JSS MAHAVIDYAPEETA

JSS SCIENCE AND TECHNOLOGY UNIVERSITY

SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING

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DESIGN DOCUMENTATION ON
BUSINESS ANALYSIS SYSTEM WITH CUSTOMER RELATIONSHIP MANAGEMENT.

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INTRODUCTION

The introduction section provides an overview of the software being discussed, including its purpose, scope, and a general overview. Here's an example of an introduction for a software application called "Sharity":

PURPOSE: This software design document describes the architecture and system design of the Goods Stock Analysis and Management system with CRM functionality. It aims to provide a comprehensive overview of the system design for development and maintenance purposes.

SCOPE: The Goods Stock Analysis and Management system with CRM is designed to track and manage inventory stock levels, analyze goods sales data, and provide customer relationship management capabilities. The system's goals include optimizing stock levels, improving sales forecasting, and enhancing customer satisfaction. The benefits of the system include increased efficiency in inventory management, improved decision-making based on data analysis, and better customer engagement

OVERVIEW:

This document provides an overview of the system design and its organization. It includes sections on system architecture, data design, component design, human interface design, requirements matrix, and appendices.

1. System Architecture: The system architecture section describes the high-level structure and organization of the Goods Stock Analysis and Management system with CRM. It outlines the major subsystems and their responsibilities, as well as how they collaborate to achieve the desired functionality. This section may include diagrams illustrating the relationships between subsystems and data repositories.

2. Data Design: The data design section focuses on how the information domain of the system is transformed into data structures. It describes how the major data entities or system entities are stored, processed, and organized within the system. It may include details about databases or data storage items used in the system.

3. Component Design: The component design section delves into a more detailed description of each component or module within the system. It provides a systematic explanation of what each component does and how it contributes to the overall system functionality. This section may include algorithm summaries, procedural descriptions, or pseudocode for each 4 function or object within the system.

4. Human Interface Design: The human interface design section focuses on the user interface of the system. It describes the functionality of the system from the user's perspective and explains how users will be able to interact with the system to perform tasks and access features. This section may include an overview of the user interface, screen images or illustrations, and discussions on screen objects and associated actions.

5. Requirements Matrix: The requirements matrix section provides a cross-reference that traces system components and data structures to the functional requirements outlined in the Software Requirements Specification (SRS) document. It shows how each functional requirement is satisfied by specific system components. This section helps ensure that all requirements are addressed and implemented within the system.

6. Appendices: The appendices section includes additional supporting details that may aid in the understanding of the Software Design Document. It may contain detailed diagrams, algorithms, or references that provide further information and clarification on specific aspects of the system design. By providing an overview of these sections, stakeholders, developers, and other readers of the document can gain a comprehensive understanding of the structure, design, and organization of the Goods Stock Analysis and Management system with CRMs.

SYSTEM OVERVIEW

The goods stock and business analysis management system with CRM is a comprehensive solution that integrates inventory management, sales analysis, and customer relationship management into a single platform. This allows businesses to efficiently manage goods stock while gaining insights into sales performance and customer interactions.

At its core, the system includes a robust inventory management module with real-time tracking, automated stock replenishment, and efficient order management. Effectively managing stock levels helps minimize stockouts, avoid overstocking, and optimize supply chain processes.

The system also features a powerful business analysis component, providing analytical tools and reports for sales trends, product performance, and customer preferences. This enables data-driven decisions, identifies growth opportunities, and improves overall operational efficiency.

Furthermore, the CRM functionality plays a crucial role in managing customer relationships and enhancing satisfaction. It captures and stores customer information for personalized interactions, targeted marketing, and exceptional customer service. The CRM module also supports lead management, opportunity tracking, and customer support, nurturing leads and maintaining strong customer relationships.

The integration of these features in one system offers a holistic view of business operations, promoting seamless data flow between departments, reducing manual effort, and eliminating data silos. The system is scalable and customizable to adapt to specific business needs.

In summary, this comprehensive solution empowers businesses to effectively manage inventory, analyze sales performance, and nurture customer relationships, optimizing operations, driving growth, and delivering exceptional customer experiences.
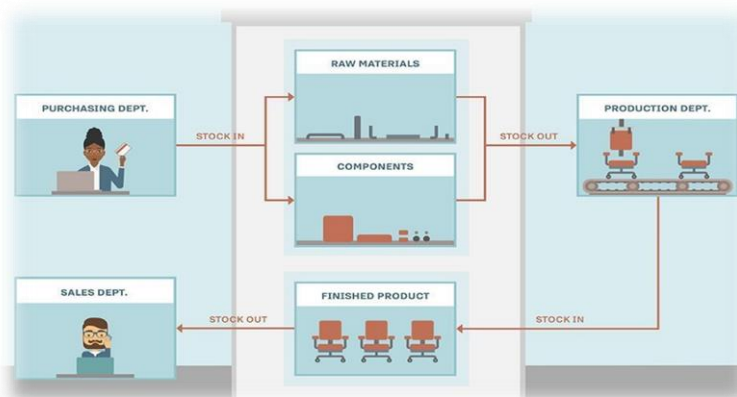
SYSTEM ARCHITECTURE

Architectural Design:

A comprehensive system architecture for goods and stock management, business analytics, and customer relationship management (CRM) typically consists of several interconnected components. Here's a high-level overview of such an architecture:

 1. **User Interface (UI) Layer: - Web or mobile application interfaces for users to interact with the system. - Provides access to various features, such as inventory management, sales tracking, CRM functionalities, and analytics dashboards.**

2. **Application Layer: - Manages the business logic and processes of the system. - Handles user requests, data processing, and integration with external services.**

3. **Goods/Inventory Management: - Tracks and manages the inventory of goods. - Features include product catalog management, stock tracking, replenishment, and order fulfillment. - Integration with suppliers, logistics providers, and e-commerce platforms may be necessary.**

4. **Customer Relationship Management (CRM): - Manages customer data and interactions. - Features include customer profile management, contact history, communication tracking, and lead/opportunity management. - Integration with marketing automation tools, customer support systems, and communication channels (email, chat, social media) may be required.**

5. **Business Analytics: - Collects and analyzes data from various sources within the system. - Generates reports, dashboards, and visualizations for data-driven insights. - Key metrics might include sales performance, inventory turnover, customer acquisition, and retention rates.**

 6. **Data Storage: - Database or data storage systems to store and retrieve structured and unstructured data. - Can include a combination of relational databases, NoSQL databases, data lakes, and data warehouses. - Ensuring data integrity, security, and scalability is crucial.**

7. **Integration and APIs: - Integration with external systems, such as e-commerce platforms, payment gateways, shipping providers, and marketing**

tools. - Application Programming Interfaces (APIs) facilitate data exchange and interoperability between different systems.

8. **Security and Authentication:** - **Implementing user authentication, access control, and encryption mechanisms to protect sensitive data. - Regular security audits and monitoring to ensure system safety**

9. **Scalability and Performance:** - **Designing the system to handle growing data volumes, user traffic, and concurrent operations. - Utilizing scalable infrastructure, load balancing, and performance optimization techniques.**

10. **Infrastructure:** - **Hardware and software infrastructure to host and run the system. - Can include cloud-based platforms, virtual machines, containers, or on-premises servers.**

DECOMPOSITION DESCRIPTION:

The goods stock and business analysis management system with CRM can be decomposed into several components:

1. **Inventory Management Module**: Handles stock tracking, stock replenishment, and order management.

2. **Business Analysis Module**: Collects and analyzes data to generate reports and insights on sales performance.

3. **CRM Module**: Manages customer data, lead tracking, opportunity management, and customer support.

4. **Integration Middleware**: Facilitates data integration and workflow orchestration between different components and external systems

Design Rationale:

The design rationale for the goods stock and business analysis management system with CRM can be summarized as follows:

1. **Integration:** The system integrates goods stock management, business analysis, and CRM functionalities into a unified platform to streamline operations and avoid data silos.

2. **Data-driven Decisions:** The design emphasizes providing data-driven insights through advanced analytics, empowering businesses to make informed decisions and identify growth opportunities.

3. **Seamless Information Flow:** The integration middleware enables real-time data exchange, accurate inventory tracking, and synchronized customer data, reducing manual effort and enhancing operational efficiency.

4. **Customer Relationship Management:** The CRM module facilitates effective customer relationship management, enabling personalized experiences, targeted marketing, lead nurturing, and excellent customer support.

5. **Scalability and Adaptability:** The system is designed to handle large data volumes and high user concurrency, with scalability measures ensuring optimal performance and responsiveness
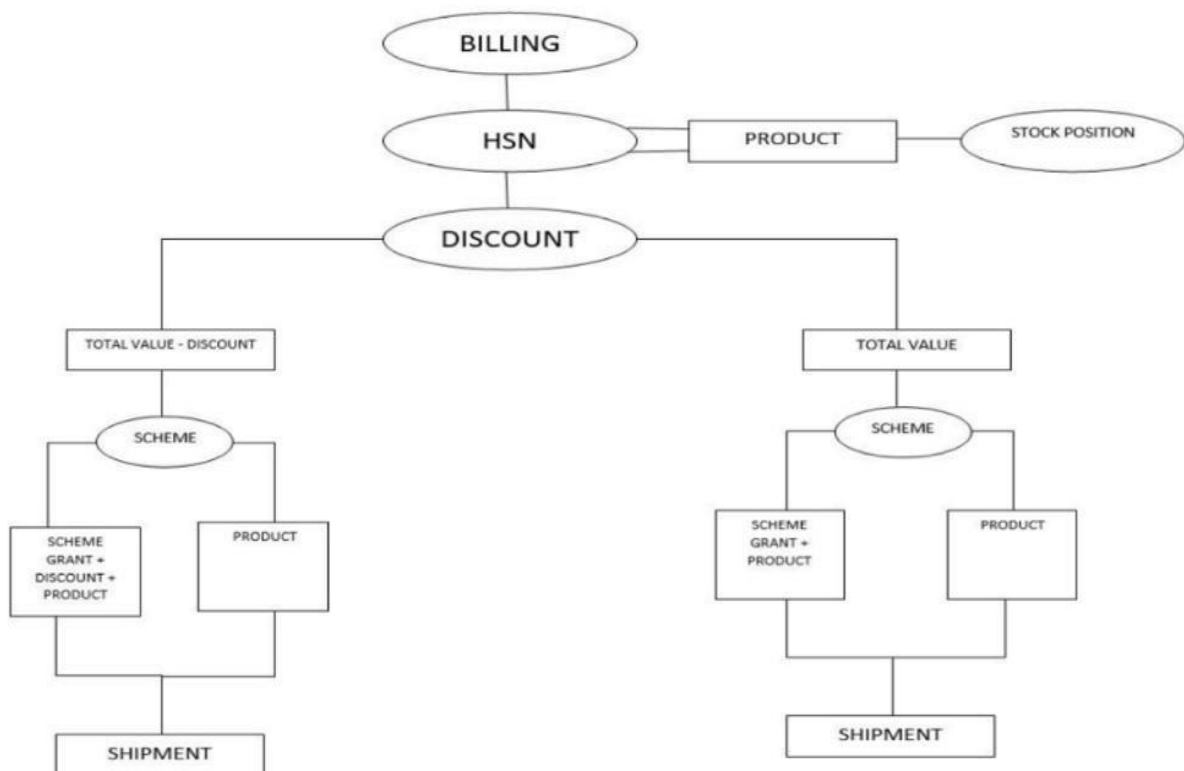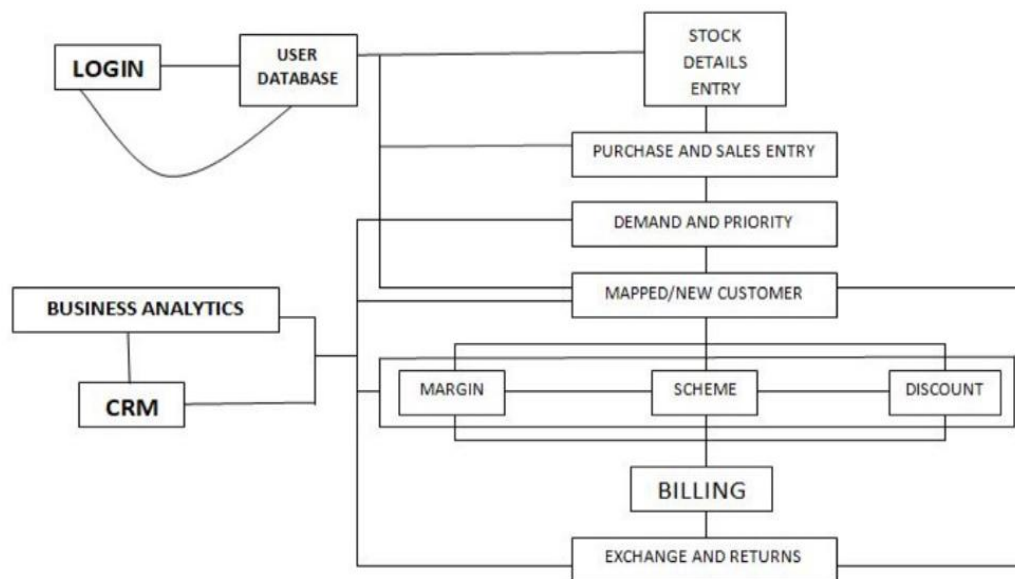
6. Security and Data Protection: The security layer safeguards user data and system integrity through authentication, access control, data encryption, and prevention of unauthorized access.
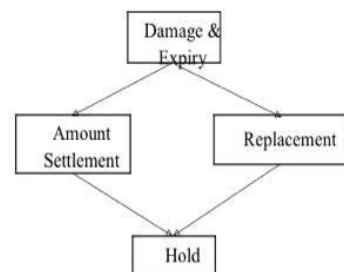
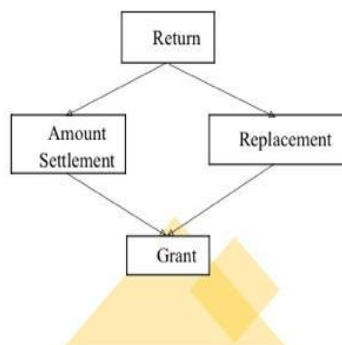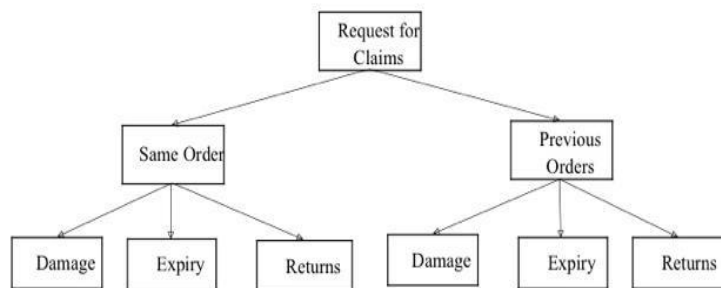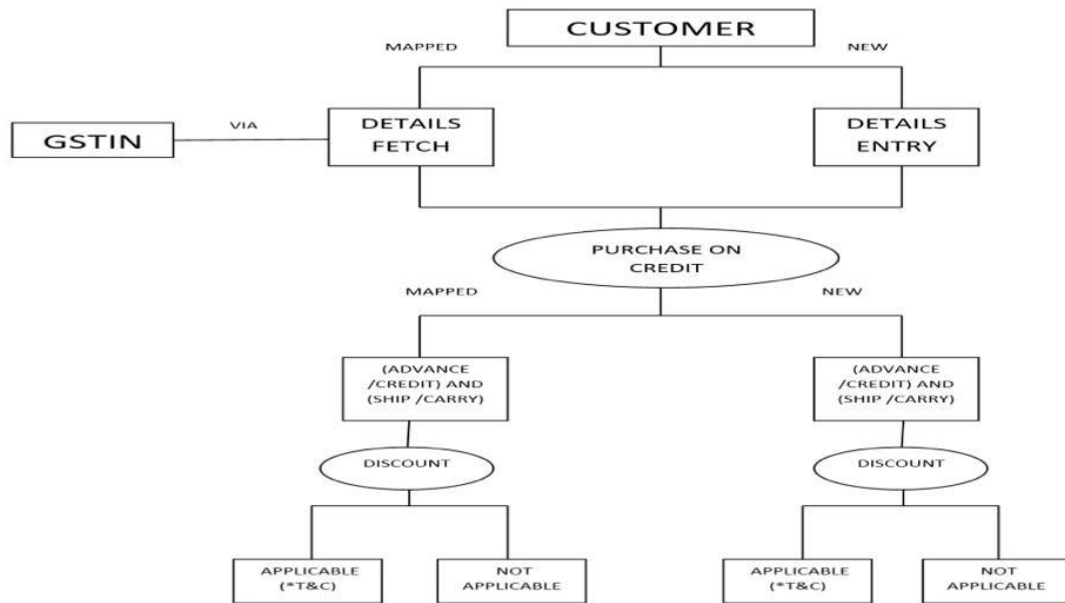**7. User-friendly Interface:** The user interface is intuitive, customizable, and adheres to best practices for user experience, ensuring easy navigation, task execution, and data visualization.
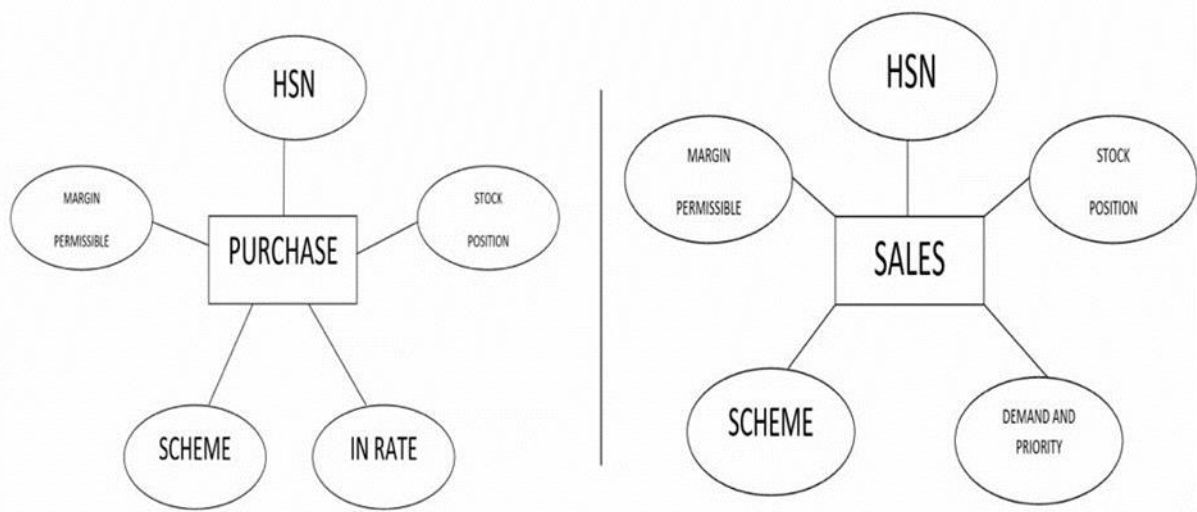
8. Modularity and Reusability: The system's modular components promote code reusability, maintainability, and ease of future enhancements and updates.
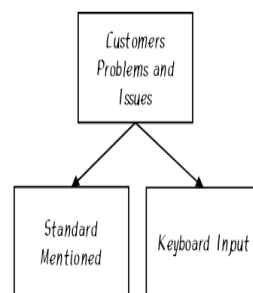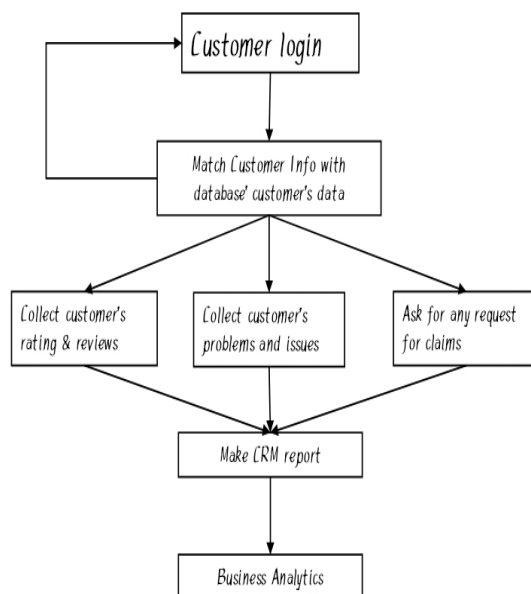
DATA FLOW DESIGN

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         MAPPED                              NEW
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  │ GSTIN │─────│    FETCH     │       │    ENTRY     │
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                   Request for
                     Claims
        Same Order                  Previous
                                     Orders
   Damage    Expiry   Returns   Damage   Expiry   Returns
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        Return                          Damage &
                                         Expiry
  Amount          Replacement     Amount          Replacement
Settlement                      Settlement
        Grant                            Hold
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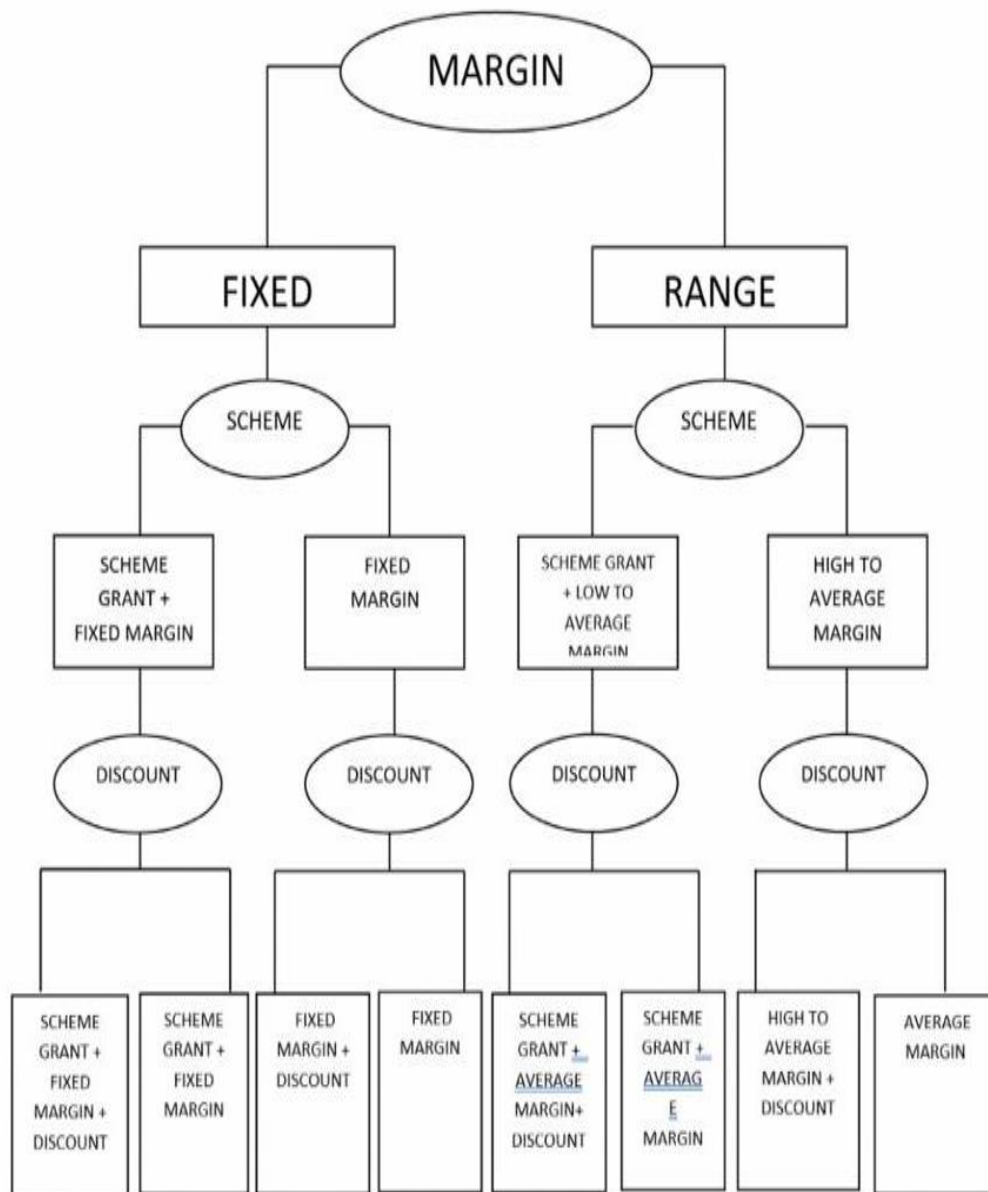
Customer Relationship Management

COMPONENT DESIGN

The system consists of three key components:

1. Goods/Inventory Management:

   - Manages product catalog with details like names, descriptions, prices, and images.

   - Tracks stock quantity and locations across multiple warehouses.

   - Facilitates stock replenishment and procurement based on predefined thresholds.

   - Handles order fulfillment, including picking, packing, shipping, and tracking.

2. Customer Relationship Management (CRM):

   - Manages customer profiles with contact info, purchase history, and preferences.

   - Tracks customer interactions through various channels.

   - Manages leads and opportunities in the sales pipeline.

   - Plans, executes, and tracks marketing campaigns.

3. Business Analytics:

   - Collects and integrates data from different sources.

   - Provides reporting and customizable dashboards for KPIs and metrics.

   - Utilizes statistical and analytical techniques for data insights.

   - Empowers users with actionable insights for decision support.

Together, these components create a comprehensive system for efficiently managing goods, analyzing business performance, and enhancing customer relationships. The seamless integration and interaction between these components enable data-driven decision-making and facilitate business growth.

REQUIREMENT MATRIX

Requirement	Description
User Authentication	Users should be able to securely authenticate and access the system with appropriate roles and permissions.
Goods/Inventory Management	The system should allow creating and managing a catalog of goods, tracking stock levels, and initiating stock replenishment.
Order Management	The system should handle the processing and fulfillment of customer orders, including order tracking and status updates.
Supplier Management	The system should enable managing relationships with suppliers, including supplier information, pricing, and communication.
Warehouse Management	The system should support tracking goods across multiple warehouses or storage locations, including transfers and stock movements.
Sales and Revenue Tracking	The system should provide functionality to track sales transactions, revenue, and associated metrics.
Customer Profile Management	The system should store and manage customer data, including contact information, purchase history, and preferences.
Lead and Opportunity Management	The system should support tracking and managing leads and opportunities through the sales pipeline, including assigning tasks and monitoring progress.
Marketing Campaign Management	The system should enable planning, executing, and tracking marketing campaigns, including email marketing and lead nurturing.
Communication Tracking	The system should record and track customer interactions across different channels, such as emails, phone calls, and chats.
Reporting and Dashboards	The system should provide pre-built and customizable reports and dashboards to visualize key performance indicators (KPIs) and metrics.
Data Analysis and Insights	The system should include analytical capabilities to uncover patterns, trends, and insights from collected data.
Integration with External Systems	The system should integrate with external systems such as e-commerce platforms, payment gateways, and marketing automation tools.
Security and Data Privacy	The system should ensure data security, user authentication, and comply with relevant data privacy regulations.
Scalability and Performance	The system should be scalable to handle increasing data volumes, user traffic, and concurrent operations.
User-Friendly Interface	The system should provide an intuitive and user-friendly interface for easy navigation and efficient task execution.
Mobile Access	The system should support mobile access, allowing users to perform tasks on-the-go using smartphones or tablets.
Data Backup and Recovery	The system should have mechanisms in place for regular data backups and the ability to recover data in case of system failures.
Customization and Flexibility	The system should offer flexibility for customization to adapt to specific business needs and workflows.

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