Finance and Inventory Module for Manufacturing Firm Using Blockchain

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Abstract-
This project presents a comprehensive framework for establishing a streamlined Quotation Master process tailored to the operations of Hindustan Tungsten Carbide. The proposed system encompasses four pivotal stages: Quotation Generation, Order Acceptance, Proforma Invoice Creation, and Tax Invoice Issuance. By seamlessly transitioning through these stages, Hindustan Tungsten Carbide can enhance its efficiency and accuracy in managing customer transactions and financial documentation. In the Quotation Generation phase, the organization will leverage an automated system that enables the rapid creation of precise and standardized quotations. This system will be integrated with a database containing up-to-date product and pricing information, ensuring consistency and minimizing errors. Once a quotation is accepted by the client, the process seamlessly moves to the Order Acceptance stage. Here, the organization will implement a centralized platform to capture and validate order details, facilitating a smooth transition from quotation to order. Upon successful order confirmation, the Proforma Invoice Creation phase comes into play. An automated mechanism will extract relevant order information and generate accurate proforma invoices, reflecting the agreed-upon terms and prices. This stage ensures transparency and aids in building customer trust through professional and accurate documentation. The Tax Invoice Issuance stage involves the creation and issuance of tax-compliant invoices. By incorporating taxation regulations and calculations into the system, Hindustan Tungsten Carbide can ensure adherence to legal requirements and minimize discrepancies. To further enhance its operational efficiency and internal processes, Hindustan Tungsten Carbide can integrate additional modules. The Inventory Management module will help the company keep real-time records of its inventory, reducing costs, and ensuring product availability information is accurate. The Attendance Module can track employee attendance, leave requests, and work hours, facilitating workforce management and compliance. Finally, the Salary Module can automate salary calculations, generate pay stubs, and ensure timely, error-free salary payments. By adopting this comprehensive framework, Hindustan Tungsten Carbide can establish a robust foundation for its financial transactions, inventory management, and workforce operations, ultimately leading to improved customer satisfaction and optimized internal operations

Key Words: HTC, Inventory, Salary, Attendance, Quotation Master.

INTRODUCTION

The current task acquaints an extensive system planned with change the functional cycles of Hindustan Tungsten Carbide. It centers around the making of an exceptionally proficient Citation Expert framework, carefully custom fitted to the particular necessities and tasks of the association. This proposed framework is coordinated into four fundamental stages, each consistently progressing into the following: Citation Age, Request Acknowledgment, Proforma Receipt Creation, and Duty Receipt Issuance. By executing this

structure, Hindustan Tungsten Carbide means to support productivity and accuracy in the administration of client exchanges and monetary documentation fundamentally.

In the Citation Age stage, the association will use a computerized framework that engages the fast making of exact and normalized citations. This framework will be firmly coordinated with a far reaching data set containing the most recent item and estimating data, consequently guaranteeing consistency and limiting mistakes. When a citation is acknowledged by the client, the interaction easily advances to the Request Acknowledgment stage. In this stage, the association will convey a concentrated stage to catch and approve request subtleties, subsequently working with a consistent progress from citation to arrange.

Upon fruitful request affirmation, the Proforma Receipt Creation stage becomes an integral factor. A computerized system will extricate the applicable request data and produce exact proforma solicitations that reliably mirror the settled upon terms and costs. This stage is essential in guaranteeing straightforwardness and cultivating client trust through proficient and precise documentation.

The Duty Receipt Issuance stage includes the creation and issuance of expense agreeable solicitations. By integrating tax collection guidelines and estimations into the framework, Hindustan Tungsten Carbide can ensure adherence to lawful necessities and limit inconsistencies, which is fundamental for the association's monetary trustworthiness.

Moreover, to upgrade its functional effectiveness and inward cycles significantly further, Hindustan Tungsten Carbide has the potential chance to incorporate extra modules. The Stock Administration module will help with keeping up with constant records of stock, consequently diminishing expenses and it is dependably cutting-edge to guarantee that item accessibility data. The Participation Module can tenaciously track representative participation, leave demands, and work hours, consequently working with powerful labor force the executives and guaranteeing consistence with work guidelines. At last, the Compensation Module can proficiently mechanize pay estimations, create pay hits, and guarantee reliable, mistake free compensation installments, upgrading generally worker fulfillment.

By embracing this comprehensive structure, Hindustan Tungsten Carbide can lay out a vigorous starting point for its monetary exchanges, stock administration, and labor force tasks, at last prompting raised consumer loyalty and the improvement of interior tasks. This undertaking's combination of creative arrangements vows to be a urgent move toward modernizing and improving the association's business processes..

OBJECTIVE OF SYSTEM

- To improve accuracy of existing
- To overcome and decrease the risk of financial loss
- Inventory Management
- Workforce Management

RISK ANALYSIS

- Data Security Breaches: There is a risk of data breaches or unauthorized access to sensitive customer and financial data. Mitigation strategies include robust encryption, access controls, regular security audits, and employee training.
- System Integration Challenges: Integrating various modules and ensuring seamless communication between them can be technically challenging
- Staff Training and User Adoption: Employees may have difficulty adapting to the new system, leading to inefficiencies. Address this risk through comprehensive training programs and user-friendly interfaces.
- Cost Overruns: The project may exceed the allocated budget due to unforeseen expenses or scope changes. Regular budget tracking and contingency planning can mitigate this risk.

LITERATURE SURVEY:

Marc Lambrecht; Nico Vandaele, " From ERP to Advanced Resource Planning: Improving Operational Performance by Getting the Inputs Right,"[1] 2007 - n this paper, we show that the planning and decision support capabilities of the MPC (Manufacturing Planning and Control) system, which forms the core of any ERP package, may be greatly enhanced by including an Advanced Resource Planning (ARP) module as an add-on at the midterm planning level. This ARP module enables to estimate the impact of variability,

complexity and dynamic system behavior on key planning parameters. As such, it yields realistic information both for short-term planning purposes and for reliable lead time quotations. We show how dynamic behavior impacts the operational performance of a manufacturing system, and discuss the framework for incorporating the ARP module into the ERP system.

Octa Karlina; Ari Yanuar Ridwan, " Designing Green Procurement System Based On Enterprise Resources Planning For The Rubber Processing Industry,"[2] 2019 – The rubber processing industry is one of the manufacturing industries that pay attention to every activity on its production process that occurs during rubber processing. The work done in the production process at manufacturing, such as the rubber processing industry, produces waste that harms the environment. Therefore, it is necessary to monitor business activities. In this study focuses on designing application based on Enterprise Resource Planning (ERP) by running a green procurement system therein. Green procurement provides solutions to the selection of materials and services that can minimize the impact on the environment and provide benefits for the company. In implementing of green procurement system, ISO 14000 standardization data to determine the green supplier and the green material attributes data are needed to use for the Key Performance Indicator (KPI) report. The ERP-based application can generate report Key Performance Indicator (KPI) for green materials and green suppliers to help the company to monitor business processes in green procurement. However, the process of measuring the percentage of green materials and green suppliers is out of the scope of the discussion in this study, because this study only provides designing an application to implement green procurement. The selection of application based on Enterprise Resources Planning (ERP) is due to an ERP system that can add and also update data and information without duplication so that it can improve employee efficiency in monitoring business process activities with data integration in application based on Enterprise Resources Planning (ERP).

Abdullah A. Al-Ghofaili; Majed A. Al-Mashari, " ERP system adoption traditional ERP systems vs. cloud-based ERP systems,"[3] 2014 - In this work, Several organizations, like small and medium enterprises (SMEs), are faced with the problem of implementing ERP systems in their organizations due to the fact that traditional ERP systems (Client-Server based ERP systems) could be unsuitable, could not be successful to implement or could even end into a disastrous initiative. This paper proposes three alternative approaches for organizations to select from based on security rate, investment level and organizational size. The paper introduces the cloud computing technology in order to represent new non-traditional approaches for ERP systems adoption. Finally, the paper addresses the comparisons between the three presented approaches

Xiaolin Xiao; Minpeng Xu, " A comparison of classification methods for recognizing single-trial ERP in RSVP-based brain-computer interfaces,"[4] 2019 - Event-related potentials (ERPs) are one of the most popular control signals for brain-computer interfaces (BCIs). Fast classifying ERPs is vital for the good performance of ERP BCIs. However, due to noisy background electroencephalography (EEG) environments, current ERP-based BCI systems need to collect multiple trials for a reliable output, which is inefficient. This study compared a recently developed algorithm, i.e. discriminative canonical pattern matching (DCPM), with five traditional classification methods, i.e. linear discriminant analysis (LDA), four advanced methods of LDA included stepwise LDA, Bayesian LDA, shrinkage LDA and spatial-temporal discriminant analysis (STDA), for the detection of single-trial ERPs with a small number of training samples. Public dataset from RSVP-speller, which would induce ERPs contained N200 and P300 components in ERPs, was addressed in this study. Study results showed that the DCPM significantly outperformed the other traditional methods in single-trial ERP classification in RSVP-based BCI even with small training samples, suggesting the DCPM is a promising classification algorithm for the ERP-BCI.

ALGORIHTM
- Step 1: User Authentication and Access Control: Users are required to authenticate themselves using a secure login process.
- Step 2: Module Inventory Management: Initialize and update the module inventory database with information on module quantities, stock levels, and locations.
- Step 3: Quotation Generation: Sales teams create detailed quotations by selecting products/services and specifying quantities.

- Step 4: Order Acceptance and Confirmation: Upon customer acceptance of the quotation, verify details and terms.
- Step 5: Proforma Invoice Generation: Generate a Proforma Invoice with a detailed cost breakdown, including product prices, taxes, and shipping charges.
- Step 6: Tax Invoice Issuance: After receiving payment, generate a Tax Invoice with all necessary legal and financial information for taxation purposes.
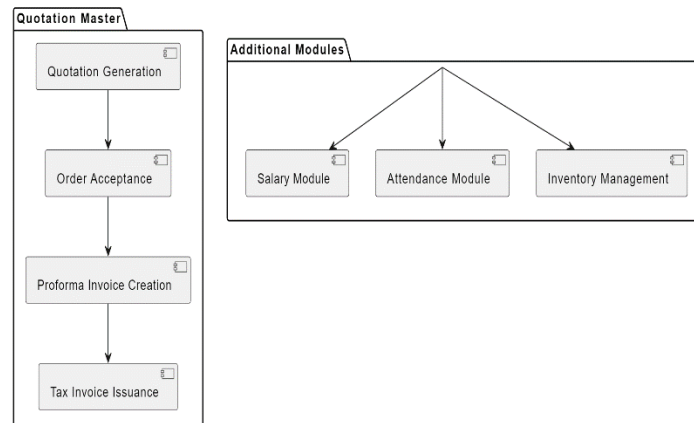
SYSTEM ARCHITECTURE

Fig -1: System Architecture Diagram

ADVANTAGES
- Easy to used system
- Control system from anywhere
- Centralized system
- Improved Efficiency
- Reduced Errors
- Enhanced Customer Satisfaction
- Legal Compliance
- Effective Inventory Management
- Streamlined Workforce Management
- Operational Optimization
- Financial Integrity
- Standardized Documentation
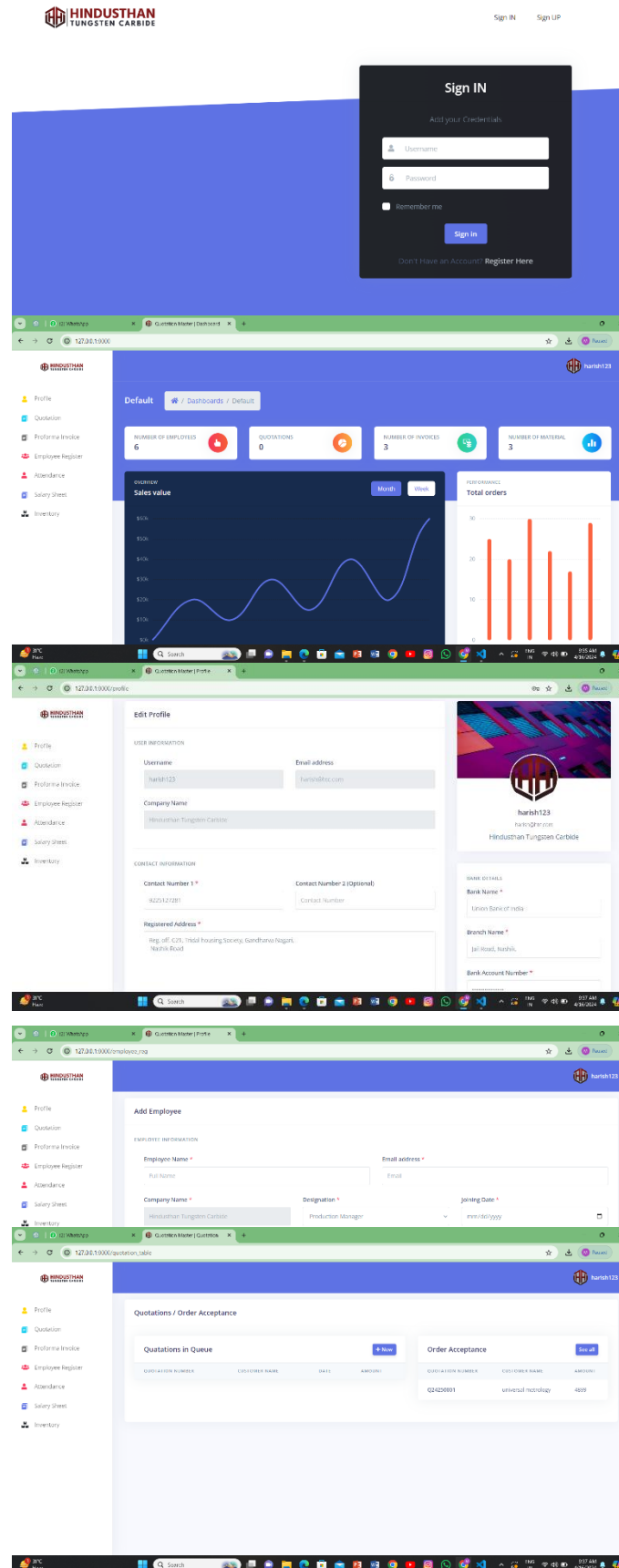- Cost Reduction
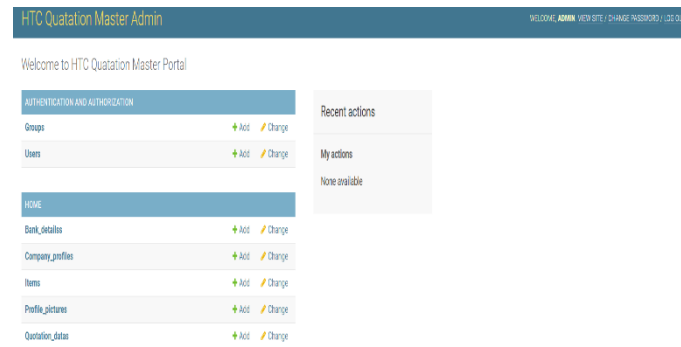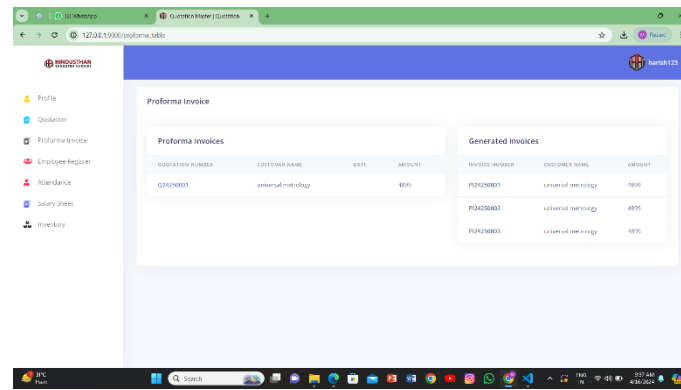
SYSTEM REQUIREMENTS
- **Software Used:**
1. Programming Language – Python
3. Database – SQLite
4. Tools – Visual Studio Code
5. Algorithm – SHA 256
- **Hardware Used:**
1.   Processor – i3 or above
2.   Hard Disk – 150 GB
3.   Memory – 4GB RAM

RESULT

CONCLUSION

In conclusion, the project offers a comprehensive solution to streamline business operations, enhance customer satisfaction, and optimize resource utilization. Through efficient quotation generation, automated inventory management, robust security measures, and data-driven insights, the project enables organizations to respond swiftly to customer needs, reduce operational costs, and make informed decisions. Moreover, it ensures compliance with legal requirements, safeguards sensitive data, and fortifies the organization's competitive position.

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