1. **Introduction**
   1. ***Objective***

The purpose of this **Software Requirement Specification (SRS)** is to provide a comprehensive and structured description of the **Automated Inventory Management System (AIMS)**. This document defines the system's functional and non-functional requirements, focusing on key processes such as placing orders, managing orders, and processing payments.

This SRS serves as a reference for all stakeholders involved in the development, implementation, and maintenance of AIMS, including:

* **Software developers** who will design and implement the system.
* **Project managers** responsible for overseeing the project's progress and ensuring alignment with business needs.
* **Quality assurance teams** who will validate the system against specified requirements.
* **End users**, such as customers interacting with AIMS for order placement and payment processing.
* **Business analysts** who define and refine system requirements to meet business objectives.

By detailing use case diagrams, business processes, and specific functional requirements related to order placement and payment, this document ensures that all parties have a clear understanding of AIMS's expected functionality and performance criteria.

* 1. ***Scope***

1. **Software Product Identification**

The software product being developed is the **Automated Inventory Management System (AIMS)**, a web-based platform designed to facilitate the management of media product orders. AIMS provides an integrated solution for customers to browse, purchase, and pay for media products while enabling efficient inventory tracking and order management.

1. **System Capabilities and Limitations**

**What AIMS Will Do**

AIMS is designed to automate and streamline the order placement and payment process, offering the following key functionalities:

* Allowing customers to search, browse, and add media products to their cart.
* Checking product availability before order confirmation.
* Providing an intuitive checkout process where users can enter delivery details and calculate shipping fees.
* Processing payments through an integrated gateway (VNPay).
* Managing order status and sending notifications upon successful transactions.
* Keeping track of inventory to ensure accurate stock levels.

**What AIMS Will Not Do**

* AIMS does **not** handle physical product delivery; it only facilitates order processing and payment.
* The system does not support in-person cash payments; all transactions are conducted digitally.
* AIMS does **not** act as a marketplace for third-party sellers; only products managed within the system can be purchased.

1. **Application and Benefits**

AIMS is intended to be used by businesses and individuals involved in the **sale and management of media products**, including books, DVDs, and digital media. The system benefits different stakeholders as follows:

* **For customers**: A convenient and efficient way to search for, order, and pay for media products online.
* **For business owners**: Streamlined inventory management and automated order processing, reducing manual workload.
* **For system administrators**: Centralized control over product listings, pricing, and order tracking

1. **Alignment with Business Goals**

AIMS is designed to support the **digital transformation of inventory and order management** in the media retail sector. By automating key processes, the system aims to:

* Improve customer satisfaction through a seamless ordering experience.
* Increase operational efficiency by minimizing human intervention in inventory and order management.
* Enhance accuracy in stock tracking and order fulfillment.
  1. ***Glossary***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Term | Explanation | Example | Note |
| 1 | AIMS | |  | | --- | | Automated Inventory Management System, a software platform designed to facilitate media product order placement, payment processing, and inventory management. |  |  | | --- | |  | | |  | | --- | | N/A |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | The main system described in this document. |  |  | | --- | |  | |  |  | | --- | |  | |
| 2 | |  |  |  | | --- | --- | --- | | |  | | --- | | Use Case (UC) |  |  | | --- | |  | |  |  | | --- | |  | | |  | | --- | | A description of system interactions between users and software to accomplish a specific goal. |  |  | | --- | |  | | |  | | --- | | UC "Place Order" |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | Defines the functional requirements of the system. |  |  | | --- | |  | |  |  | | --- | |  | |
| 3 | Cart | |  | | --- | | A temporary storage for selected media products before order placement. |  |  | | --- | |  | | |  | | --- | | A user adds a book to the cart before purchasing. |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | The cart is emptied after a successful order. |  |  | | --- | |  | |  |  | | --- | |  | |
| 4 | Order | |  | | --- | | A request made by a customer to purchase selected media products from AIMS. |  |  | | --- | |  | | |  | | --- | | A customer places an order for 3 DVDs. |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | An order consists of multiple media items, delivery details, and a payment transaction. |  |  | | --- | |  | |  |  | | --- | |  | |
| 5 | |  | | --- | | Payment Gateway |  |  | | --- | |  | | |  | | --- | | A third-party service that processes online payments securely. |  |  | | --- | |  | | VNPay | |  |  |  | | --- | --- | --- | | |  | | --- | | AIMS integrates with a payment gateway to handle transactions. |  |  | | --- | |  | |  |  | | --- | |  | |
| 6 | |  | | --- | | Transaction ID |  |  | | --- | |  | | |  | | --- | | A unique identifier assigned to each payment transaction. |  |  | | --- | |  | | |  | | --- | | TXN123456789 |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | Used for tracking and verification purposes. |  |  | | --- | |  | |  |  | | --- | |  | |
| 7 | |  | | --- | | Inventory Management |  |  | | --- | |  | | |  | | --- | | The process of tracking stock levels to ensure product availability. |  |  | | --- | |  | | |  | | --- | | Checking if a book is in stock before allowing a purchase. |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | AIMS updates inventory automatically after an order is placed. |  |  | | --- | |  | |  |  | | --- | |  | |
| 8 | |  | | --- | | Shipping Fee |  |  | | --- | |  | | |  | | --- | | The cost associated with delivering purchased products to customers. |  |  | | --- | |  | | |  | | --- | | A shipping fee of 30,000 VND is applied to an order. |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | Calculated based on location and order type. |  |  | | --- | |  | |  |  | | --- | |  | |
| 9 | |  | | --- | | Rush Order |  |  | | --- | |  | | |  | | --- | | A prioritized order that is processed and delivered faster than standard orders. |  |  | | --- | |  | | |  | | --- | | A customer selects "Rush Order" to receive their package sooner. |  |  | | --- | |  | | |  | | --- | |  | | |  | | --- | |  | | | | Additional shipping fees may apply. | | |  |  | | --- | |  | |
| 10 | |  | | --- | | Order Confirmation Email |  |  | | --- | |  | | |  | | --- | | An email notification sent to customers after a successful order placement. |  |  | | --- | |  | | |  | | --- | | "Your order #12345 has been confirmed!" |  |  | | --- | |  | | Contains order details and payment status. |

* 1. ***References***

1. **AIMS Use Case Specification Document**

* This document provides a detailed description of the use cases related to the **Automated Inventory Management System (AIMS)**, specifically focusing on the "Place Order" and "Pay Order" use cases.
* It includes:
* **Flow of events** that outline the step-by-step process of placing and paying for an order.
* **Input and output data specifications** for order information, shipping fees, and transaction details.
* **Alternative flows** that describe exception handling scenarios, such as invalid user input, unsuccessful payments, or unavailable products.

1. **IEEE 830-1998 - Software Requirements Specification (SRS) Standard**

* This is an internationally recognized standard published by the Institute of Electrical and Electronics Engineers (IEEE), providing guidelines for writing a clear and structured Software Requirements Specification (SRS) document.
* It ensures that the SRS is:
* **Comprehensive**: covering all functional and non-functional requirements.
* **Well-structured**: making it easy for stakeholders to understand and reference.
* **Consistent**: allowing for better communication between developers, designers, and business analysts.

1. **VNPay Payment Gateway Integration Documentation**

* This document outlines the process of integrating **VNPay**, a widely used online payment gateway, with AIMS to facilitate secure and reliable transactions.
* It includes:
* **API documentation** for processing payments, refunds, and transaction status checks.
* **Security protocols** for encrypting and validating transaction data.
* **Error handling mechanisms** to manage failed or canceled payments.

1. **SOICT - HUST ITSS Software Development Course Materials**

* These materials are part of the **Information Technology and Software Systems (ITSS) program** at the **School of Information and Communication Technology (SOICT), Hanoi University of Science and Technology (HUST)**.
* Topics covered include:
* **Software requirement analysis** and best practices for writing SRS documents.
* **Use case modeling** to define system interactions.
* **Software development methodologies**, including Agile and Waterfall approaches.

1. **Unified Modeling Language (UML) Specification**

* UML is a standardized modeling language used for visualizing and documenting software systems. This reference helps define:
* **Use Case Diagrams** to illustrate the interactions between users and the AIMS system.
* **Activity Diagrams** to represent workflows within the system.
* **Class Diagrams** for structuring data models and relationships.
* This specification ensures that the system's design follows **best practices in software architecture and requirement modeling**.