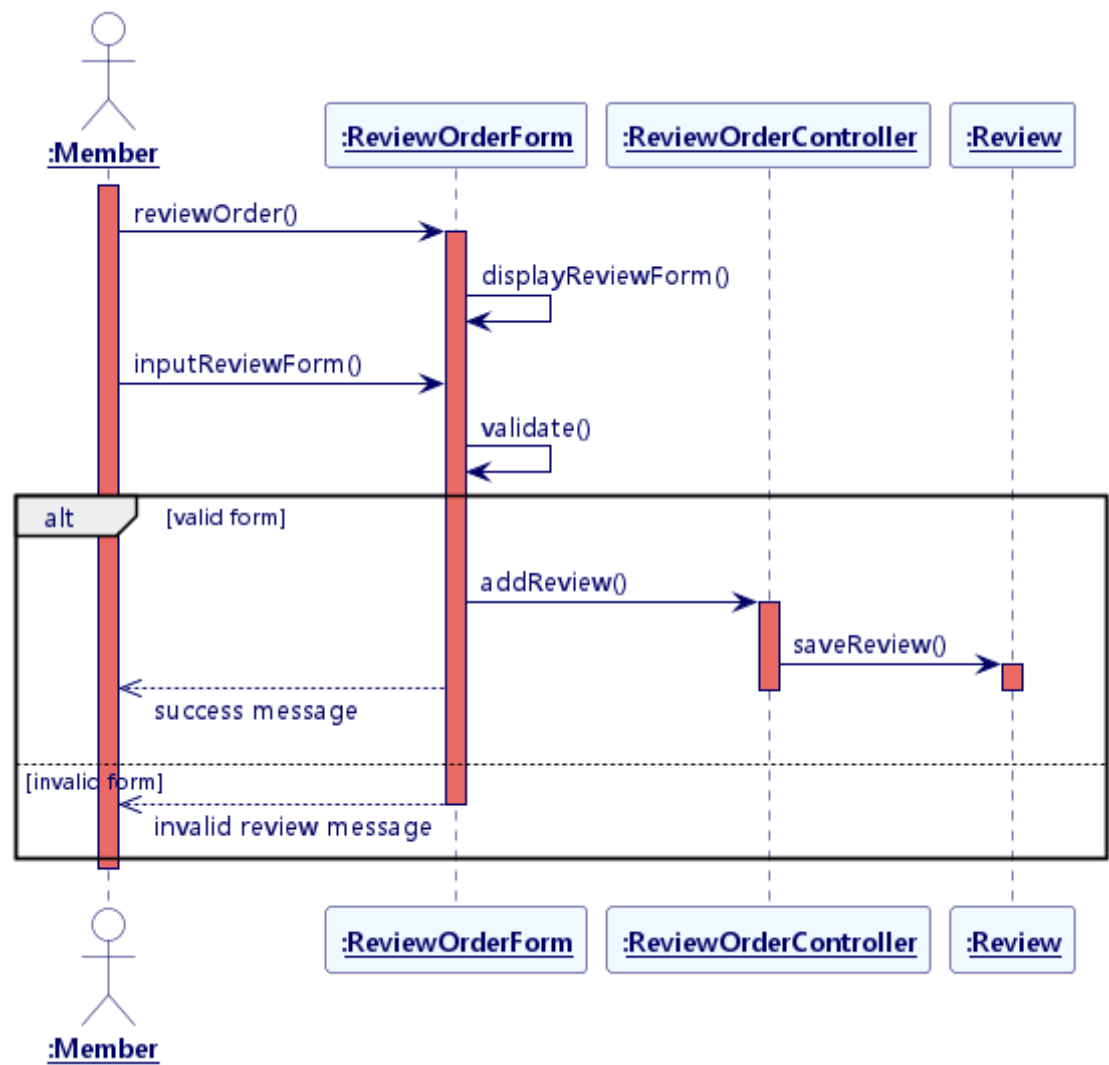


Figure 2-68: Review Order Sequence Diagram - Basic Flow.

2.14.2 Basic Flow - VOPC

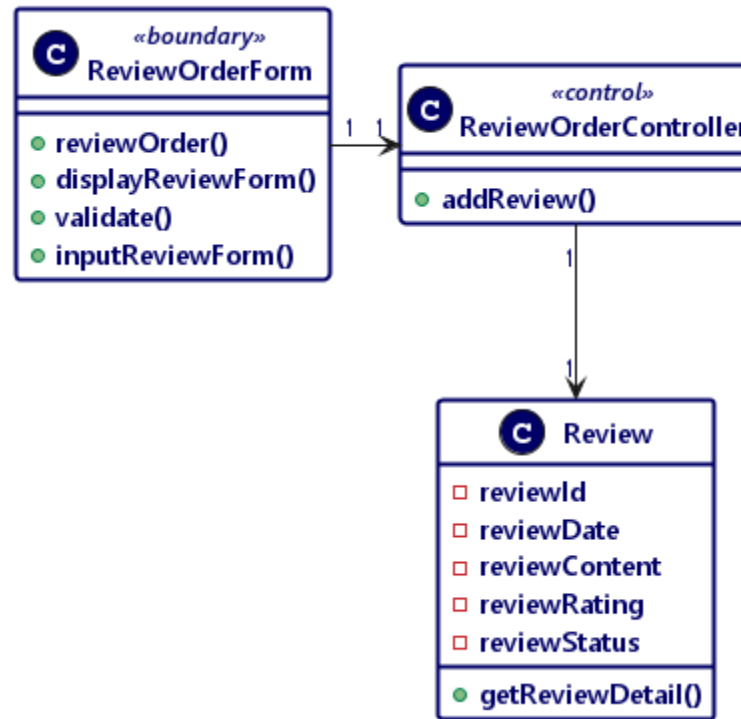


Figure 2-69: Review Order Class Diagram

2.14.3 Basic Flow – Distribution

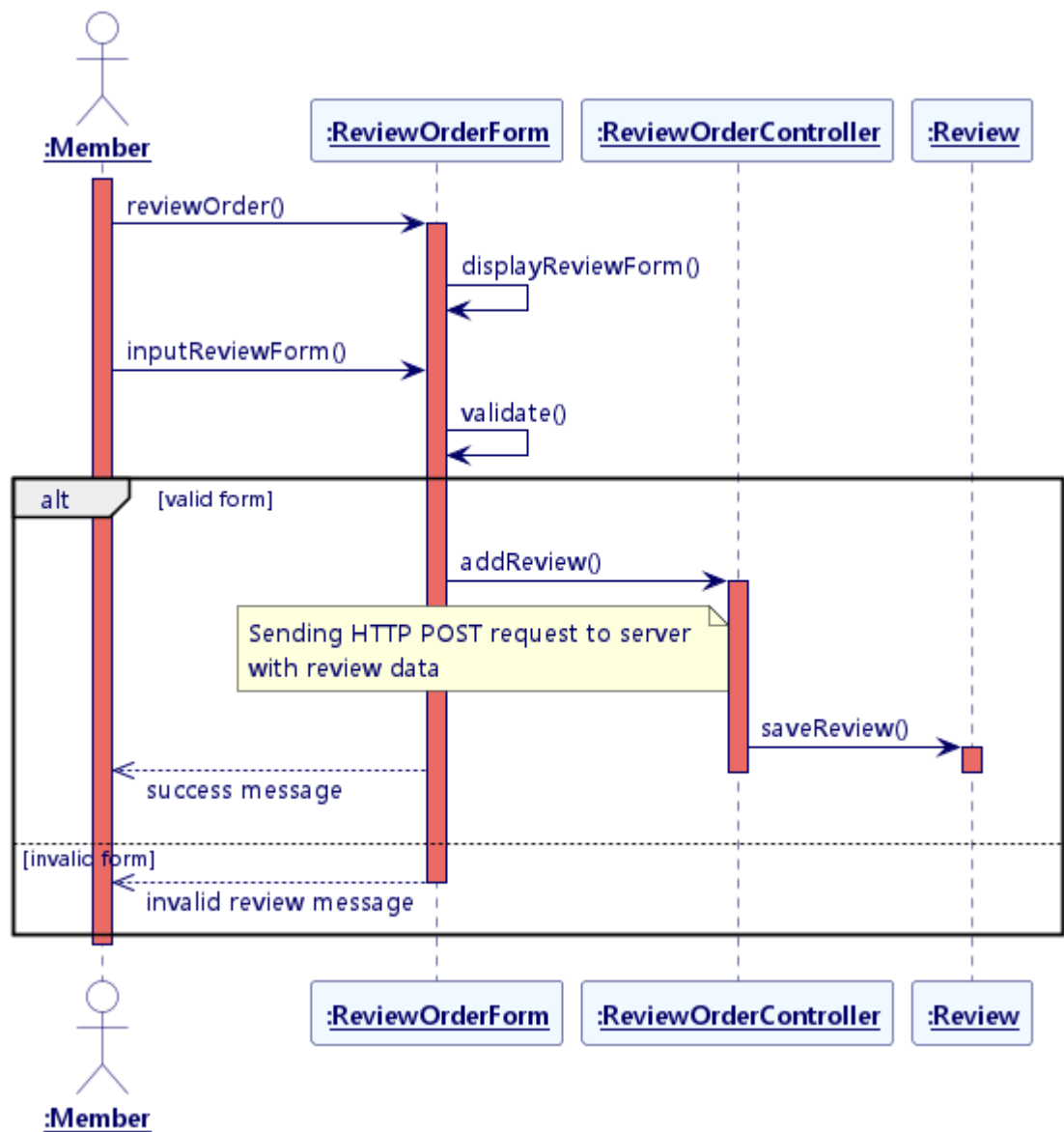


Figure 2-70: Review Order Sequence Diagram with Distribution

2.14.4 Basic Flow – Persistence

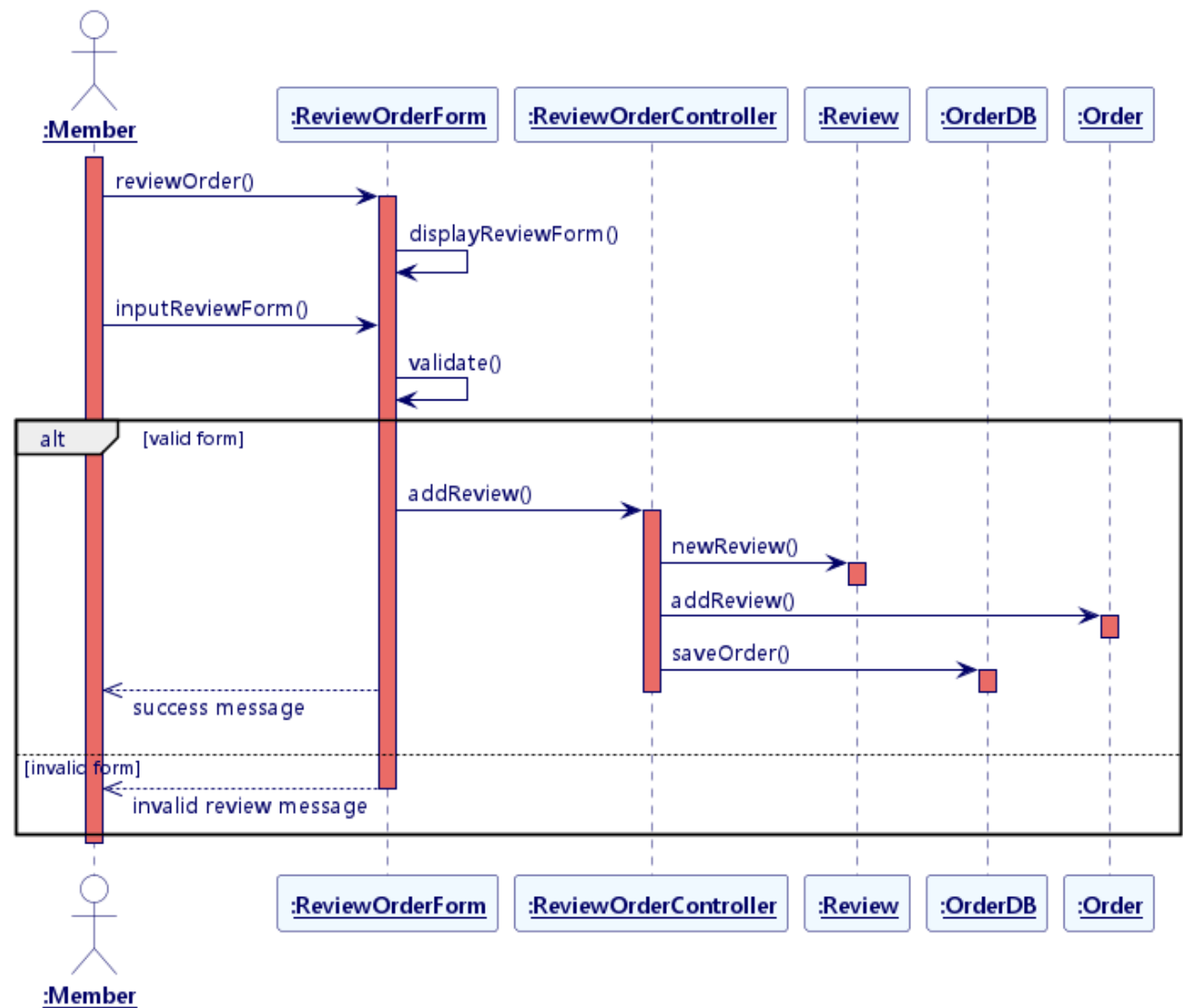


Figure 2-71: Review Order Sequence Diagram with Persistence

15. Request Refund

2.15.1 Basic Flow

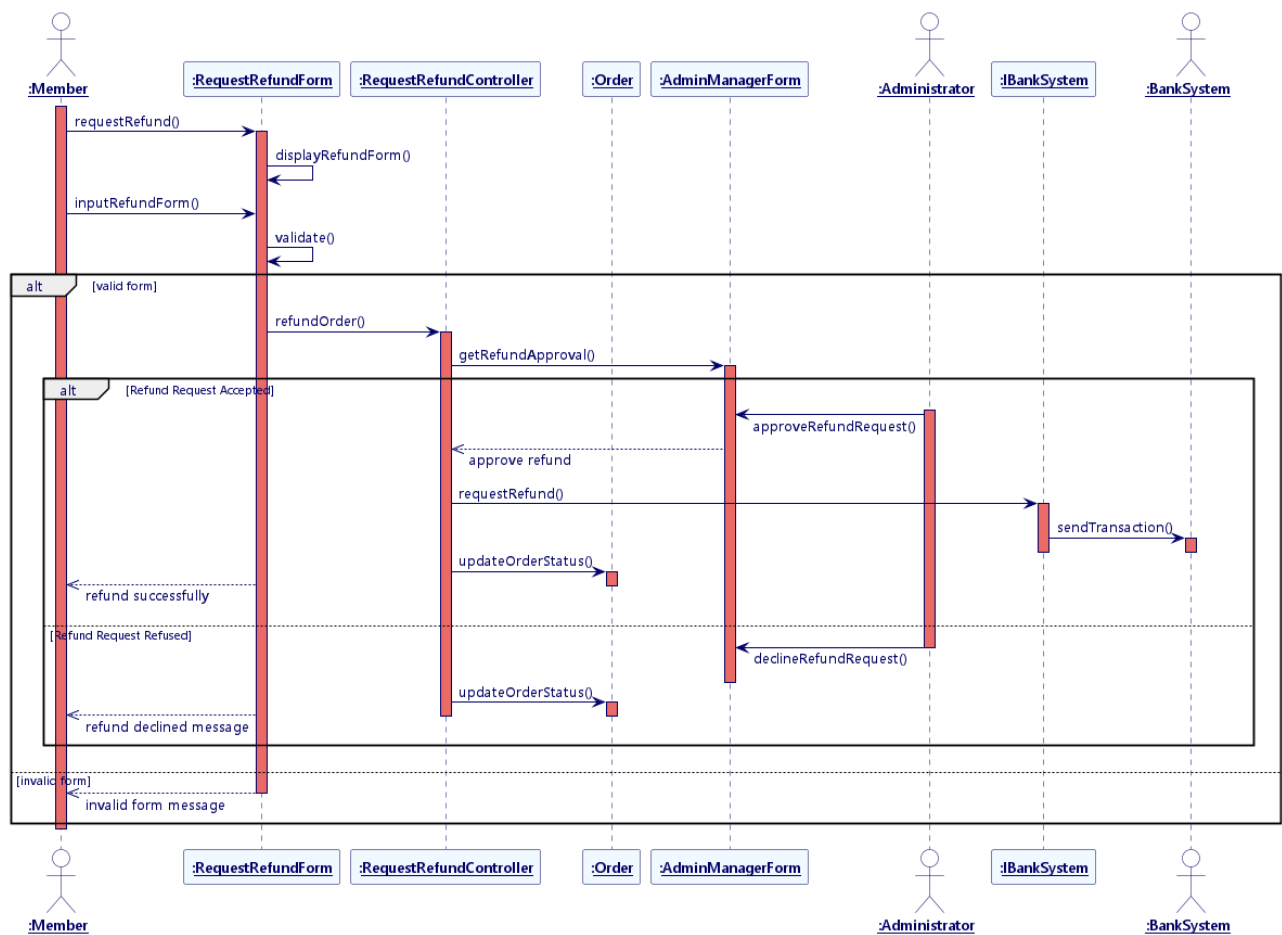


Figure 2-72: Request Refund Sequence Diagram - Basic Flow.

2.15.2 Basic Flow - VOPC

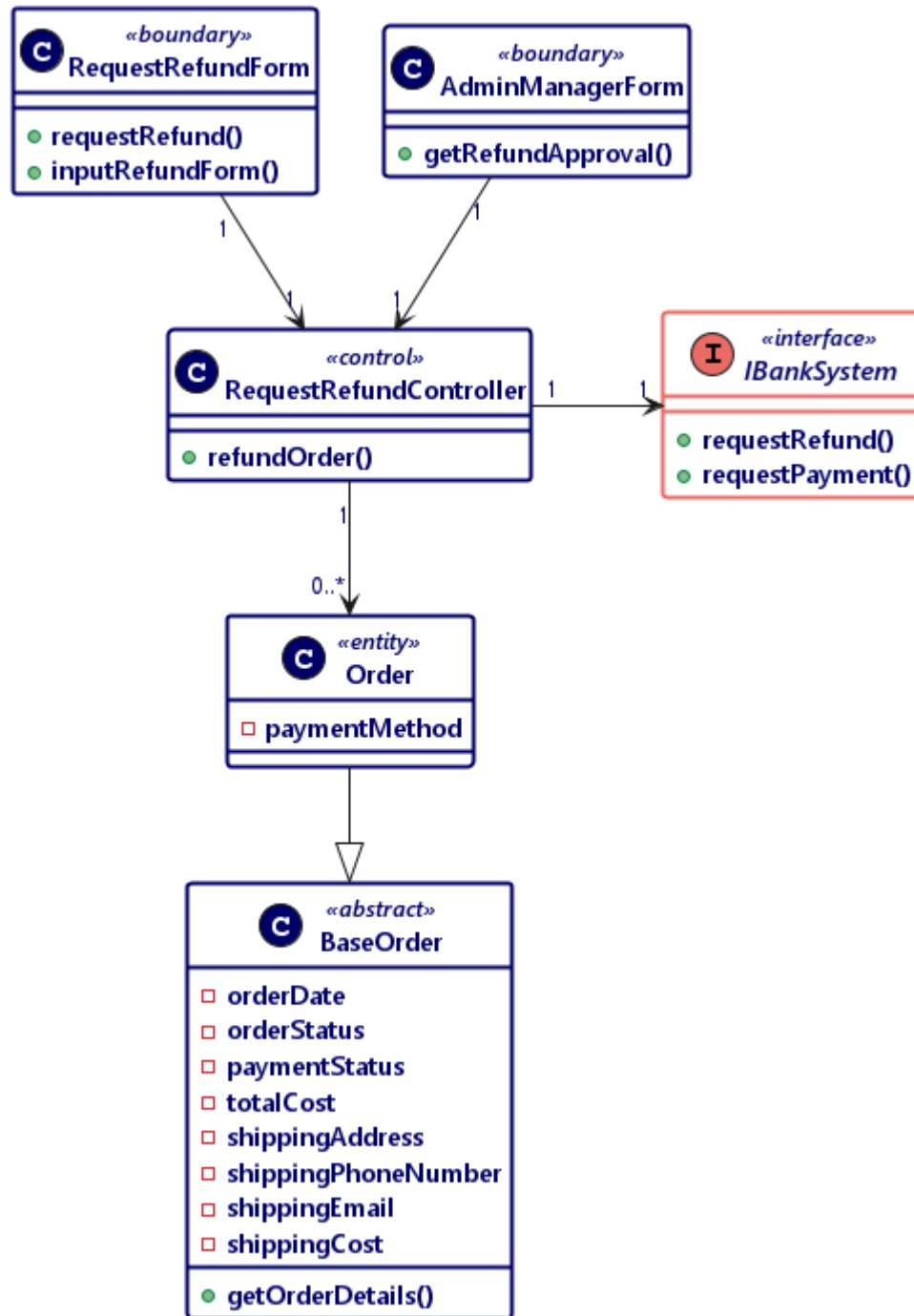


Figure 2-73: Request Refund Class Diagram

2.15.3 Basic Flow – Distribution

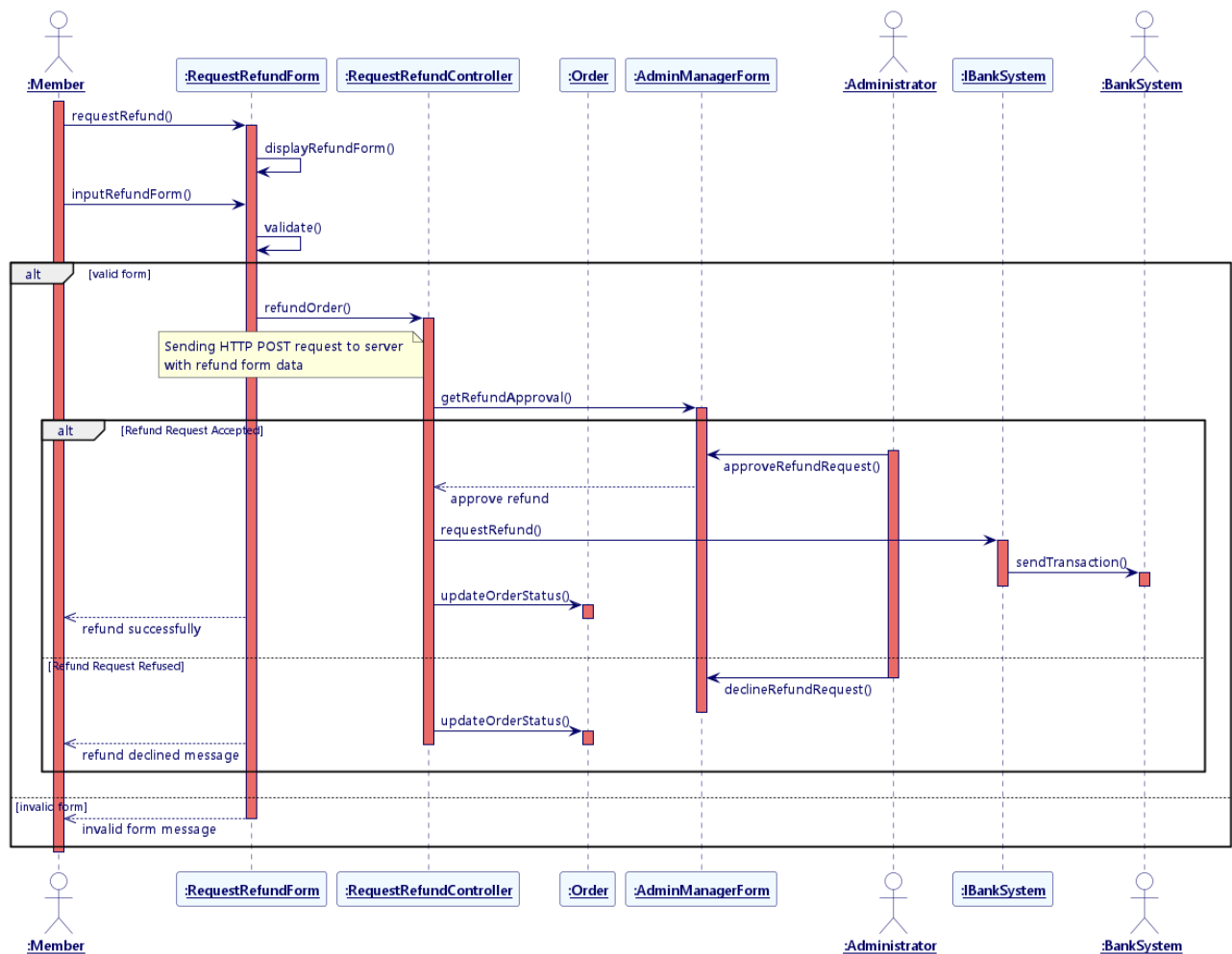


Figure 2-74: Request Refund Sequence Diagram with Distribution

2.15.4 Basic Flow – Persistence

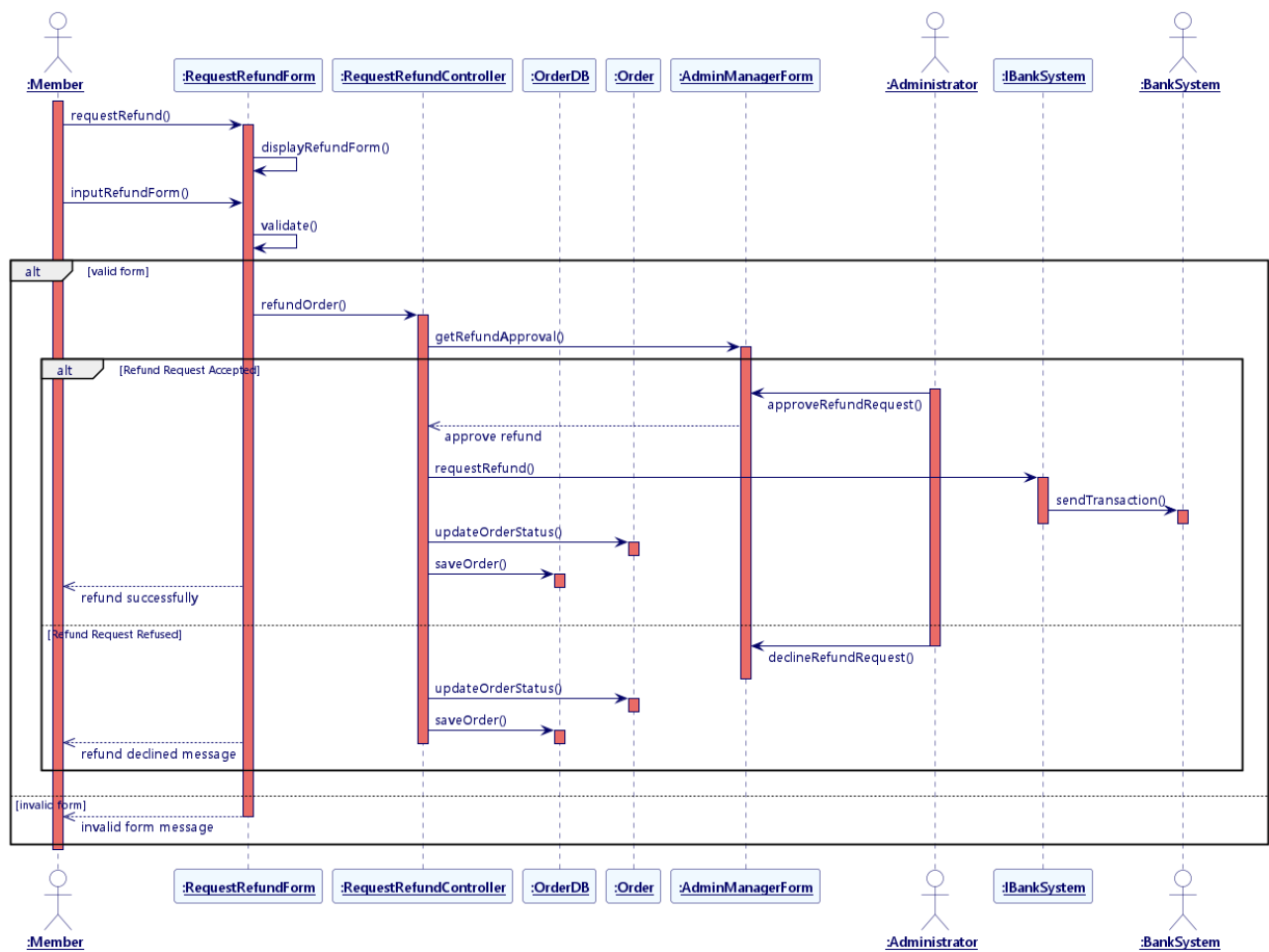


Figure 2-75: Request Refund Sequence Diagram with Persistence

16. Sell Used Book

2.16.1 Basic Flow

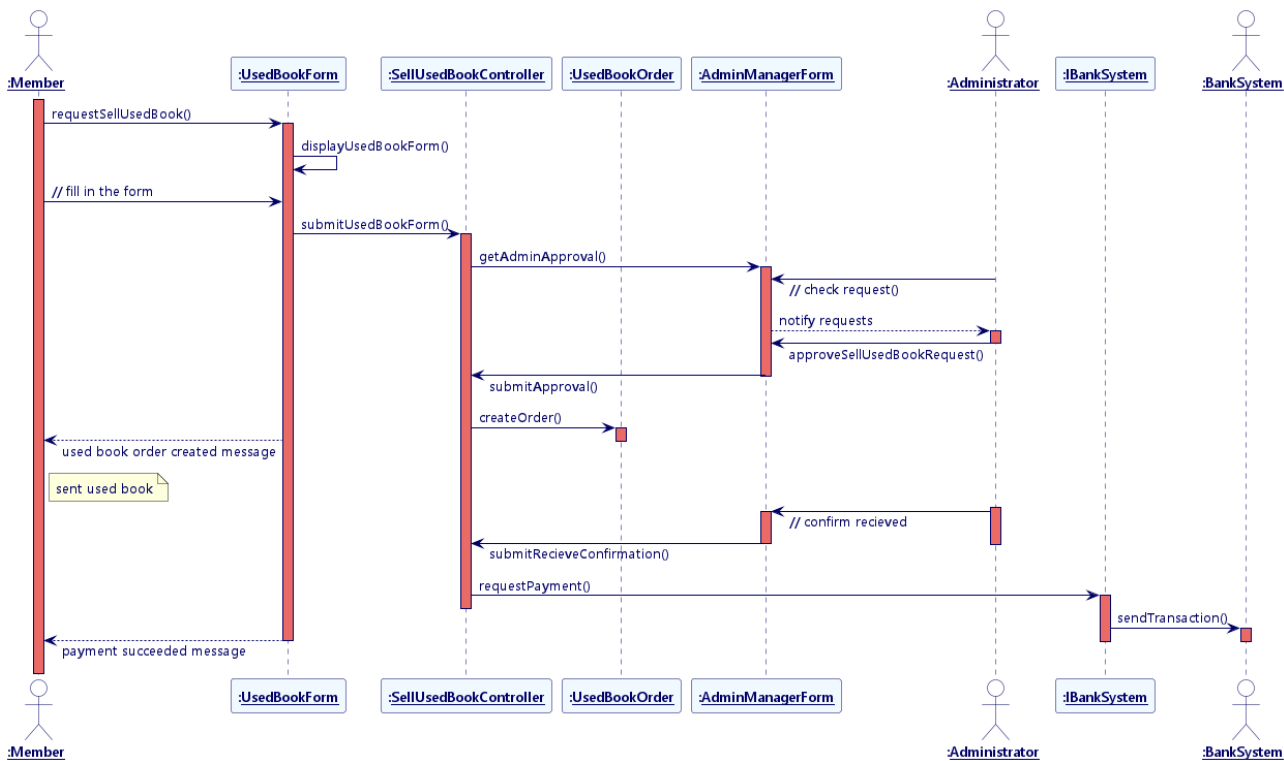


Figure 2-76: Sell Used Book Sequence Diagram - Basic Flow.

2.16.2 Basic Flow - VOPC

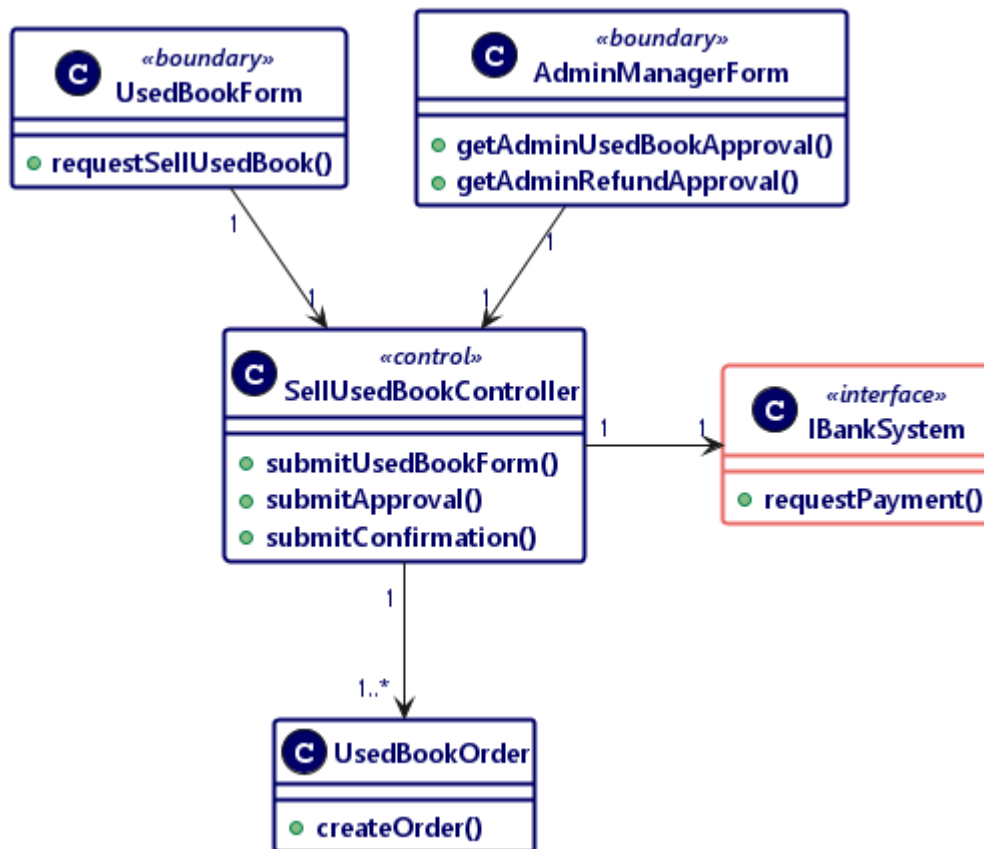


Figure 2-77: Sell Used Book Class Diagram

2.16.3 Basic Flow - Distribution

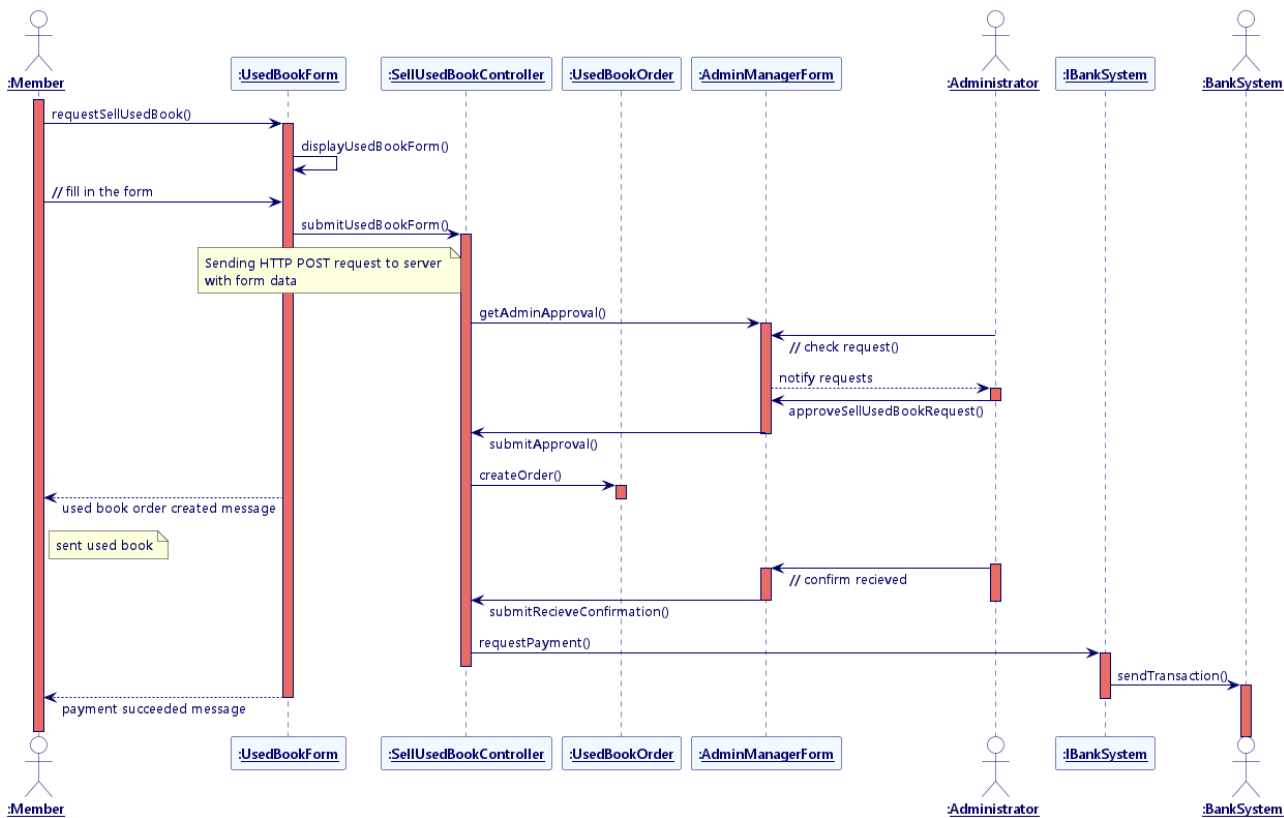


Figure 2-78: Sell Used Book Sequence Diagram with Distribution