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On-Site Maintenance Services by Using Web 3.0 and React JS

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Abstract: ***This paper explores the impact of Web 3.0 and semantic web technologies on business, highlighting the potential for new business models to emerge.***
Web 3.0 represents a paradigm shift from an information-centric approach to a knowledge-centric one, allowing people and machines to connect, evolve, share and use knowledge on an unprecedented scale. The integration of semantic technologies in Web 3.0 has the potential to drive significant improvements in efficiency, cost reduction, enhanced effectiveness, and introduce new functionalities that were previously unfeasible. Through an analysis of the role and impact of Web 3.0 in business, this paper identifies nine potential business models that have emerged as a result of semantic web technologies. Preventive Maintenance also may cause unneeded repair of parts that still have remaining useful life. Condition Based Maintenance (CBM) is a proactive maintenance approach that takes into account the real conditions of the parts using sensors and then offers.
Web 3.0 and semantic web technologies have the potential to create value and drive the emergence of new business models, leading to increased competitiveness, improved customer experiences, and new revenue streams. As such, companies must remain aware of the potential opportunities and challenges presented by Web 3.0 and semantic web technologies, and adapt their strategies accordingly to remain competitive.
Keyword: Web 3.0, semantic web technologies, business models, knowledge-centric computing, revenue sources.

I. INTRODUCTION

A “Maintenance Services” is a term for a set of procedures that help businesses track the status of their means and set up both routine and emergency Preservation as Required. It frequently focuses on preventive rather than “break/fix” repairs to help keep costs down and minimize asset Time-Out.
One tools that is constantly used for automating maintenance scheduling is a maintenance Operation system (CMMS) software. This type of software helps track when varied substance were last maintained and schedules preventive Preservation at set intervals. When an asset reaches its assigned preventative maintenance deadline, a maintenance technician (or the company’s third-party maintenance service provider) will get an alert. Using software to track when various assets are due for repairs, fleet managers and others in charge of asset assignment can make sure that the asset is available to be maintained (ensuring maintenance doesn’t fall behind because the asset is being overused). This helps to increase overall uptime and ensure that assets can operate at peak efficiency.

II. RELATED WORK

The Design Compass involves developing a secure and efficient transaction system for Maintenance by using websites. The system aims to ensure secure, transparent, and tamper-proof transactions, enhancing customer trust and confidence. It will include a user-friendly interface and smart contract to automate transactions, reducing costs and increasing efficiency.
The project will develop a decentralized platform using distributed ledger technology to maintain accurate records and ensure scalability for a high volume of transactions. Overall, the project aims to provide a reliable and secure platform for transactions using cutting- edge technology.

A. Proposed Work

The proposed methodology makes use of both qualitative and quantitative perspectives, and includes a broad array of approaches such as literature reviews, expert opinions, focus groups, and content validation.

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B. Advantages of Propose System

The application is a Easy to use for any user (admin, customer).

1) User-friendly and simple to Use.
2) The Customer Android's Phone Can Also Access the Website.
3) The user can quickly See The Order Status.
4) Customers can Give the Feedback For the Services which He/she has avail.

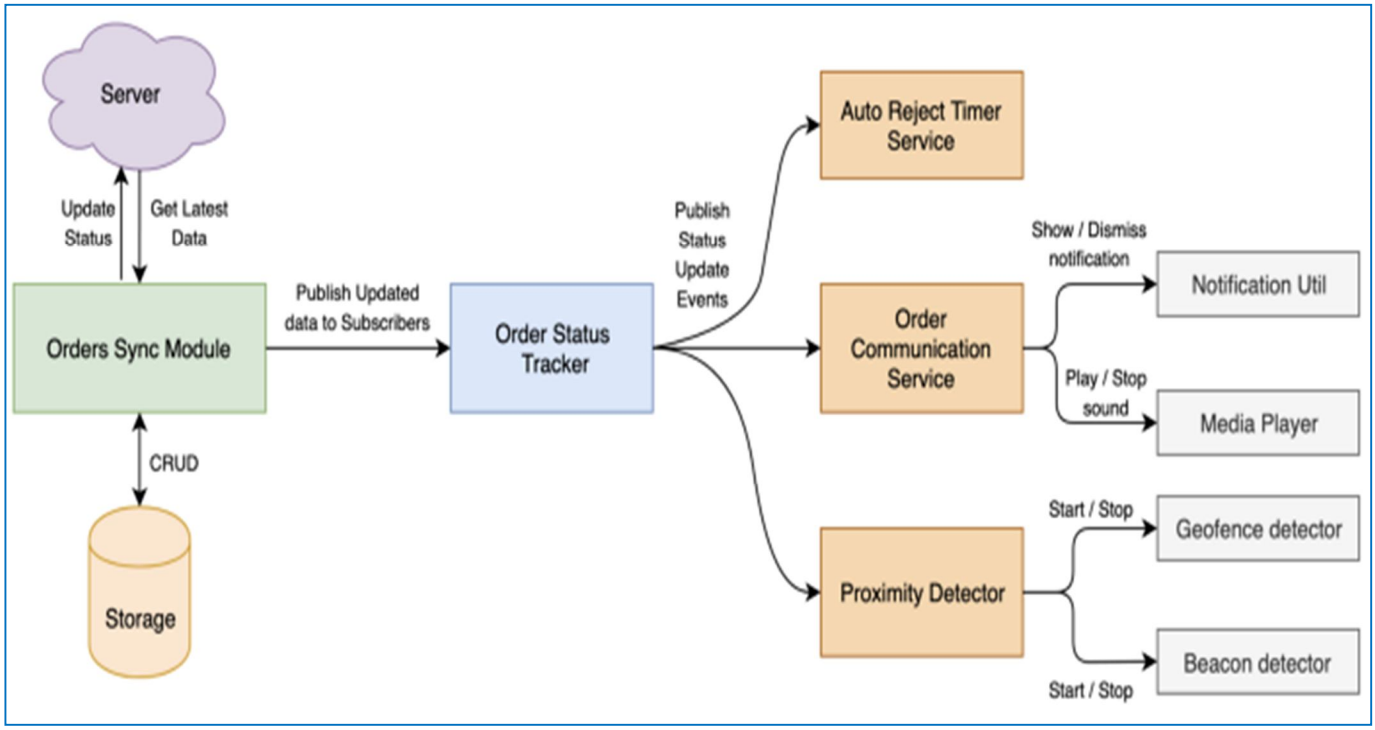


Fig 1: Block Diagram.

Block Diagram is the design and organization of a software system, including its components and interfaces. It ensures the system meets its requirements and is important in software development.

III. METHODOLOGY

Implementation of our project consists of following modules:

1) User Login / User Interface.
2) Communication Interface.
3) Admin Interface.

Here is a proposed methodology for the project to solve the problem of secure transactions on Maintanence sites using React JS and web 3.0:

a) *Literature Review:* Conduct a comprehensive literature review of existing research and publications related to JSON Token technology, web 3.0, ecommerce security, and secure transaction protocols to identify best practices and limitations.
b) *Identify Requirements:* Identify the functional and non-functional requirements of the Maintanence site, including user authentication, transaction security, and privacy concerns, to understand the specific needs of the system.
c) ***Design Architecture:*** Based on the requirements, design the architecture of the system, including the MONGO DB, smart contract logic, and user interface design.
d) *Develop Prototype:* Develop a prototype of the ecommerce site with basic functionality and integration with the MONGO DB to test the feasibility of the design.
e) *Test and Evaluate:* Conduct rigorous testing of the prototype to ensure the security, performance, and scalability of the system. Evaluate the results to identify areas for improvement and optimize the system

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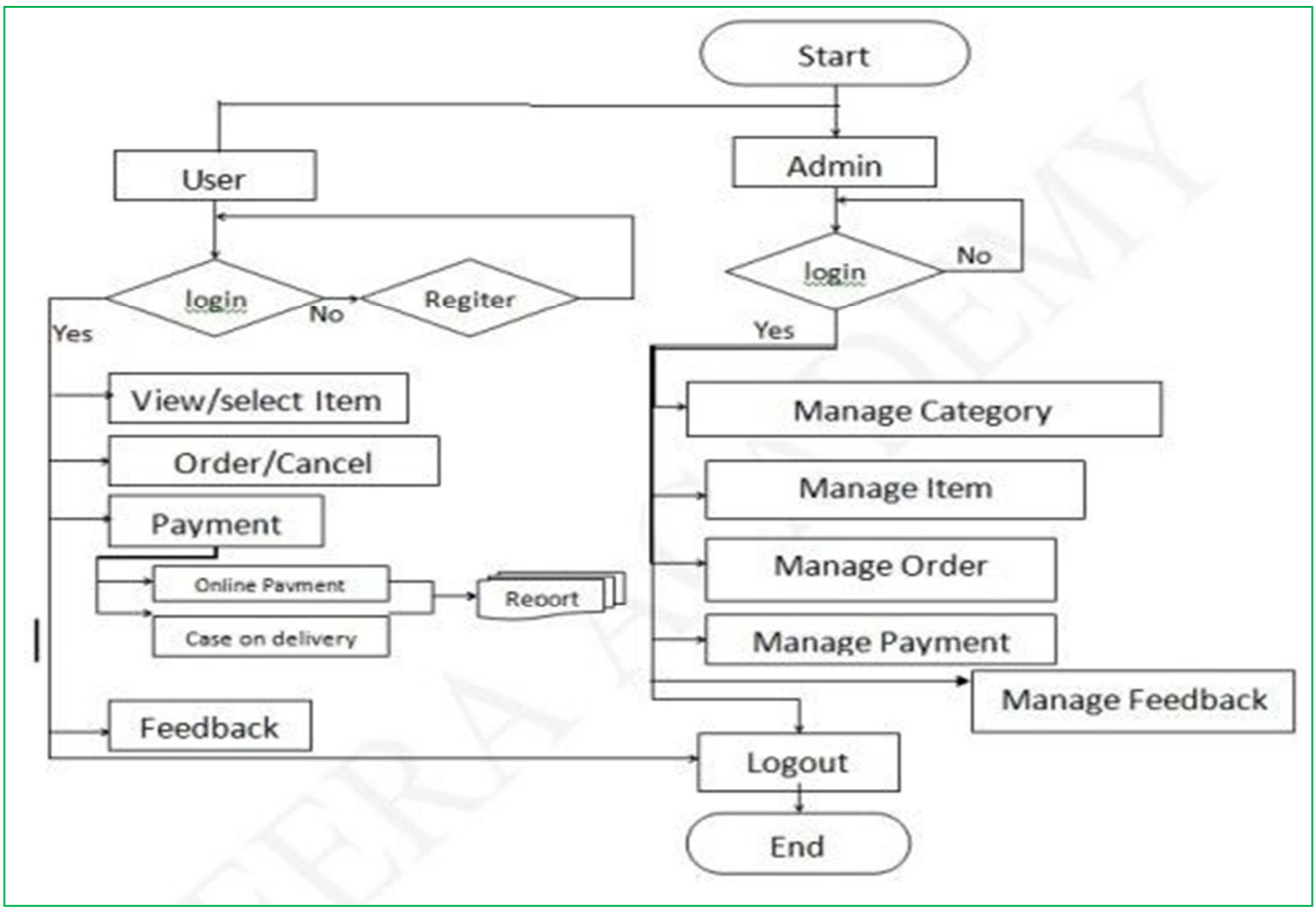


Fig -2: Work Flow

An overview of the concept of business models and their importance in modern strategic thinking, with a particular emphasis on the role of information and communication technologies. The text highlights two popular approaches to defining business models, as well as common elements that are central to most models.

A. System Design

1) Customer Registration: The process of registering a new customer in the system.
2) Customer Login: The process of logging in to the system by an already registered customer.
3) Product Search: The process of searching for a product by a customer.
4) Product Selection: The process of selecting a product for purchase.
5) Payment: The process of paying for the selected product using crypto currency or other digital payment methods.
6) Transaction Verification: The process of verifying the transaction through web 3.0.
7) Appointment Booked Status: The process of processing the Booked Status Of An Engineer.
8) Engineer Reached Status: The process of Engineer Reached To its Specified Location to the customer.
9) Service Completion Confirmation: The process of Confirming Whether the Service Which is ask By the Customer is Full-Fill.

B. Implementation

MongoDB provides various features, such as authentication, access control, encryption, to secure your MongoDB deployments. Some key security features include Authentication, Authentication, SCRAM, x.509. **Authentication: -**
Authentication is the process of verifying the identity of a client. When access control (authorization) is enabled, MongoDB requires all clients to authenticate themselves in order to determine their access. Although authentication and authorization are closely connected, authentication is distinct from authorization.

C. SCRAM

Salted Challenge Response Authentication Mechanism (SCRAM) is the default authentication mechanism for MongoDB. When a user authenticates themselves, MongoDB uses SCRAM to verify the supplied user credentials against the user's name, password and authentication database. SCRAM is based on the IETF RFC 5802 standard that defines best practices for the implementation of challenge-response mechanisms for authenticating users with passwords.

D. Role-Based Access Control

MongoDB does not enable access control by default. You can enable authorization using the -author the security authorization setting. Enabling internal authentication also enables client authorization. Once access control is enabled, users must authenticate themselves. on the network hides the true nature of the data. For this process, any input data gets through a mathematical algorithm that produces a different kind of value, but the length is always fixed.

E. Users and Roles

You can assign roles to users during the user creation. You can also update existing users to grant or revoke roles. For a full list of user management methods, see User Management A user assigned a role receives all the privileges of that role. A user can have multiple roles. By assigning to the user roles in various databases, a user created in one database can have permissions to act on other databases.

F. Storing Hash on Database JSON Web Token (JWT)

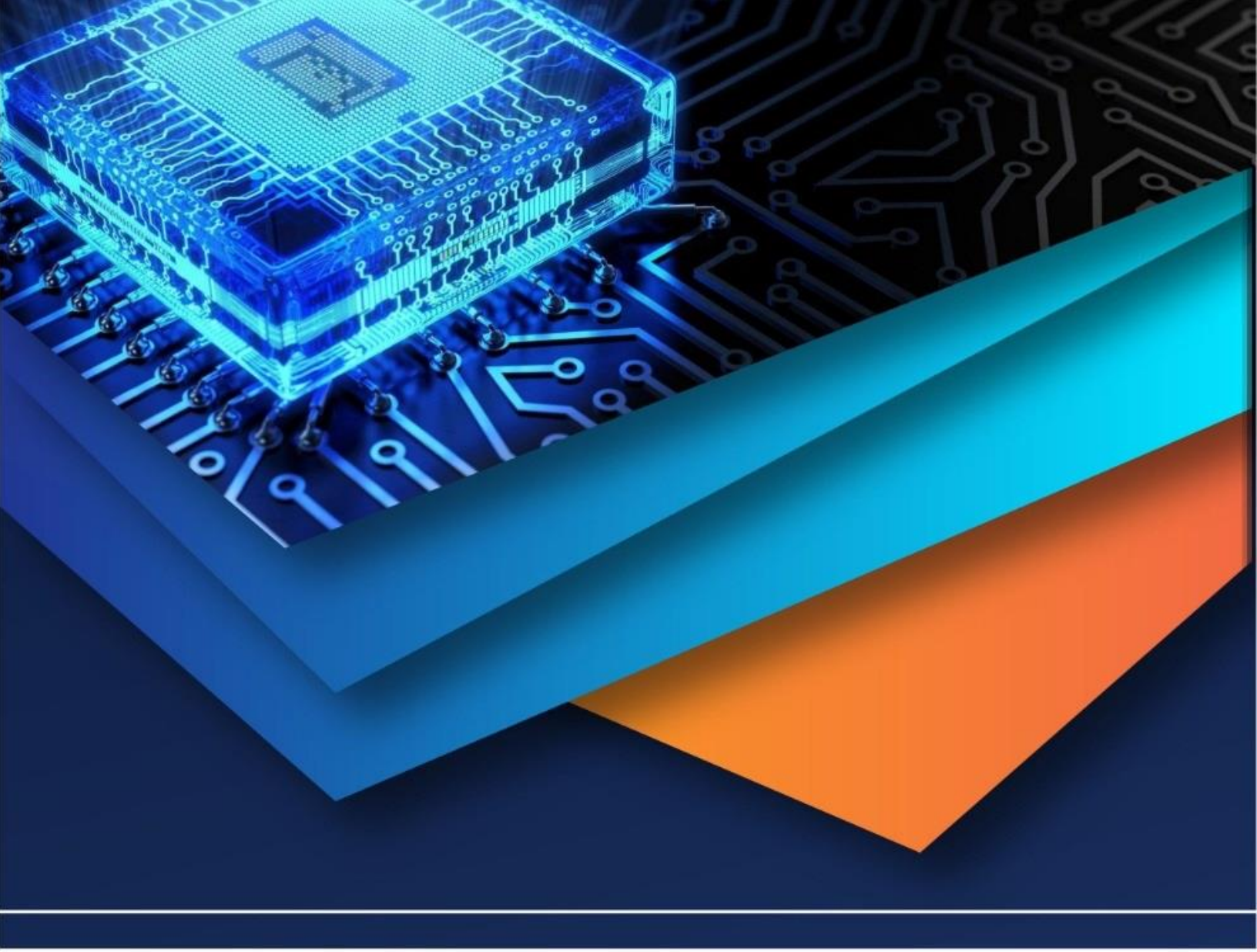
JSON Web Token (JWT) is an open standard (RFC 7519) that defines a compact and self-contained way for securely transmitting information between parties as a JSON object. This information can be verified and trusted because it is digitally signed. JWTs can be signed using a secret (with the HMAC algorithm) or a public/private key pair using RSA or ECDSA. Although JWTs can be encrypted to also provide secrecy between parties, we will focus on Signed tokens. Signed tokens can verify the integrity of the claims contained within it, while encrypted tokens hide those claims from other parties. When tokens are signed using public/private key pairs, the signature also certifies that only the party holding the private key**.**

IV. CONCLUSIONS

Online home-based services provided by skilled professionals are very useful to get all types of works like plumbing electrical, sanitary, carpentry works under one app with only a finger tap. The research study is based on the understanding of Maintanence services to provide online home-based services. The study is conducted to understand the Maintanence service quality influence on Customers. Maintanence Services is providing quality services. Maintanence services are enabling customers to benefit with easy life even in busy schedules. Company is providing home-based services with personal-hygiene by protecting the interests of the customers with reasonable charges. The study concludes that good awareness is created by Maintanence among public. The function of maintenance management is really important & maintenance is an activity that shall not be neglected otherwise consequences will be faced by your organization. That is why maintenance is essential however maintenance management needs some effective tool that can assist them in maintenance management optimization. A tool such as CMMS Software or maintenance management software is very helpful.

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