E-Commerce Medicine Website Deployed on AWS with Prescription Verification

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ABSTRACT:

An intelligent web-based system titled the E-Commerce Medicine Website with Prescription Verification is developed to provide a secure, reliable, and user-friendly platform for purchasing medicines online. Conventional online pharmacy systems often face challenges related to prescription validation, data security, and regulatory compliance. This project addresses these issues by integrating a robust prescription verification mechanism powered by AWS cloud services to ensure authenticity, secure data handling, and scalable performance. The system allows users to upload valid medical prescriptions, which are verified before enabling the purchase of restricted medicines. Built using a Python-based backend for business logic and AWS services for authentication. The system is suitable for applications such as online pharmacies, healthcare platforms, and digital medical services, promoting safe medicine distribution and enhancing trust in e-commerce healthcare solutions.

KEYWORDS:

E-Commerce Medicine Website, Online Pharmacy System, Prescription Verification, AWS Cloud Services, Secure Medicine Delivery, Medical E-Commerce, Authorization, Cloud-Based Healthcare Application, Scalable Web Platform.

INTRODUCTION:

In today's digitally driven era, online healthcare services have become an essential component of modern medical access, with e-commerce platforms playing a significant role in the distribution of medicines. This limitation can lead to unauthorized access to restricted medicines, compromised patient safety, and reduced trust in digital healthcare platforms. The *E-Commerce Medicine Website with Prescription Verification using AWS*

addresses these challenges by introducing a secure, cloud-based solution that integrates intelligent prescription validation with scalable e-commerce functionality. The primary objective of this project is to ensure safe and regulated online medicine distribution by incorporating prescription verification, secure authentication, and reliable data management using AWS services. By leveraging cloud infrastructure and a user-friendly web interface, the system enhances trust, accessibility, and efficiency in pharmaceutical services.

LITERATURE SURVEY

A literature survey examines existing research related to a project to understand prior developments, identify limitations, and justify how the proposed system offers improvements. In the domain of online pharmacy systems and healthcare e-commerce, several researchers have explored cloud-based platforms, secure authentication mechanisms, and digital prescription management to enhance accessibility and patient safety. Agarwal et al. (2021) proposed an online medicine delivery system that improved user convenience through web-based ordering, but lacked automated prescription validation, raising concerns about misuse of restricted drugs. Patel et al. (2022) introduced a cloud-enabled healthcare e-commerce platform utilizing AWS for scalability and data storage; however, the system relied on manual checks, resulting in delayed order processing.

RELATED WORK

The *E-Commerce Medicine Website with Prescription Verification using AWS* builds upon existing research in online pharmacy systems, cloud computing, and secure healthcare application development. Unlike traditional medicine e-commerce platforms that primarily focus on product listing and order placement, this project emphasizes secure prescription validation. The system adopts a web-based architecture using HTML, JavaScript, and Tailwind CSS to provide a responsive and user-friendly interface. A Python-based backend manages business logic, user requests, and verification workflows, while AWS cloud services handle authentication, secure storage, and scalable deployment. By integrating automated prescription verification and cloud-based security mechanisms, the system ensures that restricted medicines are dispensed only after valid authorization. This approach enhances trust, safety, and efficiency in online pharmaceutical services while extending the capabilities of existing healthcare e-commerce platforms. By leveraging AWS infrastructure, the system improves scalability, reliability, and data protection, making it suitable for real-world

healthcare and digital pharmacy applications.

EXISTING METHOD

The existing methods in online pharmacy systems, as proposed by Agarwal et al. (2021) and Patel et al. (2022), primarily focus on enabling users to purchase medicines through web-based e-commerce platforms. These systems improved accessibility and convenience by allowing customers to browse medicines, place orders, and receive doorstep delivery. However, they exhibited several limitations. Most existing solutions relied on manual or basic prescription verification processes, where uploaded prescriptions were checked offline or approved by administrators, leading to delays and scalability issues. Many systems lacked secure authentication and cloud-based data management, increasing the risk of data breaches and unauthorized access to restricted medicines. Additionally, traditional platforms often did not leverage cloud infrastructure for scalability and real-time processing, limiting their reliability during high user traffic. These drawbacks highlight the need for a secure, automated, and cloud-enabled prescription verification system to ensure safe and efficient online medicine distribution.

PROPOSED METHOD

The proposed *E-Commerce Medicine Website with Prescription Verification using AWS* enhances traditional online pharmacy systems by integrating secure, automated prescription verification within a cloud-based e-commerce framework. Unlike existing methods that rely on manual validation, the proposed system verifies medical prescriptions digitally before permitting the purchase of restricted medicines, ensuring compliance with healthcare regulations and patient safety. A web-based frontend developed using HTML, JavaScript, and Tailwind CSS provides an intuitive and responsive interface for medicine browsing, prescription upload, and order management. The Python-based backend handles business logic, order processing, and verification workflows, while AWS cloud services are utilized for secure authentication, scalable storage, and reliable deployment. By combining cloud infrastructure with automated verification mechanisms, the proposed method overcomes the limitations of conventional online pharmacy platforms and enables secure, efficient, and trustworthy digital medicine distribution.

SYSTEM ARCHITECTURE

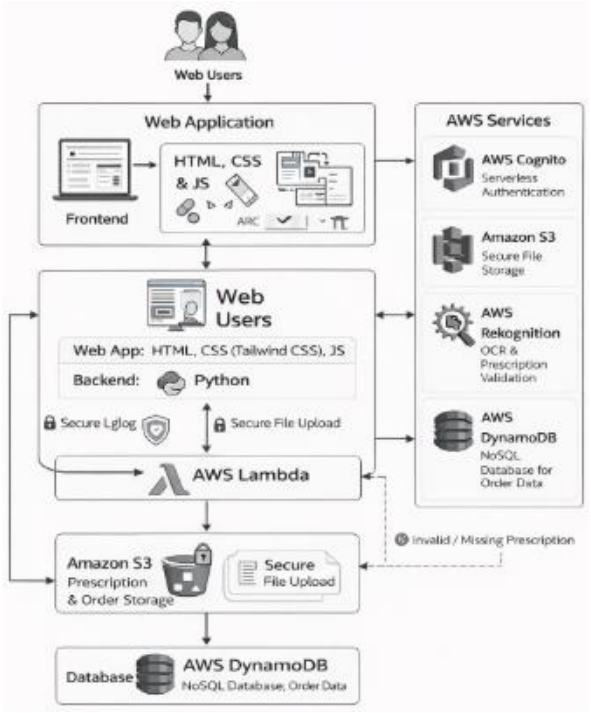

Fig.1: Prescription Verification using AWS

METHODOLOGY DESCRIPTION

User Registration and Authentication: Users access the platform through a secure web-based interface where they register and log in using authenticated credentials.

Medicine Browsing and Selection: Users can search, filter, and view available medicines along with details such as dosage, usage, and pricing. The system distinguishes between over-the-counter and prescription-required medicines.

Prescription Upload: For restricted medicines, users upload a valid medical prescription through the interface. The system accepts supported formats such as images or PDF documents for verification.

Prescription Processing and Verification: The uploaded prescription is securely stored using AWS cloud storage. The system verifies prescription authenticity by validating doctor details, patient information, and prescription validity, ensuring compliance with healthcare regulations.

Order Validation: Only after successful prescription verification is the user permitted to proceed with purchasing restricted medicines. Invalid or missing prescriptions prevent order confirmation, ensuring safety and compliance.

Order Placement and Payment Processing: Users place confirmed orders through the platform. Secure transaction handling ensures reliability and smooth order completion.

Order Management and Tracking: Users can view order status, track deliveries, and access purchase history through the dashboard, improving transparency and user experience.

Cloud-Based System Integration: The Python-based backend manages business logic, prescription verification workflows, and order processing, while AWS services

handle secure storage, authentication, scalability, and deployment.

Outcome: This structured methodology enables a secure, scalable, and reliable online medicine purchasing system with integrated prescription verification. It ensures safe medicine distribution, enhances user trust, and provides an efficient cloud-based healthcare e-commerce solution.

RESULTS AND DISCUSSION

The Medi Mart home page presents a clean, modern, and user-friendly interface designed to ensure ease of navigation for users of all experience levels. The landing page clearly highlights the platform's purpose as a trusted online pharmacy, with intuitive navigation options such as Home, Products, Cart, Dashboard, Login, and Logout. Key service highlights including fast delivery, genuine products, and 24/7 support are prominently displayed, enhancing user trust and engagement.

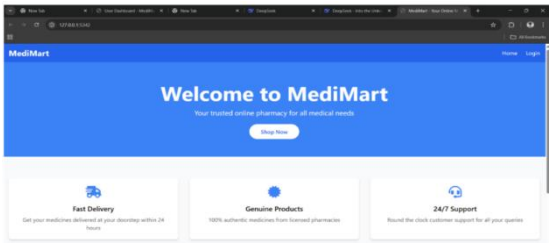

Fig.2: Application Home Page

The user registration and login module allows customers to securely create an account by providing personal, address, and security information. The structured form layout ensures accurate data collection while maintaining simplicity and usability. Secure authentication ensures that only registered users can access personalized features such as order history and prescription uploads.

The product browsing interface enables users to search, filter, and sort medicines based on category, price range, and name. Each medicine card displays essential details such as product image, name, price, stock availability, and usage description. This organized presentation improves product visibility and helps users make informed decisions.

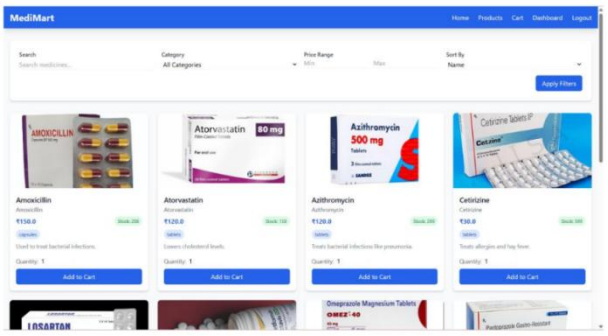

Fig.3: product browsing interface

The Upload Prescription feature allows users to easily submit their medical prescriptions for analysis. Users click on the upload area to select an image (PNG,

JPG, or JPEG), which is then displayed as a thumbnail

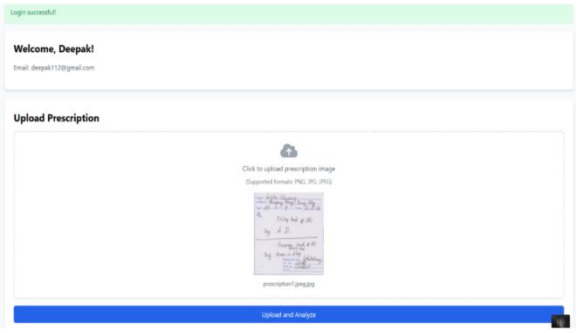

Fig.4: Upload Prescription

The shopping cart interface displays selected medicines along with quantity controls and real-time price updates. Users can modify quantities, remove items, and view the total cost.

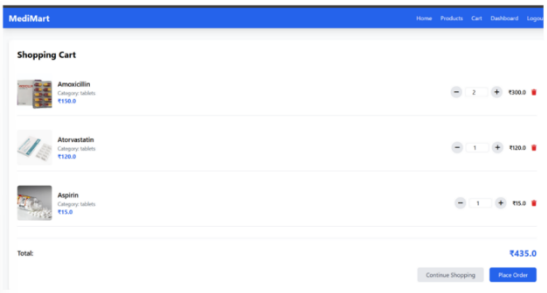

Fig. 5: Shopping Cart and Order Processing

After placing an order, users can view detailed order information through the My Orders section. This includes order ID, date, payment status, itemized medicine details, total cost, and shipping address. The clear presentation of order status improves transparency and enhances user confidence.

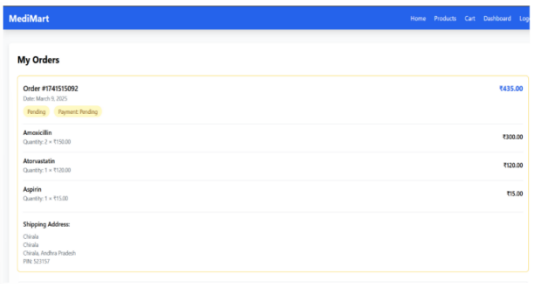

Fig.6: Order Tracking and Management

CONCLUSION AND FUTURE ENHANCEMENT

The *E-Commerce Medicine Website with Prescription Verification using AWS* provides a secure and efficient platform for online medicine purchasing by integrating automated prescription verification within a cloud-based e-commerce system. The system successfully ensures that restricted medicines are dispensed only after valid prescription approval, enhancing patient safety, regulatory compliance, and user trust. The use of AWS cloud services enables secure data handling, scalability, and reliable system performance, while the intuitive web interface improves accessibility and user experience. Future enhancements include incorporating AI-based prescription analysis using optical character recognition (OCR) and machine learning for automated validation, integrating real-time pharmacist consultation, enabling mobile application support, and adding advanced analytics for medicine usage trends. Additional

improvements may involve multi-language support, enhanced fraud detection mechanisms, and deeper integration with healthcare information systems. These enhancements aim to further strengthen security, usability, and scalability, making the platform more effective for real-world healthcare e-commerce applications.

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