

**Inventory Management System (IMS) Report**

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Computer science (B) 3rd smester

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| Evaluation | | | | | | |
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## Introduction

### **2.1 Overview of the Project**

The Inventory Management System (IMS) is designed to streamline inventory tracking and management processes. It enables businesses to monitor stock levels, manage orders, and generate insights for better decision-making.

### **2.2 Problem Statement and Background**

Businesses often struggle with inaccurate inventory tracking, leading to stockouts or overstocking. This project aims to address these inefficiencies through automation and robust management features.

### **2.3 Significance of the Problem**

Efficient inventory management reduces costs, improves customer satisfaction, and ensures seamless operations in both retail and supply chain sectors.

## Objectives

### **3.1 Primary Goals**

* Develop a system to manage inventory accurately and efficiently.
* Provide real-time stock updates and comprehensive reporting.

### **3.2 Expected Outcomes**

* Accurate stock tracking.
* Enhanced decision-making through analytics.
* User-friendly interface for managing inventory operations.

## Features

### **4.1 Key Functionalities**

* Real-time stock updates.
* Multi-location inventory tracking.
* Barcode integration for product identification.
* Role-based access control.

### **4.2 Innovative Aspects**

* Demand forecasting.
* Integration with e-commerce platforms.
* Automated reorder point alerts.
* Secure data encryption and compliance support.

## Business Logic

### **5.1 Description of Core Logic**

The system leverages database management to ensure accurate inventory tracking and integrates with third-party platforms for seamless operations.

### **5.2 Problem-Solving Approach**

* Automating stock updates.
* Generating insightful analytics for demand forecasting.
* Implementing secure and scalable system architecture.

## Implementation

### **8.1 Development Process**

The project followed an Agile methodology with iterative development cycles.

### **8.2 Screenshots of all User Interfaces**

Screenshots of modules such as Dashboard, Product Management, and Reports.

### **8.3 Tools and Technologies Used**

* Programming Language: C#, SQL.
* Frameworks: .NET Core, Entity Framework.
* Tools: Visual Studio, Microsoft SQL Server.

### **8.4 Challenges and Solutions**

Challenges such as data synchronization and their corresponding solutions are documented.

## Conclusion and Results

### **9.1 Project Outcomes Summary**

The project successfully met its objectives, delivering a robust and user-friendly inventory management system.

### **9.2 Comparison of Objectives and Results**

All primary goals were achieved, and the system exceeded expectations in scalability and integration.

### **9.3 Future Enhancements**

* Mobile app integration.
* AI-driven demand forecasting.
* Multi-language support

## References

### **10.1 Cited Resources**

* Documentation from Microsoft SQL Server.
* Tutorials on .NET Core development.

### **10.2 Further Reading**

* Inventory Management best practices.
* Advances in cloud-based inventory systems.

## Flowchart

### **Overview of IMS Workflow**

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**| Product Management| -----> | Inventory Tracking| -----> | Reporting & Analytics|**

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**| Order Management | -----> | Stock Movement | -----> | User Management |**

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