DESIGN SPECIFICATION

- Course Information: SW Engineering ISE 304
- Report Name: Design Specification
- Project Title: GlobalCargo Connect
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1. INTRODUCTION

- **Purpose of the Document:** Detailed design of the "GlobalCargo Connect" application.
- **Contents:** System Architecture, Low-Level Design including Class Diagrams, Sequence/Collaboration Diagrams, and Data Flow Diagrams.
- **Document Organization:** Sequentially organized to reflect the design process from high-level architecture to detailed design elements.

2. SYSTEM ARCHITECTURE

2.1 System Architecture Overview

High-Level Architecture Description:
The architecture of the "GlobalCargo Connect" application is designed to efficiently manage and streamline the process of global exporting and importing. It is composed of several key components that interact to provide a seamless user experience. The high-level architecture can be broken down into the following main components:

User Interface (UI):

- The UI component is responsible for presenting information to and gathering input from the users. It includes screens for user registration, cargo booking, tracking, and management.
- It interacts with the Backend Server for data retrieval and processing.

Backend Server:

- This component handles the application's core logic, including user authentication, cargo booking processes, data storage, and retrieval.
- It communicates with the Database to store and fetch data, and with external APIs for additional functionalities like tracking.

Database:

- The Database stores all persistent data required by the application, such as user profiles, cargo details, and transaction records.
- It is accessed by the Backend Server for data queries and updates.

External APIs and Services:

- These are integrated into the system to provide additional functionalities such as cargo tracking, notifications, and payment processing.
- The Backend Server interacts with these services to enhance the app's capabilities.

Security and Authentication:

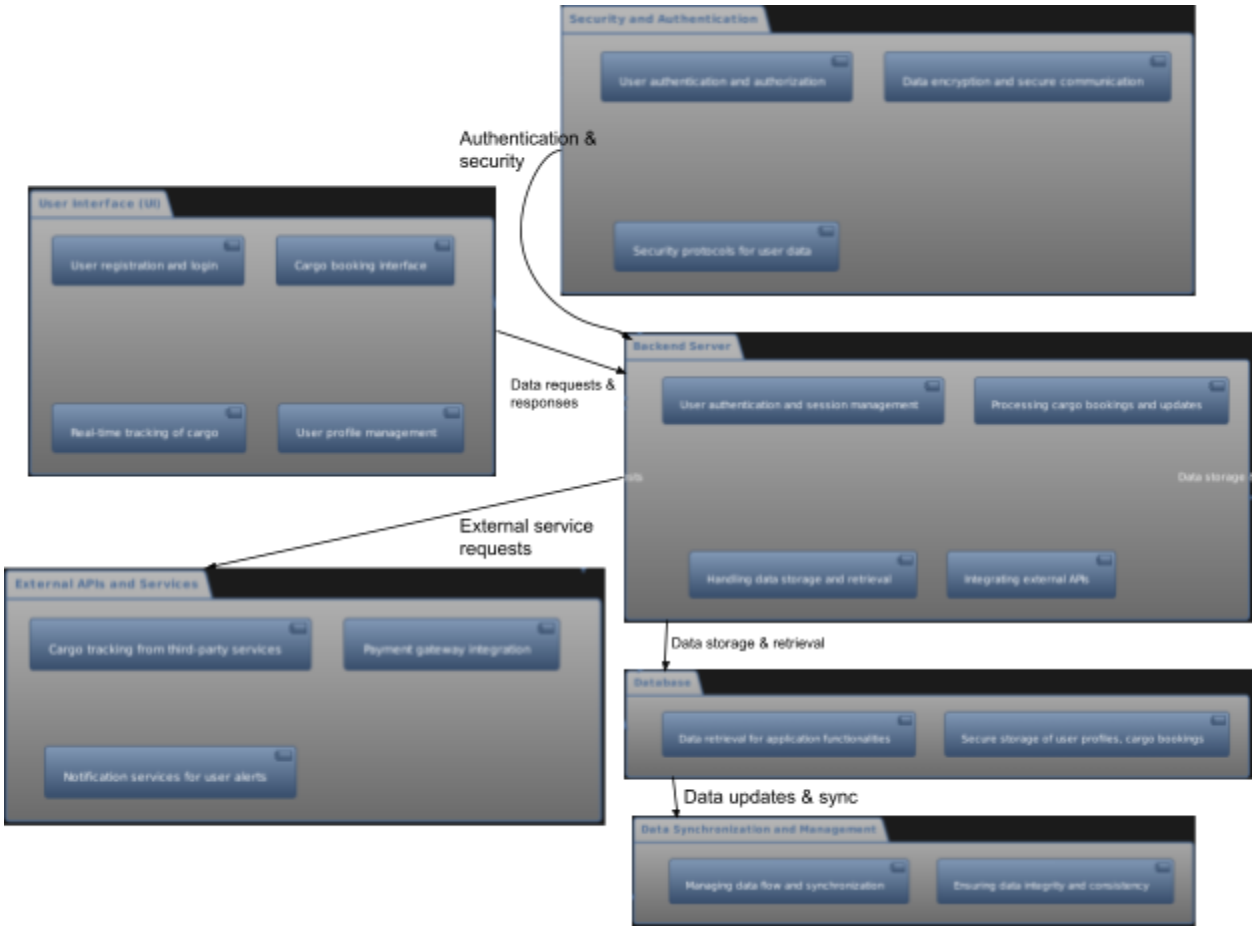
- This component ensures the security of user data and transactions. It includes mechanisms for user authentication, data encryption, and secure communication.
- It is embedded within the Backend Server and UI components to safeguard all interactions within the app.

Data Synchronization and Management:

- Responsible for ensuring data consistency and integrity across different components of the application.
- It is integrated into the Backend Server, allowing smooth data flow and updates between the UI, Database, and external services.

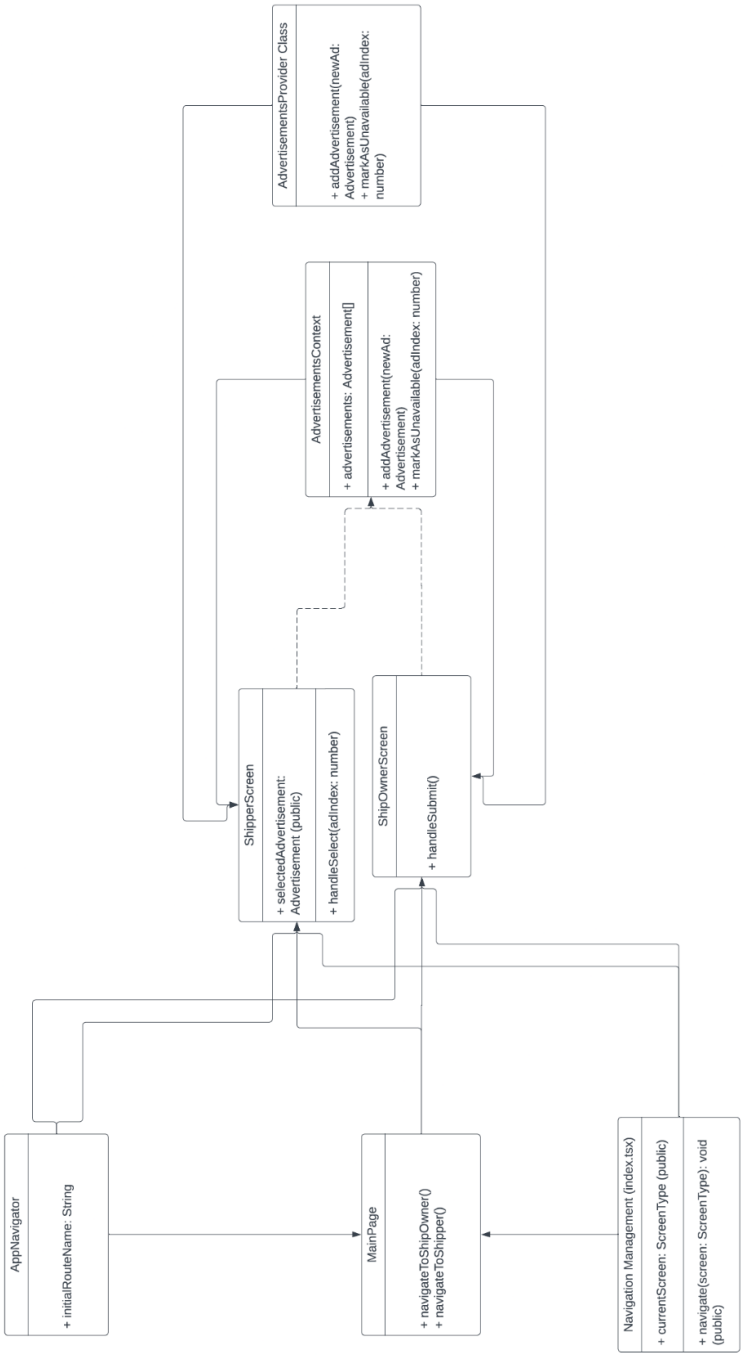
This architecture is designed to be scalable and robust, ensuring that the application can handle increasing loads and provide a consistent user experience. The interaction between these components ensures that "GlobalCargo Connect" operates efficiently, offering users a reliable and user-friendly platform for their global shipping needs.

2.2 Component (Package) Diagram

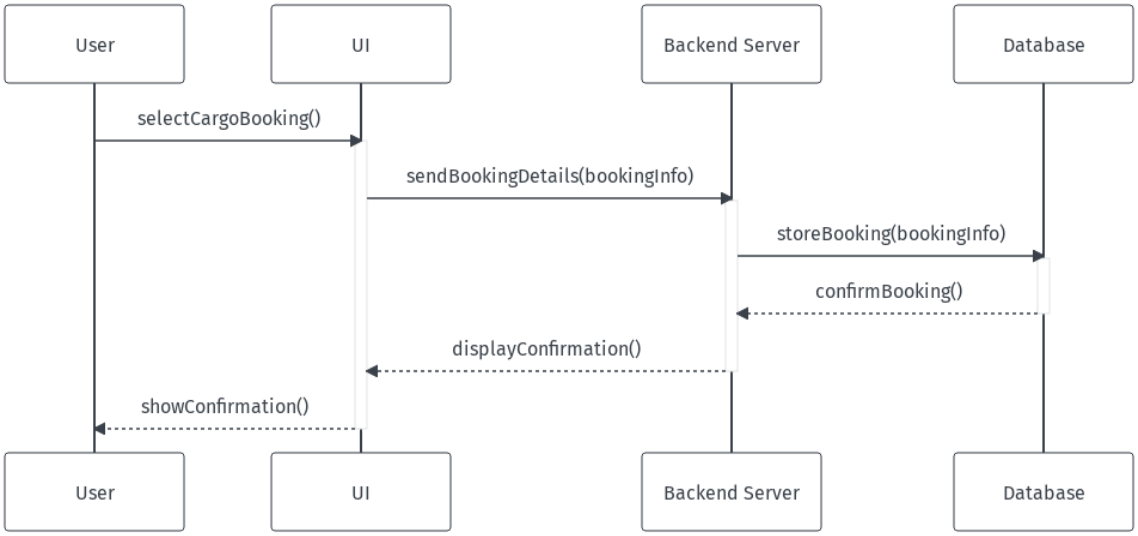


3. LOW LEVEL DESIGN

- ## 3.1 Class Diagrams



- ## 3.2 Sequence or Collaboration Diagrams



- **3.3 Data Flow Diagram**