**Enterprise Resource Planning System for Emjude Sobolo**

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**COMPANY NAME: EMJUDE SOBOLO**

**Course Title:** INFT 417: ERP Systems (Mini Semester Project)

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**SYSTEM DESIGN DOCUMENT FOR EMJUDE SOBOLO**

**1.0 Introduction**

**1.1 Purpose**

The purpose of this System Design Document (SDD) is to provide a detailed overview of the ERP system designed for Emjude Sobolo, a company specializing in the production of drinks, biscuits, cakes, meat pie, and cookies. The document outlines the system’s architecture, key modules, and functionalities to ensure the ERP solution enhances operational efficiency, quality control, and overall business performance. The SDD serves as a blueprint for system developers, project managers, business analysts, and other stakeholders involved in the design, development, and deployment of the ERP system.

**1.2 Scope**

The ERP system for Emjude Sobolo covers various business processes essential to the production and sale of food and beverage products. The system integrates and optimizes operations related to inventory management, production planning, sales, procurement, finance, human resources, and reporting. By unifying these processes, the ERP system aims to enhance productivity, quality, and customer satisfaction.

**1.3 Audience**

This SDD is intended for:

* **System Developers:** For understanding the system’s architecture and module interactions.
* **Project Managers:** For overseeing the project’s execution and ensuring alignment with business goals.
* **Business Analysts:** For ensuring the system meets organizational needs.
* **Quality Assurance Engineers:** For validating that the system functions as intended.
* **End Users:** For those who will interact with the ERP system daily.
* **IT Support and Maintenance Teams:** For ongoing system support.
* **Executives and Senior Management:** For strategic decision-making.
* **External Consultants:** For providing specialized expertise.

**2.0 System Architecture**

The ERP system for Emjude Sobolo employs a modular architecture to manage various business processes seamlessly. The system architecture includes:

1. **Core Modules:**
   * Inventory Management
   * Production Planning and Control
   * Sales and Order Processing
   * Purchasing and Supplier Management
   * Finance and Accounting
   * Human Resources Management
2. **Data Layer:** Manages and consolidates data from various sources to ensure consistency and integrity.
3. **Integration Layer:** Connects the core modules with external systems, such as CRM and supply chain management tools.
4. **Presentation Layer:** Provides an interactive dashboard for monitoring and analyzing key performance indicators (KPIs) relevant to the business.

**3.0 Modules**

**3.1 Inventory Management**

The **Inventory Management module** is a pivotal system designed to effectively oversee and optimize the tracking and management of both raw materials and finished products throughout the supply chain. By utilizing advanced inventory management techniques, this module ensures that stock levels are meticulously monitored, thereby minimizing the risks associated with overstocking or stock outs, which can negatively impact production and sales operations.

**Key features** of this module include real-time inventory tracking, which delivers immediate visibility into the current stock levels, locations, and status of all goods. The system is equipped to automatically generate reorder alerts based on predefined thresholds, ensuring that essential materials are replenished promptly and preventing any interruptions in production. Furthermore, it seamlessly integrates with the order management system, streamlining the processing of incoming orders to ensure product availability and timely fulfillment of customer demands.

The Inventory Management module also incorporates robust inventory forecasting capabilities. By leveraging historical data and applying predictive analytics, the system can accurately anticipate future demand, allowing for strategic adjustments to inventory levels. This proactive approach not only reduces holding costs but also mitigates the risk of waste due to spoilage or obsolescence, ultimately optimizing overall inventory turnover rates.

**3.2 Production Planning and Control**

The Production Planning and Control module is a vital component designed to ensure the efficient and seamless management of the entire production process for drinks, biscuits, cakes, meat pies, and cookies. This module plays a crucial role in orchestrating all aspects of production, including resource allocation, scheduling, and quality assurance, to guarantee that operations are not only well-organized but also optimized for maximum productivity and cost-effectiveness.

This module offers comprehensive production planning capabilities by analyzing demand forecasts, resource availability, and production capacities to develop detailed production schedules. By synchronizing these schedules with inventory levels and supply chain activities, the module ensures that production flows smoothly and that the right products are produced at the right time and in the correct quantities. Additionally, it features robust resource management tools that optimize the use of materials, labor, and equipment, thereby preventing delays and avoiding bottlenecks in the production line.

A key aspect of this module is its integration of stringent quality control measures at every stage of the production process. These quality checks ensure that each batch of products meets predefined standards for safety, quality, and consistency, thereby enhancing customer satisfaction and minimizing waste and rework, leading to significant cost savings.

Furthermore, the Production Planning and Control module supports real-time monitoring and reporting, offering complete visibility into ongoing production activities. This functionality allows for rapid adjustments to be made in response to unexpected issues, such as equipment failures or fluctuations in demand, ensuring that production targets are achieved without compromising on quality or operational efficiency.

**3.3 Sales and Order Processing**

The Sales and Order Processing module is a critical component designed to manage, streamline, and optimize the entire sales cycle, ensuring that each step—from order placement to fulfillment and post-sales support—is executed with precision and efficiency. This module is essential for maintaining smooth operations, enhancing customer satisfaction, and driving revenue growth.

Central to this module is its ability to automate and manage sales transactions. It enables the accurate and timely processing of orders, allowing sales teams to efficiently capture customer orders, verify product availability, and generate sales confirmations. By integrating with inventory and production modules, the system ensures that order fulfillment is synchronized with stock levels and production schedules, minimizing delays and preventing stockouts.

Customer Relationship Management (CRM) is a key feature of this module, offering tools to track customer interactions, manage accounts, and maintain detailed records of customer preferences and purchase history. This functionality empowers the sales team to deliver personalized service, respond promptly to inquiries, and cultivate long-term client relationships. Additionally, the module supports marketing and promotional activities, aiding in lead generation, product upselling, and customer retention.

**3.4 Purchasing and Supplier Management**

The Purchasing and Supplier Management module is a vital component designed to optimize the procurement process and enhance supplier relationships, ensuring that the organization consistently acquires high-quality raw materials under the best possible terms. This module plays a crucial role in supporting production needs while maintaining cost-effectiveness and aligning procurement operations with the organization’s strategic goals.

At its core, this module automates and streamlines the procurement process, from requisition creation and approval to purchase order generation and supplier invoicing. By centralizing purchasing activities, it improves visibility and control over procurement expenditures, enabling more effective budget management and preventing overspending. The module also integrates with inventory and production systems, ensuring that purchasing decisions are driven by real-time demand and stock levels, thereby reducing the risk of material shortages or excess inventory.

Supplier management is a key focus of this module, providing tools to evaluate, onboard, and monitor suppliers. By maintaining a comprehensive database of supplier information, performance metrics, and contract details, the module ensures that the organization partners with reliable and high-performing suppliers who meet stringent quality and delivery standards. Regular assessments and feedback mechanisms facilitate continuous improvement in supplier performance, fostering stronger partnerships and ensuring long-term collaboration.

**3.5 Finance and Accounting**

The Finance and Accounting module is an essential component designed to manage the full spectrum of financial activities within the organization. From handling daily transactions to generating comprehensive financial reports, this module ensures that all financial operations are conducted with precision, transparency, and in compliance with regulatory standards.

This module is responsible for the accurate recording and processing of all financial transactions, including accounts payable, accounts receivable, payroll, and general ledger entries. By automating these processes, the system reduces the risk of human error, ensures timely processing of transactions, and maintains up-to-date financial records. The module integrates with other operational modules, such as Inventory Management and Purchasing, to ensure that financial data reflects real-time business activities, providing a comprehensive view of the organization’s financial health.

Financial reporting is a key function of this module, offering tools to generate a wide range of reports, from balance sheets and income statements to cash flow analyses and tax reports. These reports are crucial for stakeholders to assess the organization’s performance, make informed decisions, and comply with statutory requirements. The module’s reporting capabilities can be customized to meet the specific needs of different users, whether they are executives requiring high-level summaries or accountants needing detailed transaction records.

**3.6 Human Resources Management**

The Human Resources Management (HRM) module is a crucial component designed to efficiently manage all aspects of employee-related processes and information. This module plays a central role in streamlining HR operations, ensuring regulatory compliance, and supporting employee growth and satisfaction, contributing to the overall success of the organization.

The HRM module begins with recruitment and onboarding, automating and optimizing the hiring process. It enables HR teams to post job openings, manage applications, and track candidates through every stage of the recruitment pipeline. Once candidates are selected, the module facilitates seamless onboarding, ensuring that new hires are quickly integrated into the organization with all necessary documentation, training, and access to resources.

Employee information management is another key feature, with the module maintaining a comprehensive and up-to-date database of employee records, including personal details, job roles, performance history, and benefits. This centralized system allows HR teams to manage and access critical information efficiently, reducing administrative overhead and ensuring accuracy.

Performance management is a core function of the HRM module, providing tools for setting goals, conducting evaluations, and tracking employee progress. The system supports continuous feedback and development plans, helping managers and employees collaborate to achieve performance targets and career growth. This approach not only enhances productivity but also fosters a culture of accountability and recognition within the organization.

The module also manages payroll and benefits administration, automating salary calculations, tax deductions, and benefits processing. By integrating with time and attendance systems, the HRM module ensures that employees are paid accurately and on time while also managing benefits such as health insurance, retirement plans, and leave policies. Compliance with labor laws and regulations is built into the system, reducing the risk of legal issues and ensuring adherence to all relevant employment standards.

**3.7 Reporting and Analytics**

The Reporting and Analytics module is a powerful tool designed to provide comprehensive insights into organizational performance, enabling informed decision-making and driving continuous operational improvements. This module plays a crucial role in transforming raw data into actionable intelligence, supporting leaders and stakeholders in making data-driven decisions that align with the organization’s strategic goals.

At its core, the Reporting and Analytics module consolidates data from various sources across the organization, including sales, inventory, finance, human resources, and production. By integrating this data, the module generates a holistic view of the organization’s operations, allowing for in-depth analysis and cross-functional reporting. The module supports a wide range of report types, from standard operational reports to custom analytics dashboards tailored to specific business needs.

Advanced data visualization tools are a key feature of this module, enabling users to explore data through interactive charts, graphs, and tables. These visualizations simplify the identification of trends, patterns, and anomalies, facilitating quicker and more accurate decision-making. Whether tracking sales performance, monitoring inventory levels, or analyzing financial metrics, the module provides the clarity needed to understand complex data and uncover valuable insights.

**6.0 Conclusion**

This System Design Document (SDD) outlines the design of an ERP system tailored to manage the operations of Emjude Sobolo. The system ensures seamless integration across inventory, production, sales, procurement, finance, and human resources. It is designed to support the company’s growth, improve efficiency, and facilitate informed decision-making through real-time data visibility. The ERP system’s comprehensive and modular design equips Emjude Sobolo to adapt to changing business needs while maintaining a high level of operational excellence.