



Hospital Management System Using EJS

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Abstract- Care Quest is a load balancer designed to improve coordination between medical facilities to help them deal with the pandemic situation. Traditionally most hospitals add a really uncoordinated manner which means they're not enlightened facilities/needs of different hospitals within the town, as a result, everything is attended to by the patient and sometimes fatalities happen all because of misinformation or lack of information. Project Aims to bring the information on a central portal to provide ease to end consumers and ensure they make better decisions. The project is quite effective because it can accomplish with pre-existing data available in public.

Keywords- Care Quest, Medical Facilities, Covid-19, Health, Hospital.

INTRODUCTION

As we have many industries turning towards the digital front, it could be a great move for the succession and essential industries such as Hospitals to move in that direction. There are many scopes in medical technology nowadays. The modern existing module is proficient but when the time is not a constraint. We cannot have this system when every second matters. This system should include many online front features that include the hospital's records, including available beds record and other things. Every day too many people come to the hospital with various types of diseases. Many of them come with a very emergency situation. But sometimes when they come to the hospital, they can't get any beds for their patient because every hospital has its bed and doctor limitation. During epidemics, patients face various problems. There have been problems getting an emergency bed and getting an ambulance to the hospital. It became very much dependent on computer technology. Now it is very easier to operate robots on medical agenda. The public healthcare services are organized along with healthcare and hospital management. Contempt pretext in technology, nowadays, many blood and organ donation systems are running in online systems.

RELATED WORK

Many techniques have been adjusted in the healthcare sector. In this section, a review of some existing techniques has been presented.

Richa Jain et al. [1] in this article, organized analysis of the Data Mining Algorithm in Healthcare. Which has resulted in an exceeding flood of clinical vast knowledge. The knowledge gathered from this flood of information ought to be organized in such how that it will offer higher tending insights. The efficiency and effectiveness of the treatment systems are improved by data processing algorithms by authorizing them to use knowledge and technology a lot of effectively. Data processing is useful to the healthcare business in several views for example: prophetic drugs, client relationship management, fraud and additionally abuse discovery, tending observation, and additionally keeping track of the potency of sure therapies, etc. This article has given a comparison of varied data processing algorithms and additionally highlights applications and challenges of information Mining purpose.

Asma Khatoon et al. [2] presented a Blockchain-Based Smart Contract System for Healthcare Management. In this paper, she reviews existing literature and applications on the market for the attention system exploitation of blockchain

technology. Besides, this work conjointly proposes multiple workflows concerned with the attention system exploitation of blockchain technology for higher information management. Completely different medical workflows are designed and enforced exploitation of the Ethereum blockchain platform that involves complicated medical procedures like surgery and clinical trials. This conjointly includes accessing and managing an outsized quantity of medical information among the implementation of the workflows of the medical sensible contract system for attention management, the associated price has been calculable for this method in terms of a practicability study that has been extensive given during this paper. This work would facilitate multiple stakeholders who are involved in the medical system to deliver higher attention services and optimize prices.

Chih-Lung Lin et al. [3] in this paper have actually developed BIM for Smart Hospital Management during COVID-19. They are using Multiple Criteria Decision Making (MCDM) to establish a smart hospital evaluation system with evaluation criteria and sub-criteria, and they utilize Analytical Hierarchy Process (AHP) within Multiple Criteria Decision Making (MCDM). which were then more prioritized and mapped to BIM-related alternatives to tell plus data management (AIM) practices. This context of this study enclosed the professional opinions of six professionals within the sensible hospital field and picked up 113 responses from hospital-related personnel. The results indicated that functionalities connected to end-users are important, particularly IoT's Network Core Functionalities, AI's Deep Learning, and CPS's Special Network Technologies. what is more, BIM's capability to contribute to the lifecycle management of assets will relate and contribute to the asset-intensive physical criteria of smart hospitals, particularly IoT, service technology innovations, and their sub-criteria.

Muhsin Hassan Saleh et al. [4] presented ONLINE HOSPITAL MANAGEMENT SYSTEM. This paper aims to address the online hospital management system as an area to enhance the medical field. Patients tend to spend a lot of time for treatment, this tends to result in the patient being attended to lately, the manual system was looked at in detail with help to find out the need to improve the system. A computerized program was designed to bring about development in the care of individual patients, with a view of taking the advantage of storage, computer speed and retrieved facilities.

For patient registration, treatment, billing and payment method all are included in this software. Abeer Hadi et al. [5] suggested a Web and IoT-based hospital location determination with criteria weight analysis. In this study, optimum urban hospital location choice for COVID-19-infected patients is done out of multiple alternatives locations within the town of Republic of Iraq national capital } Iraq by introducing an internet application system that can realize the simplest web site from alternatives by exploitation MEREC and changed technique for order of preference by similarity to ideal answer (TOPSIS) algorithms. MEREC formula is employed to get criteria weights and modified TOPSIS for ranking the alternatives. Four criteria area unit thought of with eight alternatives sites. The planned system has two-part, hardware part (embedded systems) designed by utilizing NEO-6M GPS receiver with ESP8266NodeMCU to get the coordinate of regions and then, using the HTTP protocol to speak to submit this information to the info server. The second half is that the internet application developed by PHP, JavaScript, CSS, HTML, and MySQL area unit accustomed permit the system admin to enter the locations of the alternatives with their criteria into the system to induce the simplest urban hospital location for COVID-19-patients. The results showed the effectiveness of the overall prompt system and appropriateness of the changed TOPSIS method over the normal TOPSIS methodology in ranking the choice.

COMPARATIVE ANALYSIS

Author and year	Tools And Technology	Results	Limitations
M. Sornalakshmi (2021) [10]	EPDA	EPDA generated lesser number of rules and performs better than traditional algorithm	The disadvantage of traditional Apriori algorithm is that lot of time is sent in managing huge dataset. It works fine only when dataset is small
El-Houssainy (2019) [12]	MLP, RBF, PNN and SVM	Advantage of PNN is that it is easy tuning and fast learning algorithm. SVM on the other hand is more accurate	Training time of SVM is slow
V.Sharma (2020) [14]	Deep Neural Networks (DNN)	Accuracy of the algorithm is 82.7%, misclassification probability is 17.3%, sensitivity came out to be 81.03%, and specificity is 82.8%	DNN proved to be lacking by 5% in the accuracy than SVM
V. Mounika (2021) [13]	Machine learning algorithms- Logistic Regression, Random Forest	Using the machine learning methods Logistic regression and RF the accuracy is improved to 97% and 95% respectively	Features in LR needs to be normalized
E. Gothai (2021) [6]	Prediction model using LSTM	The proposed prediction model build using LSTM is proved to be more reasonable	In case of nonlinear data or when change in data is more than the model shows fluctuations
Zhenya Qi (2021) [11]	Five Classifiers- random Forest, logistic regression, SVM, ELM and k-nearest neighbor	The ensemble classifier has boosted the accuracy and minimized the MC at the same time	Time required to train the ensemble is quite high
S.Revathy (2019) [15]	SVM, Decision Tree, Random Forest Algorithm	Accuracy of Random Forest classifier is better	RF classifier requires more time for training
Sharmila (2019) [7]	Apache Hadoop and Spark	Hadoop possess high performance and reliable storage. Spark uses in memory spa	Hadoop uses local memory space
Bai, BG Mamatha (2019) [8]	BIRCH, Gaussian Naïve Bayes, and OPTICS	BIRCH is capable of handling noise in dataset	The efficiency of BIRCH is less than OPTICS
Ed-daoudy (2019) [9]	Real time Big Data Based Prediction System	Spark is easier to use than Hadoop. Spark performance is faster than Hadoop and Weka	MapReduce is inefficient in running in running on iterative algorithms

PROPOSED WORK

PushBot generates regular updates (new beds in hospitals, new plasma patients/donors, stat updates) to the user and pushes them as notifications. IBM Watson provides help to the user as CareBot because it helps him/her guide through

totally different options and functionalities. User accesses the domain victimization Heroku services. Heroku executes nodeJS to render the website. Server requests SendGrid to send mail once either of the plasma forms is submitted. SendGrid sends mail to users that contains type information. The server sends requests to Firebase. For user login, register, and verification services manages Firebase Authentication. Firebase sends all id card pictures to its base Storage / Bucket. The ID card image is then sent to Tesseract for the OCR process. Base registers all variables associated with hospital and user and stores them in Firebase Realtime info. HERE Map API (Track-a-Bed) sends hospital information to Firebase Realtime info to link with user information. MongoDB sends all hospital information from its assortment to HERE Map genus APIs to be displayed below Track-a-Bed.

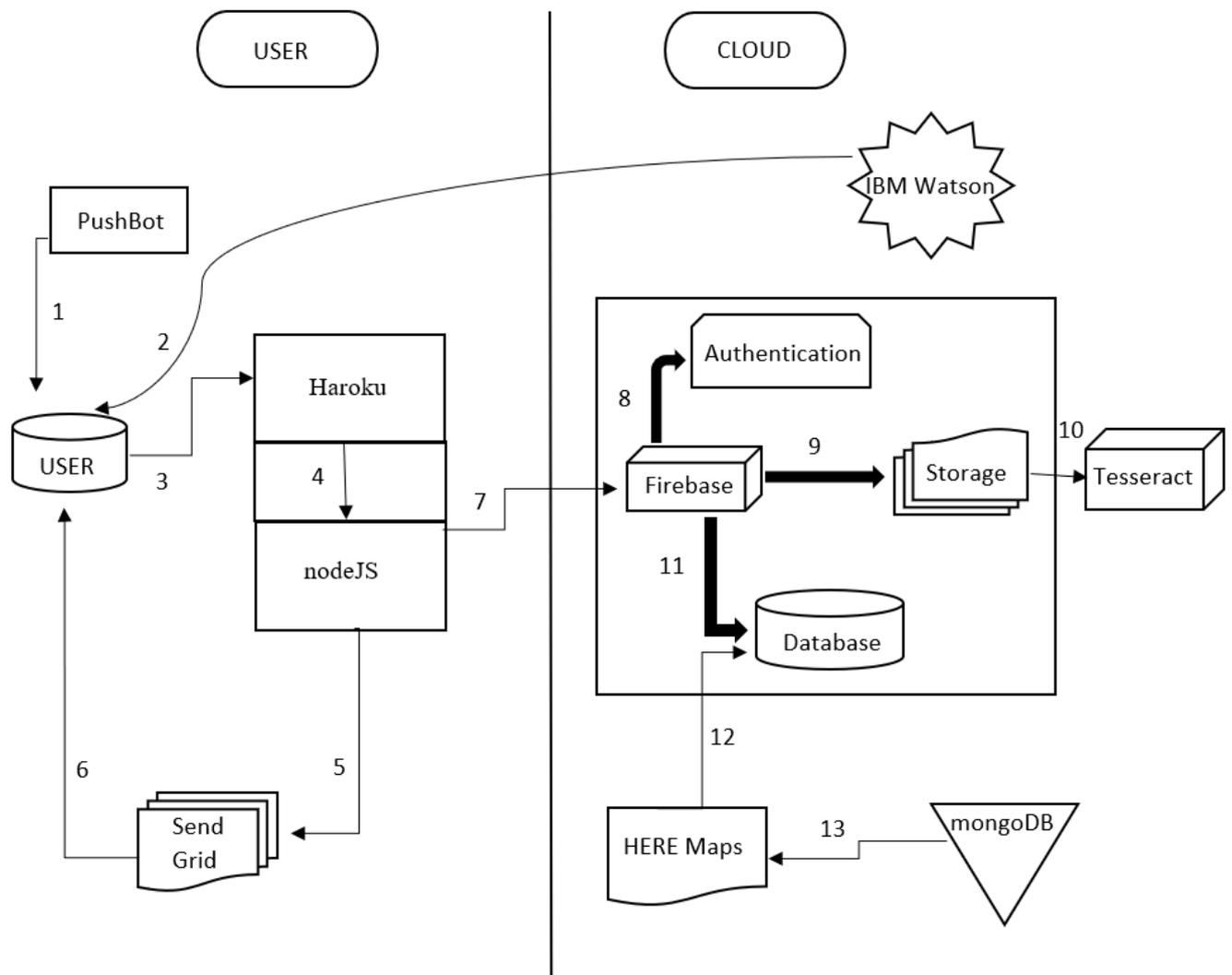


Figure: The Architecture

FUTURE WORK

Information from various methods can define a health issue from various facets, so an extensive understanding of healthcare can be obtained by developing some hybrid techniques. With the increased usage of Care Quest techniques in healthcare the potential threat to data security and privacy has also increased, so methods are required to keep the data of patients safe and secure.

CONCLUSION

During the pandemic, we've got seen however in Care quest services may facilitate across the globe. Several countries apace adapting their activities to specialize in advising, triaging, and managing treatment of COVID-19 cases – all whereas reaching bent on vulnerable patients and maintaining access to essential (non-COVID) services for the broader population victimization new in-person protocols or new digital solutions and it'll increase day by day. There's Associate in Nursing pressing ought to capture learnings from the pandemic that is specific to worry quest services, and to show these into strategic action plans to strengthen readiness for future outbreaks and higher reply to the modern health challenges.

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