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HEALTHCARE RECORDS MANAGEMENT SYSTEM FOR PATIENTS USING MICROSOFT AZURE

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Abstract: Azure is a cloud computing platform that offers the range of services to store, manage, and analyse data. In the healthcare platform, Azure can be used to store and manage the records securely and efficiently. This abstract mainly explores the use of Azure for healthcare records and how it can be benefit the healthcare industry. Azure offers robust security features, such as data encryption, access control, and threat detection, to protect patient's information from unauthorized access or cyber threats. Azure's scalability allows healthcare organization to easily manage and process large volumes of data as their patient base grows.

Keywords: Microsoft Azure, Vue, Docker, Node js, postgresql, Nginx, Typescript.

I. INTRODUCTION

Healthcare records are a critical aspect of patient care and management, and in today's digital age, the use of cloud computing platforms like Microsoft Azure can greatly enhance the efficiency and security of managing these records. Azure provides a robust and scalable platform for managing healthcare records, enabling healthcare providers to securely store, access, and share patient information in real-time. With Azure, healthcare providers can take advantage of powerful data management and analytics tools to improve patient outcomes and streamline workflows. Azure's built-in security features, including data encryption, access controls, and threat detection, ensure that patient information remains protected at all times. Additionally, Azure's compliance certifications, such as HIPAA and HITRUST, enable healthcare providers to meet regulatory requirements and maintain patient privacy. In this age of digital transformation, leveraging Azure's powerful cloud platform can help healthcare providers enhance patient care, optimize their operations, and achieve better outcomes.

II. RELATED WORK

This paper reviews studies of some of the journal papers, these papers are done related to the prediction of disease using machine learning algorithm. A.Sivasankari et al, [1] proposed a Automated Health Care Management System Using Big DataTechnolog, this paper use They have addressed Automated Healthcare Management System is a project implemented with Apache Hive, an abstraction of Map reduce. The data what you are going to analyze is a Semi-structured data. Computerized HMS has been developed. The system solved the problems associated with the existing manual system. Security is also enhanced since access to the system requires authentication. Mastura Md Zali1 et al, [2] proposed Managing Medical Records in Specialist Medical Centers, This study also include semi-structured and face-to-face interview will be used to obtain the information. There are 6 respondents will be identified which from Medical Records Department. They will be given some questions to investigate the challenge of managing medical records, their duties and responsibilities, to determine inadequate proper system, to determine the inadequate funding and to determine the awareness of effective records management among staff. The data will be analyzed using ATLAS. Opele et al, [3] proposed The Management of Health Records Libraries Through the Records Libraries through the Lens of Ranganathan's Theory, This article presents the inferences were drawn from existing literatures that, Ranganathan's five laws can be effectively applied in the practice of preservation and conservation of patients' health records in the health records library. These laws help to appreciate the importance of preservation of information materials for use by ensuring that they are adequately processed, organized and preserved for easy access and use by the hospital and its personnel. Lim Chee Siang Edmund et al, [4] Electronic Medical Records Management Systems: An Overview, this paper allows concurrent access to the data on the medical records to multiple users. It also helps in saving physical housing space of the hospitals, which is an expensive component in all types of places. With the move towards a paperless environment, HIMS professionals will need to focus on efficient systems that provide accurate data timely, reduce space, and help in managing records innovatively. Tom Seymour et al, [5]proposed Electronic Health Records

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(EHR), healthcare entities will have little choice but to adopt EHR technologies. In an age of shrinking Medicare, Medicaid, and third-party payer reimbursement, gaining efficiencies through EHR technology is imperative. The survival of healthcare organizations depends on who develops the best EHR and IT systems.

III. METHODOLOGY

The methodology for healthcare records involves the systematic collection, analysis, and management of patient health information to support quality patient care. Here are some key steps involved in the methodology for healthcare records:

1. Data collection: The first step in healthcare record methodology is the collection of patient health information. This includes demographic data, medical history, current medications, and any relevant test results.
2. Documentation: The collected data must be documented in a consistent and accurate manner using standardized medical terminology and coding systems.
3. Record organization: The healthcare records should be organized in a logical and structured manner, with different sections for different types of information.
4. Data storage and retrieval: The healthcare records should be stored in a secure and easily retrievable format, such as electronic health records or paper-based records.
5. Data analysis: Once the data is collected and organized, it can be analyzed to identify patterns, trends, and potential health issues.
6. Clinical decision-making: The analysis of patient data can be used to inform clinical decision-making, such as treatment planning and monitoring.
7. Data sharing: Healthcare records may be shared with other healthcare providers to ensure continuity of care and to facilitate collaborative decision-making.
8. Privacy and security: Healthcare records must be kept secure and confidential, with appropriate measures in place to protect patient privacy and prevent unauthorized access.

A. TRAINING

Training for healthcare records using Azure can be achieved using various Azure services and tools. Here is a high-level overview of the steps involved:

1. Data preparation: The first step is to prepare the data for training. This includes collecting, cleaning, and labeling the data. You can use Azure Data Factory or Azure Databricks to collect data from various sources, such as Electronic Health Records (EHR) or medical images. You can use Azure Machine Learning Studio or Azure Notebooks to clean and preprocess the data.
2. Model development: Once the data is ready, you can develop a machine learning model using Azure Machine Learning. You can choose from a variety of algorithms, such as logistic regression, decision trees, or neural networks, depending on the type of healthcare records you are working with. You can also use AutoML to automatically generate a model that fits your data.
3. Model training: You can train your machine learning model using Azure Machine Learning. You can use Azure Machine Learning Studio or Azure Notebooks to define and run experiments. You can also use Azure Kubernetes Service to scale your training jobs to multiple nodes for faster training.
4. Model evaluation: After the model is trained, you need to evaluate its performance. You can use Azure Machine Learning to compare the performance of different models and choose the best one.
5. Model deployment: Once you have a model that meets your requirements, you can deploy it to production using Azure Machine Learning. You can deploy your model as a web service or container using Azure Kubernetes Service, Azure Functions, or Azure App Service.
6. Model monitoring: Finally, you need to monitor the performance of your deployed model to ensure that it is working as expected. You can use Azure Application Insights to monitor the model's health and performance and receive alerts when anomalies are detected

B. PREDICTION

Azure offers a range of services for health care records management, including cloud-based storage, analysis, and sharing of patient data. With Azure, health care providers can securely store and access patient records, while also gaining insights from data analytics and machine learning. One prediction for health care records using Azure is that we will see increased adoption of Azure's data analytics and machine learning capabilities in health care. These

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technologies can help providers better understand patient populations, identify trends, and personalize treatments. Another prediction is that we will see continued expansion of Azure's capabilities for managing and sharing patient data securely. With Azure, health care providers can leverage a range of security measures, including encryption, access controls, and monitoring, to protect patient data against unauthorized access or theft. Additionally, Azure's cloud-based architecture makes it easier for providers to share patient data with other providers and researchers, while still maintaining strict data privacy protections. Overall, Azure offers a powerful set of tools and technologies for managing health care records, and we can expect to see continued growth and innovation in this area in the years to come.

IV. RESULTS AND ANALYSIS

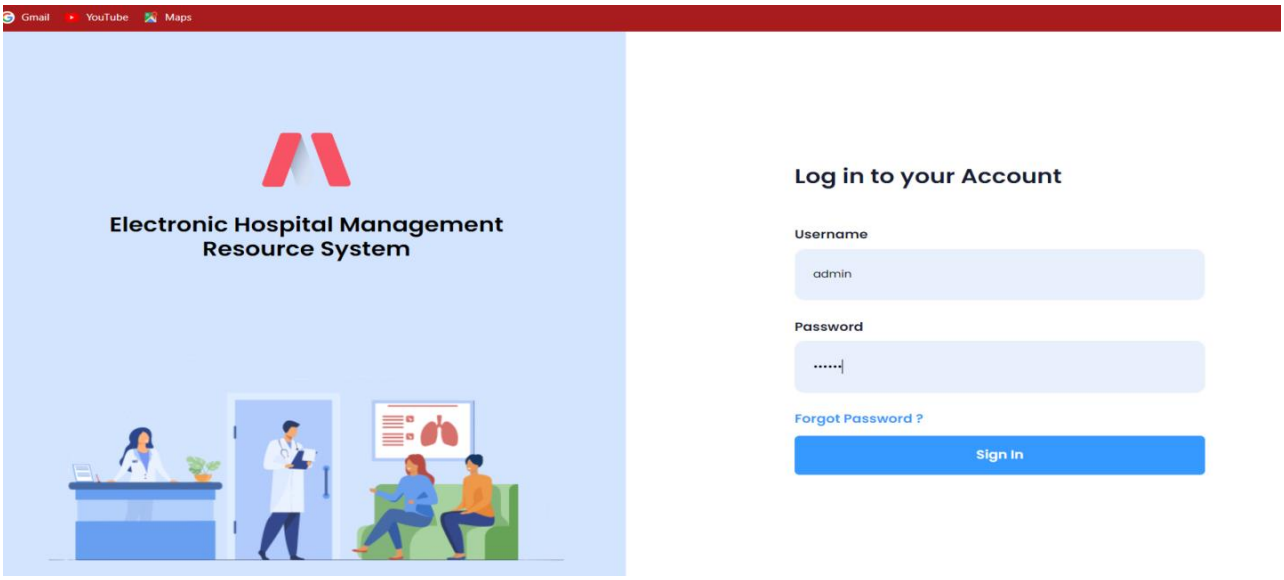

Fig: Login Page

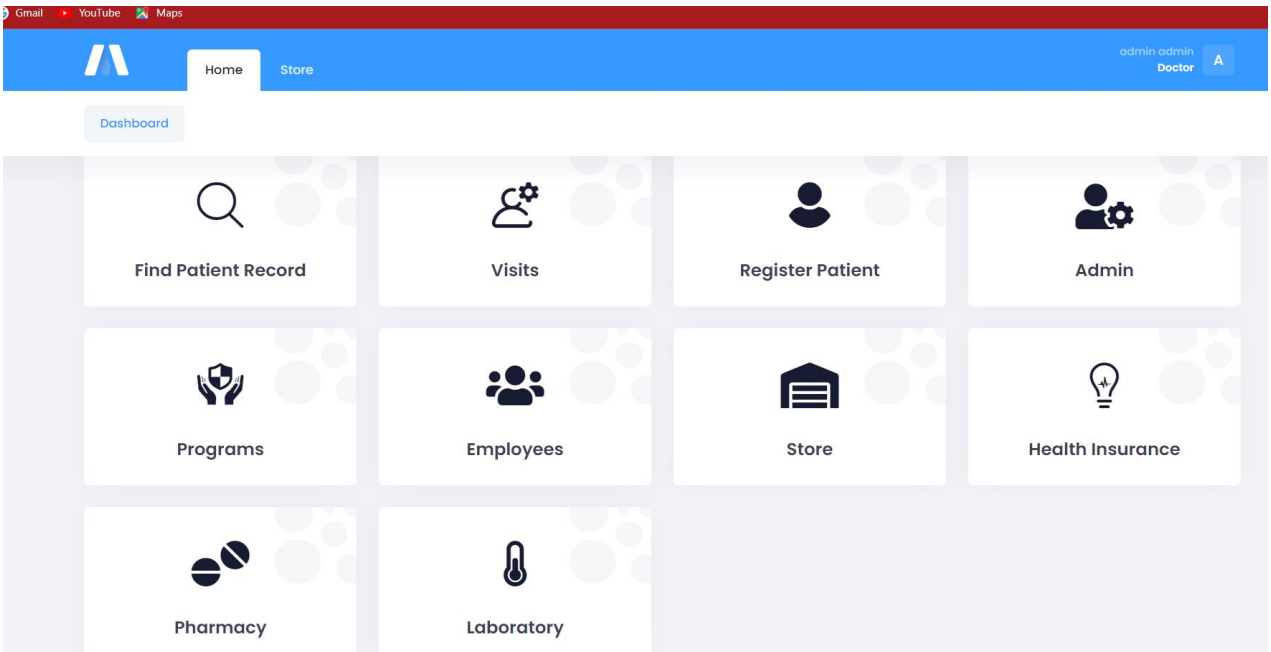

Fig: Home Page

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Using Azure, healthcare organizations can leverage the cloud's capabilities to manage their records effectively and securely. Healthcare organizations that use Azure for records management can achieve improved efficiency, enhanced security, scalability, cost savings, and data analytics capabilities.

V. CONCLUSION

In conclusion, using Azure for healthcare records can provide numerous benefits such as secure storage, efficient data processing, and seamless collaboration among healthcare providers. Azure offers advanced security features such as encryption, access controls, and audit trails to ensure that healthcare records remain confidential and comply with industry regulations. Additionally, Azure's machine learning and analytics capabilities enable healthcare organizations to extract insights from the data to improve patient outcomes and optimize operational efficiencies. Overall, leveraging Azure for healthcare records management can improve patient care, enhance productivity, and reduce costs for healthcare organizations.

VI. FUTURE SCOPE

In future this project, Healthcare records will enable personalized medicine, which is tailored to individual patients based on their unique genetic and environmental factors. With the help of big data analytics, healthcare providers can identify patterns and trends to personalize treatments that suit individual patient needs. Telemedicine will revolutionize healthcare delivery by allowing patients to access medical care from the comfort of their own homes. Healthcare records will play a critical role in facilitating telemedicine by enabling remote consultations and sharing patient information with doctors and other healthcare providers.

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