**SULTAN KUDARAT STATE UNIVERSITY**

**COLLEGE OF COMPUTER STUDIES**

**BACHELOR OF SCIENCE IN INFORMATION SYSTEMS**



**PROJECT PROPOSAL**

**Inventory Management System**

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**1ST SEMESTER | A.Y. 2023 -2024**

**INTRODUCTION**

# Overview

The inventory system is a methodical way of organizing, managing, and tracking a company's goods and materials. It's designed to streamline operations, reduce costs, and ensure that products are available when needed. Here's an overview of the components and functions of an inventory system

# Components of an Inventory System

# Inventory Tracking Software:

* This system serves as a centralized repository for comprehensive inventory data encompassing item descriptions, quantities, locations, and corresponding values. Its functionalities often incorporate automated tracking, reporting, and analytical capabilities.

# Barcoding/RFID:

* Utilizes distinctive markers such as QR codes or NFC tags to individually categorize items, facilitating streamlined monitoring and organization.

# Inventory Categories:

* **Raw Materials:** Components used in manufacturing.
* **Work-in-Progress (WIP):** Goods in various stages of production.
* **Finished Goods:** Completed products ready for sale.
* **MRO (Maintenance, Repair, and Operations):** Supplies necessary for operations but not directly tied to the end product.

# Supplier Management:

* Oversees and maintains supplier connections to ensure prompt restocking, uphold quality standards, and optimize expenses.

# Order Management:

* Handles purchase orders, sales orders, and reordering triggers based on predefined thresholds.

# Warehouse Management:

* Organizes the physical storage and movement of inventory within warehouses or storage locations.

# Inventory Control Policies:

* Define rules for inventory levels, reorder points, safety stock, and economic order quantity to optimize stock levels while minimizing costs.

# Functions of an Inventory System:

* **Demand Forecasting:** Uses historical data and market trends to predict future demand, aiding in inventory planning.
* **Replenishment:** Initiates orders to replenish stock based on predefined triggers (e.g., reaching a reorder point).
* **Stock Optimization:** Balances inventory levels to prevent stockouts while minimizing excess inventory and associated holding costs.
* **Inventory Valuation:** Calculates the total value of inventory based on various valuation methods (FIFO, LIFO, etc.) for financial reporting.
* **Reporting and Analysis:** Generates reports on inventory turnover, stockouts, trends, and other key performance indicators (KPIs) to make informed business decisions.
* **Quality Control:** Monitors and ensures the quality of incoming and existing inventory items.

# Benefits of an Inventory System:

# Queue-based Optimization

# Improved Efficiency: Reduces manual errors, streamlines processes, and optimizes stock levels.

# Cost Savings: Minimizes excess inventory, carrying costs, and stockouts.

# Enhanced Customer Service: Ensures products are available when customers need them.

# Better Decision-Making: Provides data-driven insights for strategic planning and forecasting.

# Scenarios:

# Conclusion:

Businesses rely on the inventory system as a pillar because it provides an organized method for organizing, tracking, and maximizing their supplies and products. Its constituent parts include order and supplier management, classification techniques, tracking software, and policies that specify inventory levels and controls. All of these parts work together to power a number of operations, including reporting, quality control, stock replenishment, demand forecasting, and valuation. Numerous advantages are brought about by the system, such as increased productivity, reduced expenses, better customer support, and data-driven decision-making. Essentially, it is an essential tool for companies looking to meet client needs while streamlining processes, cutting expenses, and guaranteeing a smooth flow of products.

# Visual Diagram of the Program