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Paper Authors

Koteswara Rao.A, Navya Tejaswi. D, Raga Malika .A



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Vehicle Breakdown Assistance Finder

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Abstract

On Road Vehicle Breakdown Assistance can be a valuable solution for people who face mechanical issues with their vehicles in remote locations. By registering with the On Road Vehicle Breakdown Assistance system, users can connect with licensed and approved mechanics who can provide trustworthy assistance.

One of the benefits of using this system is that users no longer need to rely solely on their own limited database of mechanics. Instead, they can access a list of mechanics at any location or nearby locations, which can be helpful in unexpected situations.

Overall, On Road Vehicle Breakdown Assistance can be a useful service for anyone who needs reliable and timely assistance when facing mechanical issues with their vehicle. By leveraging technology and a network of trusted mechanics, this system can provide peace of mind for drivers on the road.

Introduction

It seems like you are discussing the benefits and features of a proposed On Road Vehicle Breakdown Assistance system that can help drivers in case of vehicle breakdowns while traveling. The system will provide a list of legally licensed and approved mechanics in the area and allow users to search for mechanics based on their location. The system will also have a chat platform for users to ask relevant questions to the mechanics, and after the job is completed, users can rate and provide feedback to the mechanic. The system aims to reduce the time and effort required to find a proper mechanic, and the user can access the system through an Android application. The proposed system can be useful in reducing the amount of time required to search for mechanics once a vehicle breakdown occurs, especially in remote or unfamiliar locations. The application will use the user's current location to decide the nearest mechanic workshop or their garage available and

display all the remaining mechanic shops in ascending order of the distance from the user. The system also allows users to search for vehicle spare-part shops if needed. Overall, the system is designed to provide an efficient and reliable solution for users who face vehicle breakdowns while traveling.

Literature Survey

These three papers address different aspects related to vehicles and their usage.

The first paper by Akhila V Khanapuri et al (2015) focuses on improving fuel efficiency and providing assistance in case of vehicle breakdown. The proposed solution is an android application that monitors various parameters of the vehicle through an On board Diagnostics (OBD-II) system. This paper aims to help amateur drivers with gear changing and provide assistance in case of a breakdown.

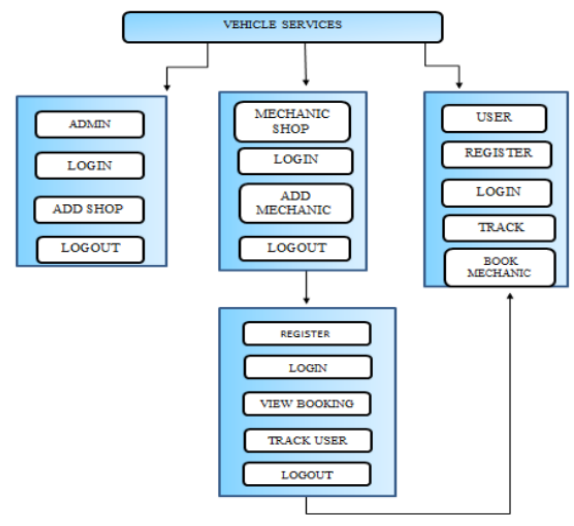
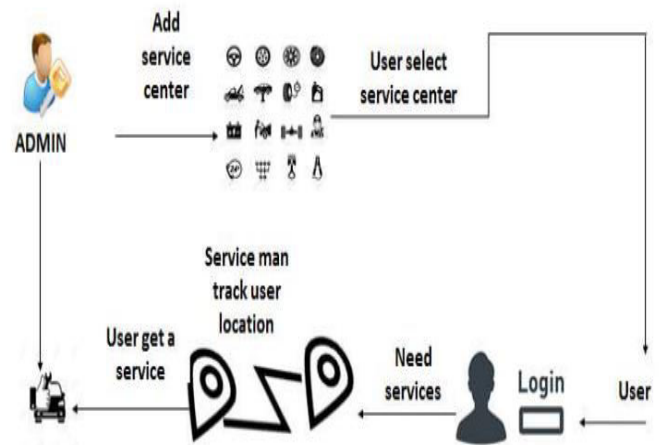
The second paper by Huang Yan et al (2014) discusses the GPS common/all-view method, which is used for long-distance time and frequency transfer. The paper introduces a high real-time multi-channel GPS time transfer receiver and post-processing algorithms based on EURO-160 GPS board to verify the accuracy of the GPS time transfer receiver. This paper aims to demonstrate that the high real-time GPS receiver and foreign commercial GPS P3 code receiver have the same technology level.

The third paper by Khoo Jin Sheng et al (2016) analyzes the incidents of car breakdown on the road and proposes a Car Breakdown Service Station Locator System. The paper discusses the planning and analysis of the system and the development of a system that connects Car Repair Service Providers (CRSP) and the public.

Overall, these papers provide insights into different aspects of vehicle usage, including fuel efficiency, time and frequency transfer, and breakdown service. They propose different solutions to address these issues and demonstrate their effectiveness through experiments and analysis.

Methodology

It seems like you are describing the different phases of a proposed system for car breakdown service. Phase 1 involves adding registration of mechanics, users, and spare parts to a database, while Phase 2 is an API for live tracking that allows users to register and request a mechanic, with the system using geo locator API to track their location in real time. Phase 3 is focused on finding nearby spare parts shops in case a repair requires replacement of parts, using a search function to find registered shops nearby. This system could potentially provide a more efficient and streamlined process for car breakdown service, connecting users with mechanics and spare parts providers in real time.



Implementation

It seems that your description is related to an application that aims to provide a platform for drivers to easily locate nearby mechanics or spare parts shops in case of a breakdown. The application offers a user-friendly interface and allows drivers to save time and money by finding mechanics or spare parts shops with the help of their mobile phones. The application provides direct communication between the driver and the mechanic and helps mechanics and drivers work more efficiently. To use the application, users need to create an account and log in with their phone number or a username and password. Mechanics also need to log in to their profile to be visible to people who are near them and seeking help. The application can be downloaded on Android phones and tablets and provides 24/7 services.

Conclusion

It sounds like the proposed system will bring many benefits to both the users and the mechanics. By offering a user-friendly interface and real-time tracking, users can quickly locate nearby mechanics and spare parts shops, saving them time and hassle. In turn, mechanics can benefit from increased visibility and direct communication with potential customers. Additionally, the web application promises to streamline the job application process and make result preparation and management more efficient for companies. Ultimately, the system provides a sense of security and peace of mind for vehicle owners, knowing that help is just a few clicks away in the event of a breakdown.

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IMK in association with School of Distance Education, University of Kerala organized an International conference on Business Management and Allied Disciplines (ICBMAD22) in association with Maseno University, Kenya and Addis Ababa Science and Technology University, Ethiopia during 22-24th August 2022 through online mode. This conference assumes significance in the wake of the University of Kerala getting the coveted A++ grade from NAAC, Bengaluru with 3.67 CGPA. All the papers received were subjected to thorough peer review through the editorial board and also through the International and national advisory board members. Those selected were considered for the publication in this journal with two volumes during the period 2022. The articles have been written with innovative thoughts, an excellent inquiry process and also with the access to both secondary and primary data.

I am sure you will find the articles worth reading and your feedback is important for the improvement of the journal. It can be mailed to kscnair@keralauniversity.ac.in.

Thanking you

Dr.K.S.Chandrasekar

Chief Editor

AUTHOR GUIDELINES AND ETHICAL CONSIDERATIONS

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ISSUES AND CHALLENGES OF MANAGEMENT EDUCATION IN EMERGING ERA WITH SPECIAL REFERENCE TO ANDHRA PRADESH

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ABSTRACT : Management education in India has evolved significantly over the past 70 years. The trade and industry liberalization era of 1990s and the subsequent speedy economic development witnessed extensive demand for management education. Management education inculcated entrepreneurial skills and abilities required for the state and Nation's progress. This paved the entry of large number of public and private institutions to offer management education programmes across the state. Management education across the state is facing exceptional challenges of enrollment of poor quality students, inadequate skills & knowledge, shortage of high quality faculty, outdated curriculum, lack of Industry-Institute interaction etc. The purpose of present research is to analyze the issues and challenges of management education in the emerging era with special reference to Andhra Pradesh. The study is based on up to date observation of management education, interaction with experts of industry and academia and alumni, in depth reviews, research articles and web sources. This study would be useful to the policy makers, Managements of institutes, industries at large to the student community.

Key words: *Entrepreneurs and Intrapreneurs, Issues and challenges, Industry-Institute Interface, Industry 4.0, Management Education.*

INTRODUCTION

Management education in Andhra Pradesh has evolved significantly in the last decade of 20th century. Globalization and privatization supported number of transnational corporations. Liberalization of global labor market and capital market created unbelievable opportunities for all by offering at competitive prices, raising quality of life and aspirations, expanding service sector and providing decent employment to millions of youth. These developments ensured a great demand for management education. Management institutes turned up in a big way across the world to permit a cadre of business leaders and managers with appropriate knowledge, skills and attitude. Management education helped in developing strategic planning and action, long-term outlook, corporate culture, standards of excellence, adequate customer service across the organization, team spirit, result oriented decision making.

LITERATURE REVIEW

J Balamurugan and L Priya Dharsini (2017) educational institutions in India must update and initiate innovative teaching methods and enhance the employability skills of the management graduates. Study by ASSOCHAM (2016), lack of infrastructure, faculty competencies and lack of proper regulation were the main reasons for poor employability of the management graduates. Neelamegham, S. (2015), revealed that there is a massive gap between the demand and supply of management graduates, also highlighted that the management institutions must adopt undergoing changes at global market and adopt new, innovative pedagogies to meet the emerging demands of society and industry.

D.M. (2015) argued that educational institutions should understand the changing demands and emerging need of industry and initiate changes in education system, structure and teaching methodologies. Mangesh G, et al (2015) management education should change its track from placement centric to self employment and entrepreneurship. Mahajan R, et al (2014) recognized that quality of management education is based on leadership, research and

consultancy, academic standards, placements, industry collaboration, extracurricular activities, infrastructure, institutional practices, financial resources and location. Leadership, organizational structure and practices are the most significant factors affecting the quality of management education.

OBJECTIVES:

The aim of this research is to understand and analyze the issues and challenges of management education in emerging era with special reference to Andhra Pradesh. This study is an attempt to discuss the key issues and challenges of management education and provide suggestions to policy makers and promoters of management education for improving the quality of education.

METHODOLOGY

The present study is a descriptive in nature and consists of up to date observation, interaction with experts of industry, academia and alumni, in depth reviews, books, research articles, news papers and web sources.

KEY ISSUES AND CHALLENGES OF MANAGEMENT EDUCATION

The first issue of management education in the state of Andhra Pradesh is the quality of enrollment into the programme. The selection criterion set for admission in majority of the universities and institutions offering management education has low standards when compared with the outcomes expected of the programme and many students with inadequate knowledge, skills and competencies are joining the programme. This has resulted in poor enrollment quality.

Second major concern is the faculty knowledge. Management programme demands more practical knowledge and continuous update. But many faculty lack industry connect and fail to update on regular basis. Faculty intake process in many institutes is confined to the qualification rather than the competence. The initiatives by the regulatory bodies in this direction are also nominal. Research is the part and parcel of upbringing faculty knowledge and to get connected with societal and business issues. Unfortunately, quality of research under the domain is questionable. Pay packages offered for the faculty is not encouraging to update, excel and explore their full potential.

Management education is a challenging task for the learners as they must hone the skills, knowledge and competences required to start an enterprise or uphold higher level management positions in corporate companies. The teaching- learning pedagogies followed in many institutes are conventional and lack student's involved in learning process. Efforts initiated by the regulatory bodies, educational institutions and faculty to modify the pedagogical methods are inadequate to harness student's potential.

Business world has been more dynamic and challenging for the last two decades and change has become inevitable in every sphere of business. Having abreast knowledge of business happening has been the key success factor for every student pursuing management education. Industry 4.0 expectations required drastic changes in curriculum design and implementation to make management students industry ready. But the efforts initiated in this direction have been minimal at regulatory, university and institute level and could not catch up the speed of dynamisms in business and has impaired the opportunities.

Management education in itself imbibes being connected with industry. The reality has been different. The industry- institute interface at many management educational institutions has been inappreciable. This has lead to the huge gap between industry

expectations and student competence. They could neither utilize nor develop the requisite knowledge, skills and capabilities to reap the opportunities.

The ultimate goal of management education is to create entrepreneurs and intrapreneurs who could contribute for the economic development of the nation. The knowledge, skills and capabilities imparted as part of management education are far behind the expectations of employers. Hence, the reality is quite alarming as many of them are compromising with the entry level and non managerial jobs accepting underemployment and even some of them are being unemployed. Establishment of their own business for these students has been a day dream even after having the enthusiasm and strong will.

Adequate and advanced infrastructure facilities are a must for effective learning by the students. Educational institutes must have facilities for virtual labs, analytical tools, Augmented Reality, Virtual Reality based real-time scenarios, games and gamification using advanced technologies for better teaching- learning process. Many institutions cannot afford to procure and maintain these facilities and even faculty require more training in this area for effective utilisation.

DISCUSSION AND CONCLUSION

In spite of many issues and challenges management education is the compulsory field of education to cater the needs of industry. Due to the internationalization of business, students with adequate knowledge and skills with global perspective have more demand. It can create entrepreneurs with self reliance and help nation's development. At this juncture management education is in need of many initiatives and reforms. Regulatory, government and concerned authorities should standardize the enrollment procedure for improving the quality of intake. Approval of management institutions should not be confined based on documentation submitted by the institution but it requires thorough inspection on continuous basis. Selection criterion for faculty working in this domain must be scaled up from mere qualification to qualification with competence. Mentorship from industry experts, industry connect and research with industry tie-up should be made mandatory for continuing in this domain for the faculty fraternity. Rewards and incentives should be given to motivate the faculty for up skilling and cross skilling. Student Faculty ratio is a notable issue to prepare the students as per the changing business scenario. Regulatory authorities should look into the matter. Curriculum design must drastically change to match the expectations of industry. More short term projects, earn while you learn programmes, research based assignment should be made compulsory on business and societal issues. There is strong need for attitudinal change in implementing the teaching pedagogies. More involvement of students in learning with case studies, simulation exercises, blended learning, management games and gamification, integrating technology into teaching – learning pedagogies etc., shall help the students increasing decision making, problem-solving, creative, design and lateral thinking abilities, team work, leadership and other skills and capabilities. The modifications in curriculum design, implementation, industry interface and learning pedagogies inculcate entrepreneurial and intrapreneur abilities and make them industry ready. Educational institutions must focus more on employability skills. Entrepreneurship Development cell and Incubation cell at institute level must motivate, guide and support the students in establishment of enterprise. The present study has certain limitations. The study is based on up to date observation, interaction with experts of industry, academia and alumni. The study considered key major issues and challenges identified by the researcher. The present study has further scope for research from students, parents, educational institutions with a structured questionnaire.

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DESIGN AND ANALYSIS OF RECONFIGURABLE ANTENNA FOR WIDE BAND APPLICATIONS

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Abstract. The relevance of reconfiguration in a dynamic environment is to improve an antenna's performance by allowing it to transition between multiple frequencies. In this paper, we designed a reconfigurable patch antenna and fed it by strip line feeding by placing 2 slots to obtain different resonant frequencies. The feature of reconfigurability is attained by using Pin Diodes. In our design, we take a 2 pin diode. The proposed Antenna can operate on different frequencies i.e. 2.88GHz, 5.5GHz, 10.8GHz and 11.1GHz with the efficiency of 90% and more at different conditions of the diodes. This analysis is done by using HFSS Software.

Keywords—*Reconfigurable Antenna, Pin Diode, X-band, C-band, microstrip feed line.*

1. Introduction

Rapid escalation in the area of wireless communication there is a demand for reconfigurable antennas for multimode operations to use in various applications. The word reconfigurability defines the ability of an antenna to adjust the characteristics of the antenna like resonant frequency, polarization and radiation pattern instead of single antenna. The dynamicity of the antenna is obtained by switching mechanism to design a reconfigurable antenna. Some the switching techniques are varactor diodes, Pin Diodes and RF MEMS switches. Each and every switch has its own advantages. Though we have several switching techniques like RF memes, varactor diodes etc. We have chosen the pin diode as our switch because of it is high linearity, high-Speed response, low noise, low cost and more reliable [1]. On two sides of the substrate the bow-tie radiator is printed and micro strip line feeding is given. The Pin diode is used for switching mechanism and is embedded to it. It is proposed for to operate on 3 states but the design is complex [2]. In [3] Slot antenna is proposed which gives a bidirectional radiation pattern, operates in three resonant frequencies by using 2 pin diodes [4]. In A frequency reconfigurable pixel antenna was proposed [5] they used 6 RF pin diodes but they get only three resonant frequencies and less cross polarization. In [6] a compact micro strip patch antenna with slot is proposed they have used two pin diodes to operate at WiMAX frequencies [7]. A reconfigurable slot antenna is proposed for to operate in LTE, AMT-fixed service and WLAN applications [8]. In [11], this paper presents the overview of RF MEMS components and the reconfigurable antennas designed and produced in the Middle East Technical University using the in- house fabrication process. In [12], frequency reconfigurable antenna has been designed for three applications and characteristic was achieved by placing two diodes between the rectangular T-shaped patch and split



ring patch. In [13], band-notched ultra wide band antenna is discussed; it can switch between two nick bands and tune central frequency simultaneously. To switch the lower and upper frequency bands PIN diodes are used in the construction. When the diode state is fixed, the nick bands may transition between 4.2GHz and 5.8GHz, and when the state of the PIN diodes is ON & OFF, the tuning ranges are 4.2GHz to 4.8GHz and 5.8GHz to 6.5GHz, respectively. In [14], a compact reconfigurable slot patch antenna was proposed with the operating frequencies range of 2GHz to 6GHz for WLAN applications. In [15], proposed antenna consisting a square radiating patch with two switches and it can be operate either 2.2GHz or 2.45GHz based on the state of the PIN diodes.

2. Design Equations

To begin, basic parameters such as substrate height (h), operating frequency (f_r), and substrate material (ϵ_r) must be identified.

Step1: Patch Calculations- The width of the patch is affects the resonant frequency. It is defined as

$$W = \frac{c}{2f} \sqrt{\frac{2}{\epsilon_r + 1}} \quad (1)$$

Where, c is speed of light: $c = 3 \times 10^{11}$ mm

The length of the patch is depending on effective length and effective of ΔL

$$L = L_{eff} - 2\Delta L \quad (2)$$

Where, L_{eff} is the effective length it affects the return losses and it defined as

$$L_{eff} = \frac{c}{2f\sqrt{\epsilon_{reff}}} \quad (3)$$

$$\epsilon_{reff} = \frac{\epsilon_r + 1}{2} + \frac{\epsilon_r + 1}{2} \left[1 + 12 \frac{h}{W} \right]^{-\frac{1}{2}} \quad (4)$$

$$\Delta L = 0.412h \frac{(\epsilon_{reff} + 0.3) \left(\frac{W}{h} + 0.264 \right)}{(\epsilon_{reff} - 0.258) \left(\frac{W}{h} + 0.8 \right)} \quad (5)$$

Step2: Substrate Calculations

The length and width of the substrate are effects the resonant frequency and fringing effects

$$L_g = L + 6h \quad (6)$$

$$W_g = W + 6h \quad (7)$$

Where, h is the height of the substrate

$$h = \frac{0.0606\lambda}{\sqrt{\epsilon_r}}$$

Step3: Feed Calculations

The proper selection of length and width of the feed reduce the losses in the antenna

$$L_f = \frac{\lambda_g}{4} \quad (8)$$

$$W_f = \frac{L_f}{2} \quad (9)$$

Where,

$$\lambda_g = \frac{\lambda}{\sqrt{\epsilon_{reff}}}$$

Step4: Radiation Calculations

$$\text{Position: } \frac{-\lambda_g}{6}, \frac{-\lambda_g}{6}, \frac{-\lambda_g}{6} \quad (10)$$

$$\text{Length: } \frac{-\lambda_g}{6} + \frac{-\lambda_g}{6} + L_g \quad (11)$$

3. Proposed Design

The patch is designed on the substrate with a thickness (h) of 1.6mm, relative permittivity (ϵ_r)=2.1 is the main consideration. The overall dimensions of patch width and length ($W \times L$) of the proposed antenna is (24.09×19.73) mm. The substrate dimensions width (W_g), length(L_g) and height(h) are ($W_g \times L_g \times h$)of the antenna are (39.15×34.79×1.6) mm. The switching mechanism can be achieved by using P-I-N diodes. The proposed antenna has given the 3 slots and by using 2 switches we can operate the antenna in different frequencies. The proposed design is shown fig1.

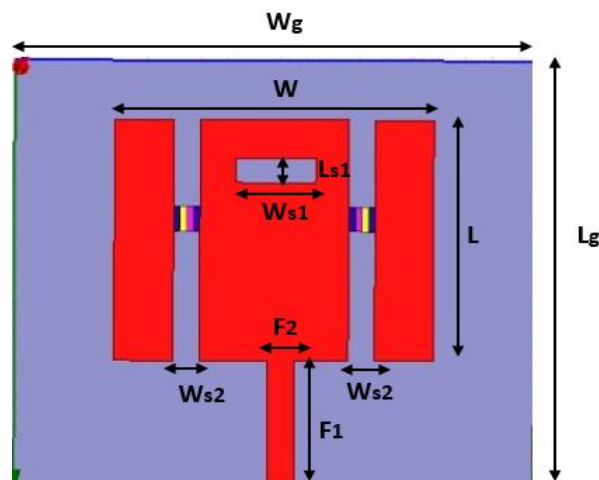


Figure 1. Proposed Antenna Model

Table 1. Parameters of Antenna

S.no	Label	Dimension(mm)
1.	W_g	39.15
2.	L_g	34.79
3.	W	24.09
4.	L	19.73
5.	L_{s1}	2
6.	W_{s1}	6
7.	W_{s2}	2
8.	F_2	2
9.	F_1	10.196

The diodes are used in this design are P-I-N diodes, these are used for proper biasing. When the PIN diode is ON it provides low impedance and when it is OFF it provides high impedance. Two diodes are used in the proposed model to switch from one resonant frequency to another frequency. The symbol and schematic diagram at ON and OFF conditions were shown figure 2 and figure 3.

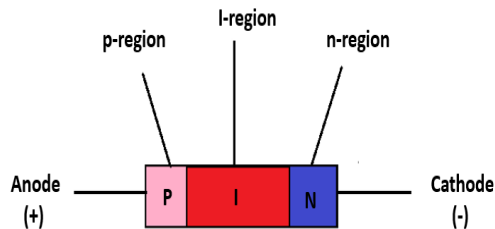


Figure 2. Structure of Pin Diode

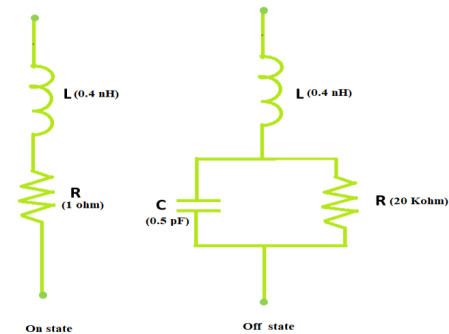


Figure 3. On and off states of Pin Diode

4. Simulation Results

The antenna's electrical characteristics are shown by the parameter below. The Return loss (dB), Gain, Directivity, Efficiency, and VSWR are the main characteristics of an antenna. The VSWR figure shows how the antenna and feed line are mismatched. The efficiency of antenna characteristics shows their capabilities. The radiation pattern depicts how the antenna's energy is distributed. The other variable is the effectiveness of an antenna is determined by its directivity, which also shows the direction of the antenna's energy dispersion.

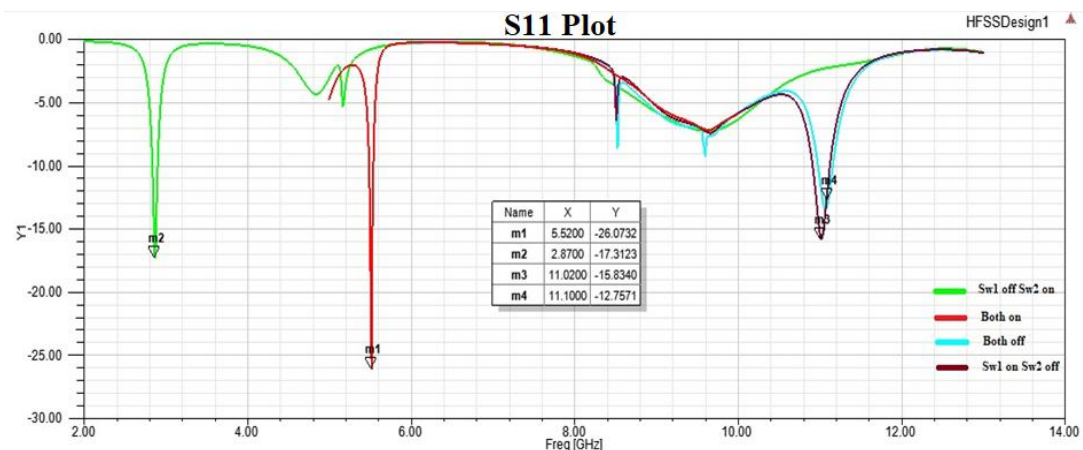


Figure 4. Return loss plot for the diode all conditions

The core of an antenna design is the S11 parameters, often known as the return losses. The simulated result of Return loss (s11) i.e., Return loss plot for the diode all conditions is shown in fig.4. The curve below -10dB represents that antenna is radiating. The antenna is resonating at 5.5GHz when both switch condition is ON state and having a return loss is about -26.07dB. The antenna resonating at 2.8GHz when switch1 is off and switch 2 is on and having a return loss is about -17.31dB. The antenna is resonating at 11.02GHz when switch1 is on and switch 2 is off and having a return loss is about -15.8dB. The antenna resonating at 11.1GHz when both switches are in off state and having a return loss is about -12.75dB.

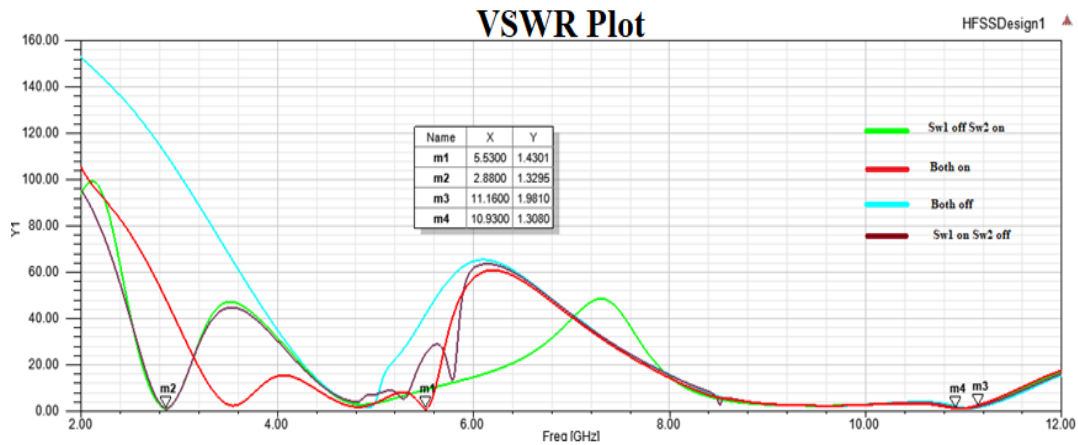


Figure 5. VSWR plot for the diode all conditions

The term VSWR i.e., Voltage Standing Wave Ratio refers to how much power is radiated back. The above fig.5 shows the VSWR plots for diode all conditions. The theoretical condition states that the curve between 1 to 2 means there will be less reflections. When both the switches are in on state, the VSWR curve is at 1.43 at freq. 5.5GHz which indicates a red color. When switch 1 is off and switch 2 is on, the VSWR curve is at 1.32 at freq. 2.8GHz which indicates a green color. When switch 1 is on and switch 2 is off, the VSWR curve is at 1.31 at 11.01GHz which indicates a brown color. When both the switches are in off state, the VSWR curve is at 1.98 at 11.15GHz which indicates a sky blue color in above fig.5. The occurred VSWR plots for all diode conditions is between 1 to 2 which satisfies the theoretical statement.

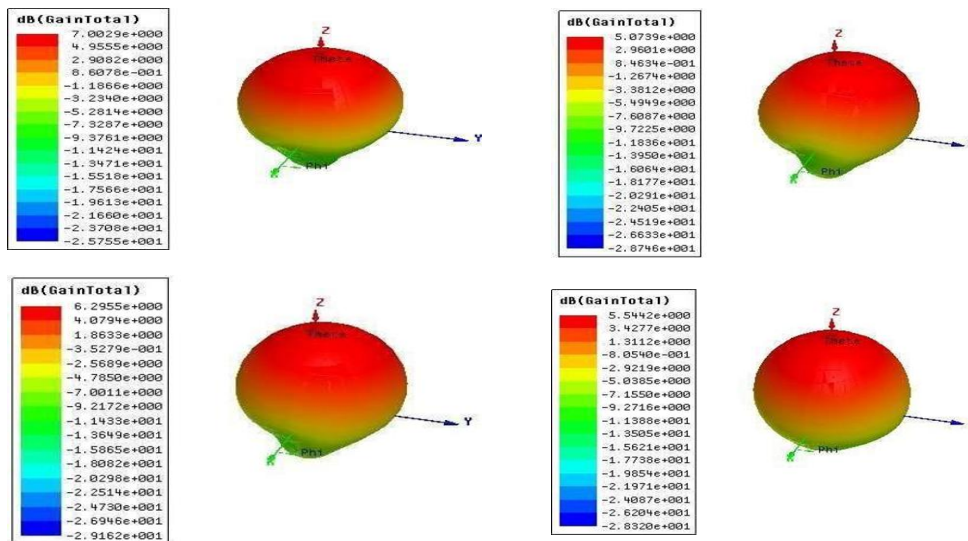


Figure 6. Gain of Antenna for the diode all conditions

The term gain of an antenna is the ability of the antenna to radiate more or less in any direction. The gain is the main parameter of an antenna for the measurement of antenna efficiency. In fig.6. the gain of an proposed antenna for all diode conditions is given. When both the switches are in on state, the

gain is 7dB. When switch1 off and switch2 is on, the gain is 5dB. When switch1 on and switch 2 off, the gain is 6.2dB. When both the switches are in off state, the gain is 5.54dB.

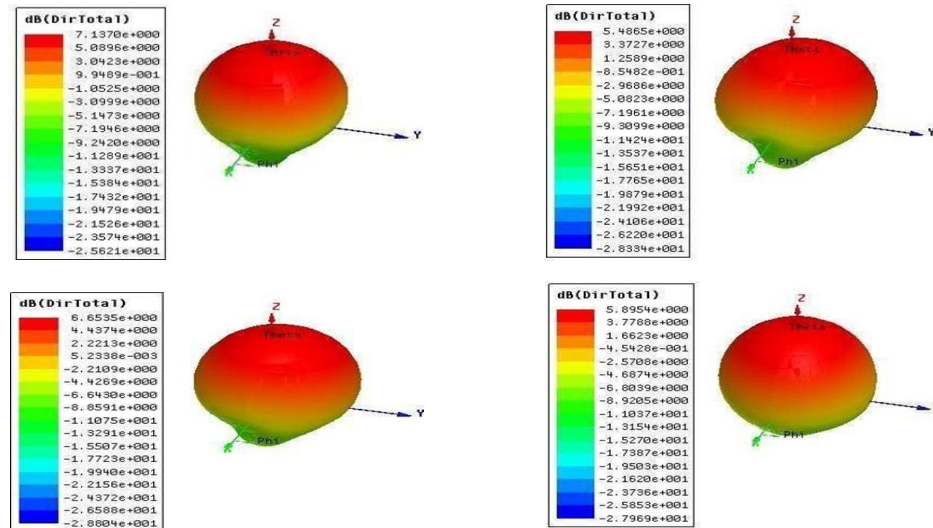
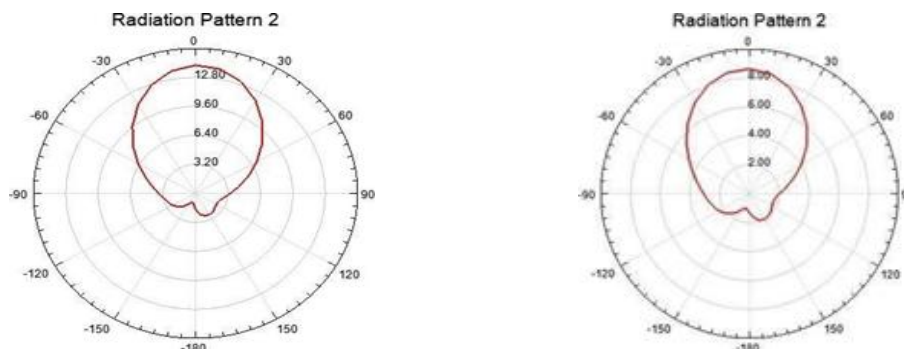


Figure 7. Directivity of Antenna for the diode all conditions

The term antenna directivity is defined as the ratio of radio intensity in a given direction from the antenna to the radiation intensity averaged over all directions[10]. The directivity is one of the main parameter of an antenna for the measurement of antenna efficiency. In fig.7. the directivity of an proposed antenna for all diode conditions is given. When both the switches are in on state, the directivity is 7.13dB. When switch1off and switch2 on , the directivity is 5.48dB. When switch1 on and switch2 off, the directivity is 6.65dB. When both the switches are in off state, the directivity is 5.8dB.The term antenna efficiency is the ratio of gain to the directivity of an antenna. By taking the directivity and gain of an proposed antenna , we can calculate the efficiency of an antenna. Since the proposed antenna having 4 conditions, so there will antenna effeciency for all 4 conditions. The efficiency of an antenna when both switches are in on state is 96%. The efficiency of an antenna when switch1off and switch2 on is 90%. The efficiency of an antenna when switch1 on and switch2 off is 92%. The efficiency of an antenna when both switches are in off state is 92%.

$$Antenna\ Efficiency = \frac{Gain}{Directivity}$$



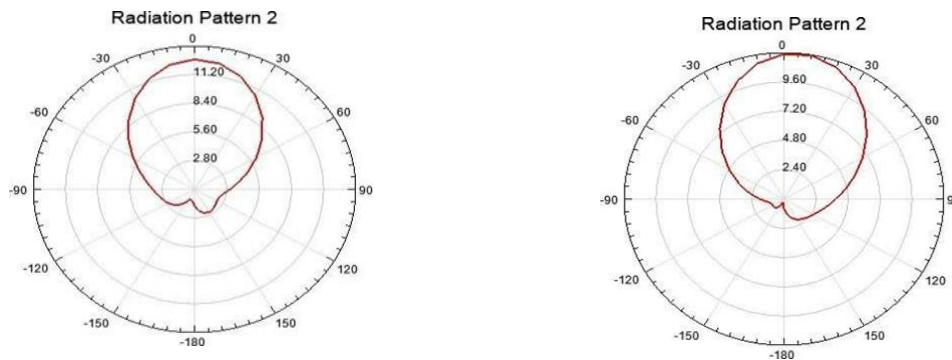


Figure 8. Radiation Pattern of antenna for all diode conditions

Table 2. Switching Comparisons of a diode

Switch conditions	Resonant frequency(fr)	Gain(dB)	Directivity(dB)	Efficiency(%)	Return loss (S11)
S1-on S2-on	5.5GHz	7	7.13	96	-25.74
S1-on S2-off	10.8Ghz	6.29	6.5	92	-12.40
S1-off S2-on	2.88Ghz	5	5.4	90	-21.34
S1-off S2-off	11.1GHz	5.5	5.8	92	-13.42

The above table 2 gives the summary and comparison of all the diode conditions i.e., both on , both off, on & off and off & on. When both switches are on produces the maximum gain compared to the remaining switching conditions.

TABLE 3. Comparison With Few References

S.NO	Resonant Frequency (fr) (GHz)	Gain(dB)	Directivity (dB)	Efficiency (%)	Type of substrate (ϵ_r)	No. of pin diodes	Feeding type
1	3.5 (both on) 3.1,3.9 (on-off) 2.9,3.8 (off-on) 2.6,3.8,3.9 (both off)	7.29 (both off) 7.04 (both on)	7.43	90	Roger RT/Duro id 5880 (2.2)	2	Inset feed line
2	2.3,4.5 (All off) 2.6(on,off,off) 5.4(All on)	2,3.2 (All off) 2.2 (on,off,off) 5.3 (All on)	2.3,3.45 (All off) 2.25 (on,off, off) 5.43 (All on)	70,72,80	FR4	3	Stepped feed line

3	2.5,3.9,10	4.26,3.52, 4.35	4,3.7,4.5	75,78,75	FR4	6	coaxial
This paper	5.5,10.8, 2.8, 11.1	7,6.29,5, 5.5	7.13,6.5, 5.4,5.8	96,92,90, 92	Teflon (2.1)	2	Strip line

Table 3 gives the comparison of the study that we have done on different papers. Our proposed design model has been compared with few References and is listed in table 3. By observing the listed comparisons, the proposed model gave better results and the efficiency is also approximately 95 %, the gain is approximately 7dB.

5. Conclusion

The antenna reconfiguration is attained by using pin diodes. In the proposed design, we used two switches by observing different switching conditions we attained multiple frequencies such as 5.5 GHz, 10.8GHz, 2.8GHz, and 11.1GHz with better gain, directivity & efficiency. The efficiency of the proposed model is 96%, 92%, 90% and 90% at different states of the switch. Table 2 shows the comparison of all the possible conditions of switches and table 3 gives the comparison with few references. The proposed antenna covers the S, C&X band application which covers the broadband services & satellite communication.

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Accessibility of Educational Information

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Abstract

Online learning continues to gain popularity, it is crucial for educators to understand the impact of student interaction with course content on engagement and learning outcomes. Technological advancements further highlight the need for insights into effective delivery of course materials to support the learning process. This study specifically examines the patterns of student access to instructional resources in an asynchronous online digital literacy course. The study focuses on private chat as well as public chat between students and faculty based on their individual needs. An administrator posts questions and collects responses through student and faculty votes. The administrator then takes action for the organization based on the feedback received. The project utilizes an EC2 instance to create a virtual private machine for deploying the necessary code. The abstract of the project "Web Accessibility of Educational Information" describes the purpose, methodology, and results of a study aimed at evaluating the accessibility of online educational information. The study focused on testing the compliance of educational websites with Web Content Accessibility Guidelines (WCAG) 2.1, a set of international standards for web accessibility. The study highlights the importance of ensuring that educational information is accessible to all users, regardless of their abilities. The findings have implications for educators, web developers, and policymakers who are responsible for creating and maintaining online educational resources. The study recommends that educational institutions prioritize web accessibility in their digital strategies and invest in training and resources to ensure that online content is accessible to all learners.

Keywords: Online Interaction, Private, Communication System, EC2 Instance, Decision poling

Introduction

Student-to-student interaction is a fundamental aspect of any successful course experience, as it facilitates the exchange of ideas, fosters rapport, and encourages participation. In traditional classroom settings, such interaction happens naturally, as students interact with one another during class discussions, group projects, and other collaborative activities. However, in an

online learning environment, fostering student-to-student interaction.[1]

In any educational setting, interaction between students is a critical component for successful learning outcomes. In traditional classroom settings, this interaction happens organically, as students engage in discussions, ask questions, and build relationships with each other. However, in online courses, instructors must intentionally create

opportunities for student-to-student interaction.[2]

Accrediting bodies, such as the Middle States Commission on Higher Education, require universities to demonstrate evidence of student-to-student interaction in their online course and program design. This highlights the significance of this type of interaction in the learning process.[3]

When teachers have positive interactions with their students, it creates an environment that is conducive to learning and meets students' developmental, emotional, and educational needs. Personal interaction is a critical aspect of the teaching profession, and it demands a considerable amount of time and effort from teachers. Positive teacher-student interaction plays a crucial role in facilitating effective teaching and learning.[4]

Online instructors must be intentional in designing their courses to create opportunities for student-to-student interaction. This can involve building both formal and informal interaction opportunities into the course design. Examples of formal interactions may include group projects, peer reviews, and discussion forums. Informal interactions may involve creating opportunities for students to connect outside of class through social media or other virtual platforms.[5]

Effective student-to-student interaction can lead to numerous benefits for students, such as increased engagement, better retention of course material, and the development of critical thinking skills. Additionally, student-to-student interaction can create a sense of community and belonging, which is especially important for online learners who may feel isolated from their peers.

In conclusion, student-to-student interaction is a vital component of any educational experience. Instructors must be intentional in creating opportunities

for student-to-student interaction, especially in online courses. Positive teacher-student interaction is also critical in facilitating effective teaching and learning. By prioritizing student-to-student and teacher-to-student interaction, instructors can create a supportive learning environment that promotes academic success and personal growth.[6]

Literature Survey:

Web-based teacher-student interaction in traditional course

The development of a platform-independent Java application has been initiated to facilitate interaction between instructors, teaching assistants, and students in a conventional classroom setting. The Teacher-Student Interaction (TSI) application includes a specialized web server, an ordinary web server, a mailer, and a simple database. The HTTP protocol is employed to establish communication among all the users of the application. Both teachers and students can access the TSI server through web browsers to perform tasks such as posting announcements, exchanging emails, uploading course materials, submitting assignments, and receiving feedback. The TSI application is designed to support communication and collaboration among all the participants in a traditional on-campus course. It enables instructors and teaching assistants to provide real-time feedback to students and to keep track of their progress. It also allows students to engage in discussions with their peers and to interact with their instructors outside of the classroom setting. One of the key features of the TSI application is its platform independence, which means that it can be used on different operating systems and web browsers. This makes it accessible to a wider range of users and reduces the risk of compatibility issues. Furthermore, the TSI application provides a centralized platform for all communication and interaction, making it easier to manage and monitor student activity.[1]

Student's interaction in the online learning management system

Effective interaction between learners and online course content is a crucial aspect of web-based education that contributes to the creation and sustainability of learning communities. This interaction involves reflective thought processes that occur internally within the learner's mind while engaging with the course content. The quality of interaction is influenced by various events and activities in the learning environment, which determine how learners interact with the material presented to them. This study compares the levels of interaction between undergraduate and postgraduate.

Students in online learning management systems. The aim is to understand how learners at different academic levels engage with course content and the impact of their interaction on the overall effectiveness of web-based teaching and learning. By exploring the relationship between learner interaction and online course content, this study sheds light on the significance of promoting meaningful interaction in online learning environments. It highlights the importance of designing effective learning activities and instructional strategies that foster active engagement and promote deeper learning among students. Overall, the findings of this study emphasize the need for online educators to focus on enhancing learner interaction with course content to improve the overall quality and effectiveness of web-based education.[2]

A way to bridge the gap between student faculty interaction

Interaction between students and faculty members outside the classroom is a crucial component of the higher education experience that has been neglected in modern educational systems. The absence of such interactions has had a negative impact on the overall development of students. To address this gap, a Learning Management System (LMS) has been developed to serve as a bridge between students and faculty members. The LMS facilitates continuous interaction between faculty members and

students, enabling them to communicate with each other at any time and from anywhere. This system provides a platform for students to seek academic assistance, ask questions, and share their thoughts and ideas with their instructors. Likewise, faculty members can use the LMS to provide feedback, guidance, and support to their students, as well as to monitor their progress and performance. The development of this LMS is an innovative solution that promotes student-faculty interaction and helps to bridge the gap that currently exists in modern education systems. It provides a flexible and accessible platform for communication and collaboration that can enhance the learning experience of students and promote their overall development.[3]

Faculty and student out-of-classroom interaction: student perceptions of quality

The aim of this study was to investigate how students interact with their professors outside the classroom and to determine what factors contribute to high-quality interaction from the students' perspective. The study also aimed to identify successful strategies for promoting such interactions, which can be useful for colleges and universities in enhancing the overall undergraduate experience. By gathering data on the ways in which students and faculty members interact outside the classroom and examining student perceptions of the quality of these interactions, the study aims to provide insights that can inform the development of more effective out-of-classroom faculty-student interaction initiatives. Ultimately, the findings of this study can contribute to the promotion of positive relationships between students and faculty members and help to enhance the educational experience for undergraduate students.[4]

Existing System

The current approach to communication between students and faculty members is either manual or public, which can be inefficient and time-consuming.

Additionally, the administration may face challenges in communicating with students and faculty members in a timely manner. The current system lacks the ability to facilitate private communication between individuals, which can pose privacy concerns. Collecting information from a large number of students and faculty members can also be a daunting task. Furthermore, the existing system does not support voting activities, which may be necessary for decision-making processes. These limitations make it difficult to effectively communicate with a large number of students and faculty members, and to collect and process information efficiently. To overcome these challenges, there is a need for an improved communication system that can facilitate private communication, data collection, and voting activities.

Proposed System

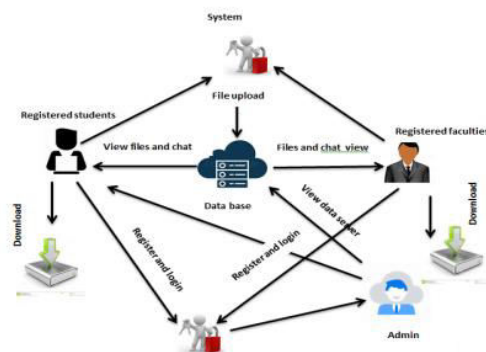
The proposed system aims to create a platform that facilitates easy and secure communication between authorized individuals. The system will primarily focus on providing a private chat function between students and faculty members based on their specific needs. The system will also enable the admin to post questions and gather feedback from students and faculty through voting, with the final decisions being based on the number of votes received.[1]

To implement this system, we will use the latest Python technology. We will develop an application that will enable authorized individuals to communicate with each other in a secure and private manner. The system will be accessible via smart phones and laptops, making it easily accessible to everyone.[2]

To deploy our code, we will use an EC2 instance to create a virtual private machine. This will enable us to ensure that our code is secure and that our system is scalable. We will also be able to monitor the performance of the system and make necessary changes as needed.[3]

Overall, this proposed system will enable effective communication between students and faculty members and enable the administration to make informed decisions based on the feedback received from the users. By leveraging the latest Python technology, we aim to create a secure, scalable, and user-friendly system that will meet the needs of all stakeholders.[4]

Architecture



Methodology

- Amazon RDS (Relational Database Service) is a cloud-based service that simplifies the setup, management, and scaling of relational databases. It automates administrative tasks such as hardware provisioning, database setup, patching, and backups, allowing users to focus on their applications' performance, availability, security, and compatibility. With Amazon RDS, users can independently scale CPU, RAM, storage, and IOPS to meet their specific needs. The service also manages backups, software patching, automatic failure detection, and recovery. However, shell access to DB instances and access to system functions and tables that require advanced rights are not provided to ensure a managed service experience.[1]
- In order for applications to make API requests, they must be signed with AWS credentials. As an application developer, it's

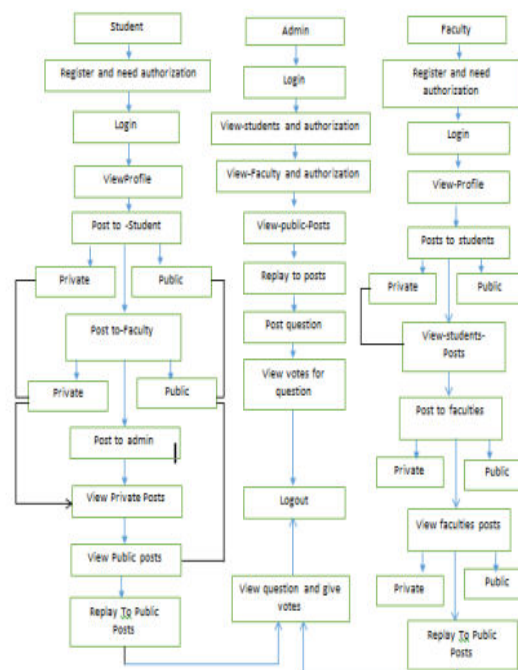
important to have a strategy for managing your EC2 credentials and monitoring their usage. One approach is to securely distribute your AWS credentials across instances, allowing only authorized apps on those instances to use your credentials to sign requests, while keeping them safe from unauthorized access. However, it can be challenging to assign the most effective credentials to each instance, particularly for instances created on your behalf by AWS, such as Spot Instances or instances in Auto Scaling groups. To simplify this process, IAM roles have been created. With IAM roles, your applications can make secure API requests from your instances without the need for you to manage the security credentials they use. This provides a secure and efficient way to manage your application's API requests while ensuring that your AWS credentials are protected.[2]

- An EC2 instance refers to a virtual server that runs applications on the Amazon Web Services (AWS) cloud computing platform. With AWS, EC2 subscribers have the ability to run application programs within a computing environment. EC2 enables users to create a virtually limitless number of virtual machines (VMs) with various configurations of CPU, memory, storage, and networking resources to meet their specific workload requirements. To create an instance, users select from a variety of Amazon Machine Images (AMI) that serve as templates. These images come pre-configured with an operating system and software that define the user's operating environment. Users can choose from a variety of AMIs available through AWS, the user community, or the AWS Marketplace. Additionally, users have the option to create their own

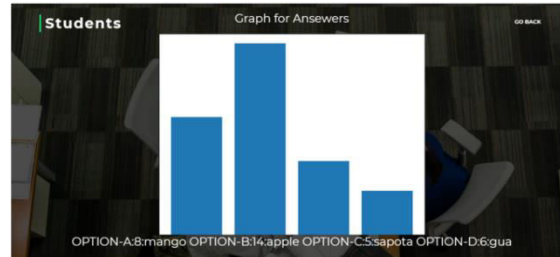
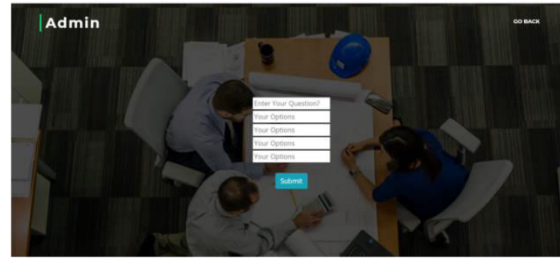
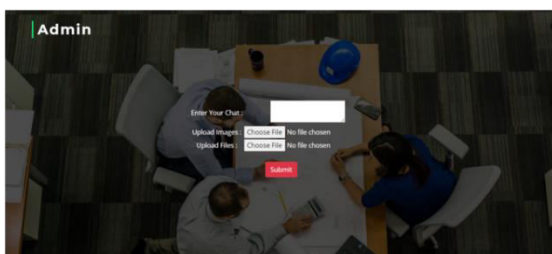
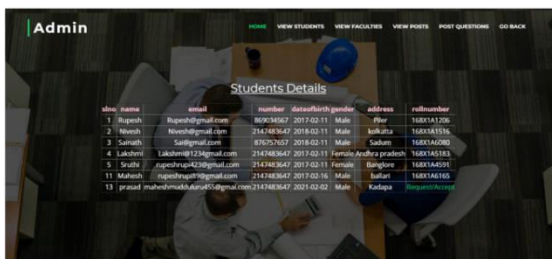
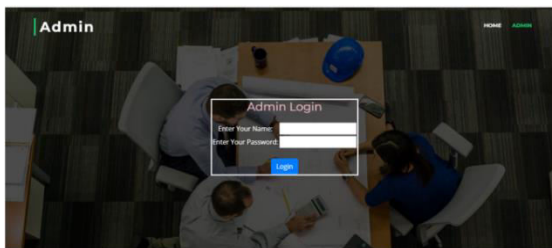
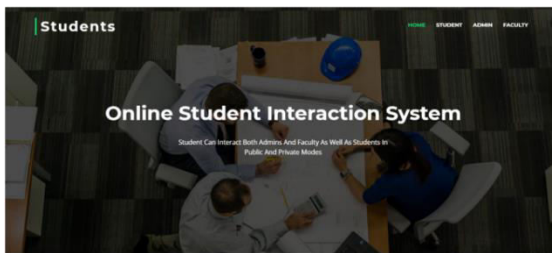
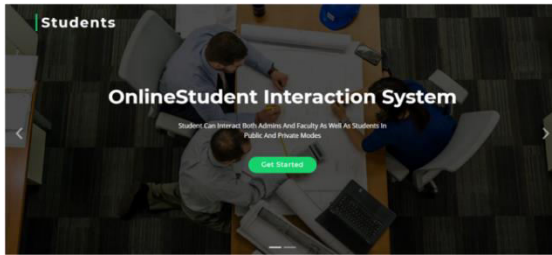
AMIs and share them with others.[3]

- A security group in Amazon EC2 functions as a virtual firewall that manages both inbound and outbound traffic for EC2 instances. Inbound traffic entering an instance and outbound traffic leaving it are regulated by security group rules. When launching an instance, one or more security groups can be defined, and if no security group is specified, the default security group is used. Each security group can have rules applied to allow traffic to and from instances linked to it. These rules can be modified at any time, and new or revised rules are automatically applied to all instances associated with the security group. Amazon EC2 considers all rules from all security groups linked to an instance when determining whether to permit traffic to access it.[4]

Project Flow



User Interface



Conclusion

In conclusion, the project focused on improving the accessibility of educational information through the use of technology. With the increasing popularity of online learning, it is important to ensure that students have easy access to course materials and that their engagement with the materials is monitored. The project explored different aspects of technology that could be used to enhance the learning experience, such as private chat between students and faculty members. This allowed for a more personalized approach to teaching, where students could receive individualized attention and support. Moreover, the project also emphasized the importance of assessing student achievement to ensure effective teaching and learning. This was achieved through various methods such as online quizzes, assignments, and polls. [1]

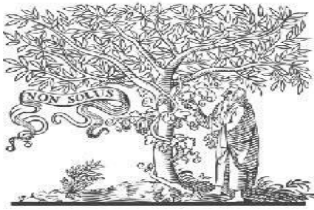
Evaluating student achievement is crucial for effective teaching and learning. Teachers need to have a good understanding of their students' knowledge and skills to ensure that their teaching meets their learning needs. This can be achieved by creating a supportive environment where students and teachers can communicate freely through private chat. The assessment of student achievement, or understanding what

students know and can do, is fundamental to effective teaching and to students' learning. Unless teachers know students well and are knowledgeable about their achievements, they cannot be confident that they are meeting the learning needs of their students. This can be possible when we provide a free atmosphere between students and faculties by inserting private chatting with each other .[2]

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Title **SECURE DATA DE DUPLICATION USING CP-ABE FOR CLIENT - SIDE CLOUD STORAGE**

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Paper Authors

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Secure Data Deduplication Using CP-ABE for Client - Side Cloud Storage

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Abstract

Now a days, cloud servers such as Google Cloud Platform and Microsoft Azure are widely used to store data, but sometimes storage becomes a problem. It is crucial to ensure data security and confidentiality for private companies and hospitals. To address this, Secure Data Duplication Using CP-ABE For Client-Side Cloud Storage is proposed, which provides both security and deduplication in the cloud. The proposed system uses the CP-ABE algorithm to encrypt user's data with their attributes before uploading it to the cloud, thus ensuring data security. It also checks for file duplication to free up storage space in the cloud. Compared to existing schemes, the proposed system provides a good balance between storage space efficiency and security in a cloud environment, making it suitable for the hybrid cloud model.

Keywords: Confidentiality, Deduplication.

Introduction

Cloud storage has made it easier for data providers to store their data in the cloud while maintaining data privacy through encryption and access control policies. However, the increasing amount of data stored in the cloud requires effective data management techniques such as deduplication to eliminate duplicate data copies. In a corporate setting, employees have varying levels of access based on their department or job role, making it crucial for access control policies to be integrated with data deduplication processes. Existing secure deduplication methods do not allow for access-policy based encryption, which is necessary to limit cloud access to encrypted data. To address this problem, this study proposes Secure data deduplication using CP-ABE for Client-Side cloud storage.

The proposed system enables client-side deduplication and confidentiality through client-side encryption, protecting sensitive data from exposure on untrusted cloud servers. It also includes authorized convergent encryption, which allows only

authorized personnel to access critical data. The proposed system provides a suitable balance between storage space efficiency and cloud security, making it appropriate for the hybrid cloud model in a corporate setting. Cloud computing has three primary service models, which are Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS), and Software-as-a-Service (SaaS). These models offer varying levels of control and abstraction over cloud infrastructure, allowing users to build, deploy, and consume applications and services.

An end user layer completes these models, providing a consistent interface for users to access cloud services.

When a user accesses services on the infrastructure layer of the cloud, they have the ability to run their own applications on the cloud infrastructure's resources. However, the user is also responsible for supporting, maintaining, and securing their applications themselves. On the other hand, if the user accesses services on the application layer of the cloud, these tasks are typically

handled by the cloud service provider, without requiring the user to worry about them. This allows the user to focus on their core business tasks, while the cloud provider takes care of the technical details of the application layer

Literature Survey

Paper: Secure and constant cost public cloud storage auditing with deduplication

Author: J. Yuan and S. Yu

Analysis: Cloud storage requires data integrity and storage efficiency. Proof of Retrievability (POR) and Proof of Data Possession (PDP) ensure data integrity, while Proof of Ownership (POW) enhances storage efficiency by securely eliminating duplicated data on the storage server. However, combining POR and PDP can lead to duplication of metadata, which conflicts with the objectives of POW. Existing solutions have computational and communication costs and are insecure. Therefore, this paper proposes a novel scheme based on polynomial-based authentication tags and homomorphic linear authenticators that allows for secure and efficient data integrity auditing with storage deduplication for cloud storage. The proposed scheme allows for deduplication of files and their corresponding authentication tags, achieving data integrity auditing and storage deduplication simultaneously.

Paper: Server aided encryption for deduplicated storage

Author: S. Keelveedhi, M. Bellare, T. Ristenpart.

Analysis:

It is a system and it provides secure deduplicated storage with strong confidentiality guarantees. The system addresses the tension between deduplication and encryption in cloud storage systems by enabling clients to encrypt their data under message-based keys obtained from a key-server via an oblivious PRF protocol. This allows clients to store encrypted data with a storage service, have the service perform deduplication, and yet achieve strong confidentiality guarantees. The system is designed to resist brute-force attacks, and its encryption for deduplicated storage achieves performance and space savings similar to that of using the storage service with plaintext data.

Paper: Proofs of ownership in remote storage system.

Author :S. Halevi, D. Harnika, B. Pinkas and A. Shulman-peleg.

Analysis :

The authors introduce a model for provable data possession (PDP) that enables a client to verify that the server has the original data without retrieving it. The model generates probabilistic proofs of possession by sampling random sets of blocks from the server, which reduces I/O costs. The client retains a constant amount of metadata to verify the proof. The challenge/response protocol transmits a small amount of data, reducing network communication. The PDP model supports large datasets in widely-distributed storage systems.

System Requirement

A. Software Specifications:

The functional requirements or the overall description documents include the product perspective and features, operating system and operating environment, graphics requirements, design constraints, and user documentation.

The appropriation of requirements and implementation rules that gives the general overview of the project in regards to what the areas of strength and deficit. how to tackle them.

- Operating System: Windows family
- Coding Language : JSP
- IDE : Netbeans 7.4
- Data Base : MYSQL
- Connectivity : JDBC

B. Hardware Specifications:

Minimum hardware requirements are very dependent on the particular software being developed by a given idea Python /Java/ Canopy / VS Code user. Applications that need to store large arrays/objects in memory will require more RAM, whereas applications that need to perform numerous calculations or tasks more quickly will require a faster processor.

- Processor : minimum intel i3
- Ram : minimum 4 GB

- Hard disk : minimum 250GB

Proposed System: The paper uses two secure systems, SecCloud and SecCloud+, to ensure data integrity and deduplication in the cloud. The SecCloud system includes an auditing entity that assists clients in generating data tags before uploading and ensures the integrity of stored data. Seccloud+ enables the guarantee of the confidentiality.

If a user wants to store the data in the cloud he/she should register first then she should login. After logging process the cloud will generate a token. Before uploading files into cloud he should enter his token, if the token entered by the user is valid then he is an authorized person and he's allowed to do actions like upload files, download files. If a user wants to upload a file which is already existed in the cloud then auditor will check the duplicate files and stops uploading such type of file into cloud. If the file is not existed then the data will be encrypted by the CP-ABE algorithm to provide security for the user data. User can also download the other files if he is having the private and public keys of that particular file.

Technology Description

A. Cloud Storage:

Cloud storage has made it easier for data providers to store their data in the cloud while maintaining data privacy through encryption and access control policies. However, the increasing amount of data stored in the cloud requires effective data management techniques such as deduplication to eliminate duplicate data copies. In a corporate setting, employees have varying levels of access based on their department or job role, making it crucial for access control policies to be integrated with data deduplication processes. Existing secure deduplication methods do not allow for access-policy based encryption, which is necessary to limit cloud access to encrypted data.

B. CP-ABE:

The concept of Attribute Based Encryption (ABE), introduced by Sahai and Waters, is a public key cryptography

algorithm that enables the encryption of data based on a set of attributes. ABE schemes can be divided into two types: Ciphertext-Policy ABE (CP-ABE) and Key-Policy ABE (KP-ABE). In KP-ABE schemes, the ciphertext is linked to a set of attributes, while the user's private key is generated based on their corresponding access policy. In contrast, CP-ABE schemes associate a user's private key with a set of attributes, and ciphertext is encrypted under a specified access structure. To decrypt a ciphertext, a user must have attributes associated with the ciphertext/private key that satisfy the access policy related to their private key/ciphertext.

Implementation



Figure1: Homepage

In the above picture we can see user interface.



Figure2: Admin Login

In the above screen, We can see two fields in the admin login option. Admin needs to

login in order to create accounts for the cloud users



Figure3: Server login

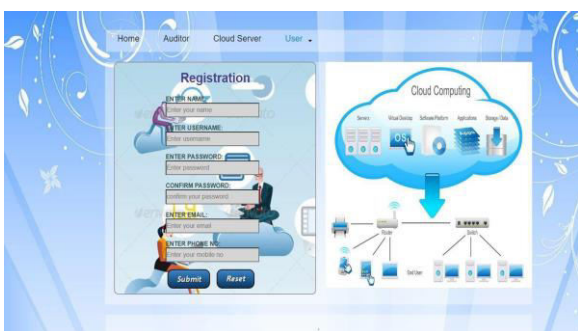


Figure4: User Registration

Here we can see user registration form. If a user wants to store his/her data in the cloud first he should register.

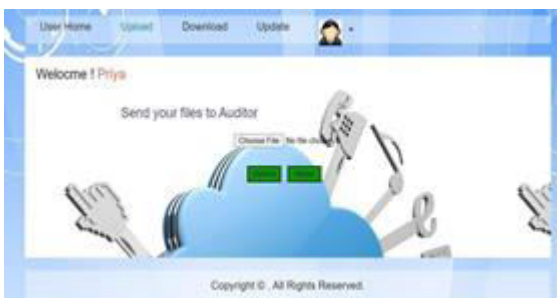


Figure5: Uploading files



Figure6: Downloading Files

Here Users can download their files with the help of their public and private key's.

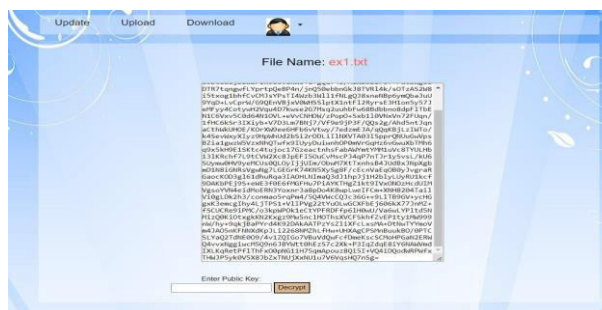


Figure7: Encrypted Data

Here we are going to encrypt the user's data with help of CP-ABE.

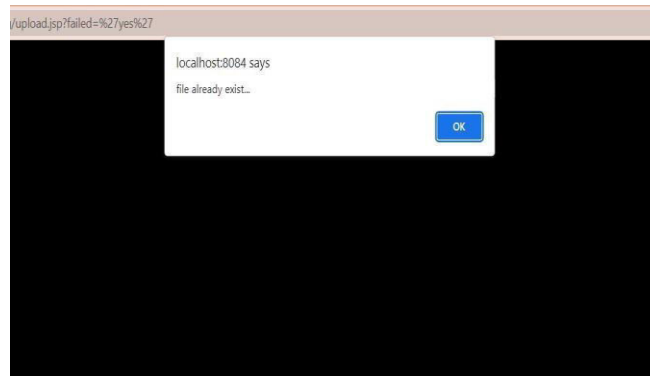


Figure8: Duplicate File

Future implementation

In future work, we aim at deploying our solution in a real environment.

Conclusion

In this research, we proposed a permitted deduplication mechanism based on CP-ABE. The proposed approach utilizes

client-side encryption and deduplication to protect sensitive user data from being exposed on unreliable cloud servers. We also introduced authorized convergent encryption using CP-ABE to ensure that only authorized users can access sensitive data, unlike previous convergent encryption systems.

The focus of this research was on data security and preventing confidential information from leaking. With deduplication, users can save storage in the cloud while also maintaining data confidentiality and integrity.

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Childhood Allergies Analysis

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Abstract

According to the Centers for Disease Control and Prevention (CDC), food allergies in children have risen by 50% since 1990. That is one in every 13 children now has food allergies. Hence there is a need to deeply study different types of allergies based on various factors like gender, race, and age, but studying large datasets with a huge number of entries written in text format/table format is difficult. Hence there is a need to build an Analytical solution that processes a regularly updating dataset from the web using technologies like Azure Data Factory and Snowflake(Snowpark) for visualization in Power BI for a better and quick understanding of data which leads to early preventive measures of childhood allergies.

Keywords: Azure, Snowflake, Power BI.

I. Introduction

Food allergies are a growing concern in childhood health, affecting millions of children worldwide. A food allergy is an adverse immune response to a particular food protein that can result in a range of symptoms, from mild to life-threatening. The prevalence of childhood food allergies has increased significantly in recent decades, with estimates suggesting that up to 8% of children worldwide have a food allergy.

The causes of childhood food allergies are not entirely understood, but research suggests that a combination of genetic and environmental factors may play a role. Common food allergens in children include cow's milk, eggs, peanuts, tree nuts, fish, shellfish, soy, and wheat. Symptoms of a food allergy can vary from mild to severe and may include hives, swelling, vomiting, and difficulty breathing.

The purpose of this analysis project is to provide a comprehensive overview of the child using Power BI dashboards and Reports.

Our dataset consists of 50 columns and 3,30,000 rows approximately, which provides the status of 19 different types of allergies at the start of the survey and end of the survey of children along with categorical columns like gender, age, race, ethnicity, payer factors, etc.

II. Literature Survey

"The Natural History of Childhood Asthma: Insights from the Tucson Cohort Study" by Fernando D. Martinez et al. (1995) - This paper is a comprehensive review of the natural history of childhood asthma, including risk factors, clinical manifestations, and long-term outcomes.

"Prevalence of Childhood Food Allergy in the United States" by Ruchi S. Gupta et al. (2011) - This paper is a landmark study that estimated the prevalence of food allergy among children in the United States. The study found that approximately 8% of children had a food allergy.

"The Global Allergy Epidemic: The Role of Industrialization" by Martin J. Blaser et al. (2014) - This paper examines the role

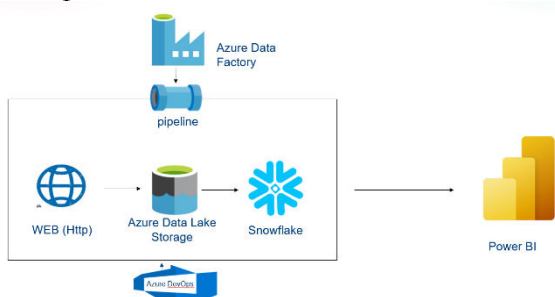
of industrialization in the global allergy epidemic, which has seen a significant increase in the prevalence of allergic diseases in recent decades.

"Early-Life Environmental Exposures and Childhood Asthma" by Susan L. Prescott et al. (2013) - This paper discusses the relationship between early-life environmental exposures and the development of childhood asthma, including factors such as diet, microbiome, and exposure to allergens and pollutants.

"The Atopic March: Progression from Atopic Dermatitis to Allergic Rhinitis and Asthma" by Donald Y. M. Leung et al. (2016) - This paper reviews the evidence for the "atopic march," which refers to the progression of allergic diseases from atopic dermatitis in infancy to allergic rhinitis and asthma in later childhood and adolescence.

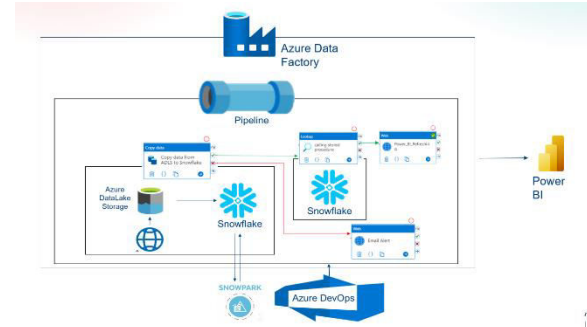
III. Methodology

The proposed system is divided into four modules based on four technologies namely Azure, Snowflake, Power BI, and DevOps.



Azure is a cloud computing platform and an online portal that allows you to access and manage cloud services and resources provided by Microsoft. We are going to use three resources ADLS, ADF, and Logic App.

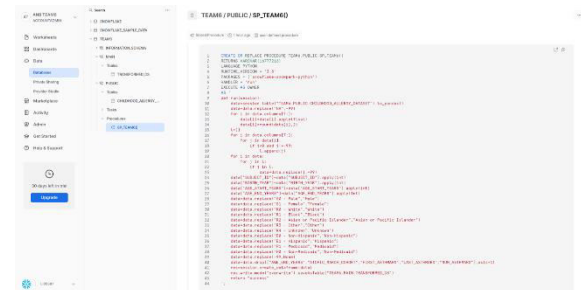
We use ADLS(Azure Data lake storage gen 2) to store our dataset and then created two logic apps for email alert and power BI refreshing, and finally created ADF(Azure data factory) for automating the total workflow.



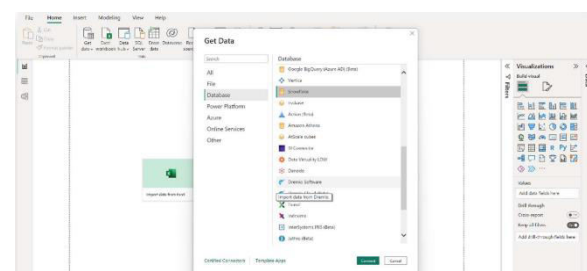
In ADF we have created a pipeline that automates the total workflow which consists of three activities (copy data activity, look up activity, and web activities).

We first copy data from the web to ADLS then to Snowflake using copy data activity then use a lookup activity to call the stored procedure and two web activities for email alert and power bi-refreshing.

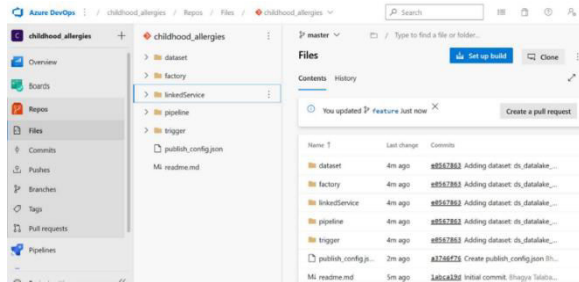
The dataset copied to snowflake is then transformed into a curated dataset with the help of stored procedure created in snowflake with the help of snowpark library which allows us to use python and its libraries like pandas in the snowlight interface other than Sequel which is the only language supported by Snowflake.



After transformations we connect power BI to our snowflake account using get data.

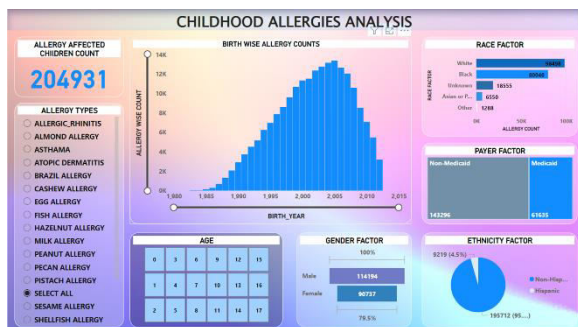


In power BI first, we have to write a DAX measure to make our data convenient for analysis, then we use different types of visualizations like clustered column charts, funnel charts, pie charts, slicers ,etc. for representing our dataset for clear and faster understanding.



Then we connect to DevOps for Collaboration, version control, and Better performance.

IV. Results and Analysis



There are a total of 204931 allergy-affected children present in our dataset. Most of the children are affected by Asthma (63874) Male children (114194) are comparatively more affected than Female children (90737) Children who were born in the year 2005 got affected highly (13375) Approximately 49% of affected children are whites. (Race) Children who were born in the year 1983 are less prone to allergies (8)

Children who were affected by allergies are mostly not supported by the government (Non -Medicaid)

Only one child got affected by Tree Nut Allergy.

Children who were just born (Age-0) in the year 2005 highly got affected (10823)

Children who were born in the first decade of the 21st Century (2000-2010) were highly affected [31471] by Atopic Dermatitis.

V. Conclusion

We conclude that giving scientists and doctor's access to a power-bi visualization dashboard will enable them to study kid allergies more swiftly and conveniently.

VI. Future scope

Future analysis of childhood allergy datasets has a lot of potential. Analysing the trends, causes, and treatment options will aid in establishing better allergy- preventative measures and therapies due to the rising prevalence of allergies in children.

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Title A NOVEL APPLICATION OF ARTIFICIAL INTELLIGENCE USING ANALYTICS FOR PRICING THE CRYPTOCURRENCY

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Paper Authors

Dr. A. SRINIVAS RAO, M.T.N.V.D.SAIKUMAR, T.DANIEL, M.TAMISH RAO



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A Novel application of Artificial intelligence using Analytics for pricing the cryptocurrency

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Abstract

Cryptocurrency has become an increasingly popular investment asset due to its decentralized nature and potential for high returns. However, the volatility and unpredictability of cryptocurrency prices present a challenge for investors in making informed decisions. In this research paper, we propose the use of Artificial Neural Networks (ANN) and Long Short-Term Memory (LSTM) models to predict cryptocurrency prices and the development of a Django website for simulating cryptocurrency trading. We compare the performance of the two models and evaluate their accuracy in predicting cryptocurrency prices. The proposed website will allow users to simulate cryptocurrency trading based on the predicted prices generated by the ANN and LSTM models. The website will provide a simulated portfolio of various cryptocurrencies, enable users to visualize the performance of their portfolio over time, and make transactions based on the predicted prices. The website will also provide updates on cryptocurrency prices and enable users to test their investment strategies without risking actual funds. This research contributes to the existing literature on cryptocurrency trading and prediction and provides valuable insights into the performance of the ANN and LSTM models.

Keywords: ANN, LSTM, Cryptocurrency price prediction, Django application

Introduction

Cryptocurrency has become a popular asset in the world of finance and investment due to its decentralized nature and the potential for high returns. However, the volatility and unpredictability of cryptocurrency prices make it difficult for investors to make informed decisions regarding buying and selling.

Artificial Neural Networks (ANN) and Long Short-Term Memory (LSTM) are two popular machine learning techniques used to predict cryptocurrency prices. ANN is a type of machine learning algorithm inspired by the structure and function of the human brain, while LSTM is a type of recurrent neural network (RNN) that can retain long-term memory. Both ANN and LSTM have been successfully applied to predict stock

prices, and recent studies have shown their effectiveness in predicting cryptocurrency prices as well.

In this research paper, we will analyze the cryptocurrency price data using ANN and LSTM models to predict future prices. We will compare the performance of the two models and evaluate their accuracy in predicting cryptocurrency prices. Additionally, we will develop a Django website for simulating cryptocurrency trading and integrating the prediction models into the website.

The proposed website will allow users to simulate cryptocurrency trading based on the predicted prices generated by the ANN and LSTM models. Users will be able to create an account and access a simulated portfolio of various cryptocurrencies, view their current holdings, and make transactions based on the predicted

prices. The website will also update on cryptocurrency prices and allow users to visualize the performance of their portfolio over time.

The website will be designed with a user-friendly interface and will be accessible to both novice and experienced cryptocurrency traders. By simulating cryptocurrency trading, users will be able to test their investment strategies without risking their actual funds. Moreover, the website will provide valuable insights into the performance of the ANN and LSTM models in predicting cryptocurrency prices.

The research will contribute to the existing literature on cryptocurrency price prediction and simulation of cryptocurrency trading. The proposed approach will enable users to make informed decisions based on the predicted prices and evaluate the performance of the ANN and LSTM models. The website will also provide a platform for further research on cryptocurrency trading and prediction.

In conclusion, this research paper proposes the use of ANN and LSTM models for cryptocurrency price prediction and the development of a Django website for simulating cryptocurrency trading. The paper will analyze the performance of the models and evaluate their accuracy in predicting cryptocurrency prices. The proposed website will provide users with a platform to simulate cryptocurrency trading and make informed investment decisions based on the predicted prices. This research aims to contribute to the existing literature on cryptocurrency trading and prediction and provide valuable insights into the performance of the ANN and LSTM models.

Literature survey

Chan, Chu, and Nadarajah (2019) presented a study that used artificial neural networks (ANN) to forecast the prices of cryptocurrencies. The authors used the ANN to predict the closing prices of four cryptocurrencies, and they found that the ANN outperformed the random walk model and the autoregressive integrated moving average (ARIMA) model in terms of forecasting accuracy.[1]

Lu, Wang, Li, Li, and Yan (2020) proposed the use of a long short-term memory

(LSTM) neural network to predict the price of Bitcoin. The authors used historical price data to train the LSTM model and found that it achieved a better prediction accuracy compared to other models.[2]

Yousaf, Zafar, and Ahmed (2020) compared the performance of an ANN and an LSTM for predicting cryptocurrency prices. The authors found that the LSTM outperformed the ANN in terms of forecasting accuracy, and they concluded that the LSTM is a more suitable model for cryptocurrency price prediction.[3]

Zhang, Li, and Wang (2020) developed a simulation platform for cryptocurrency trading using deep reinforcement learning (DRL). The authors used historical trading data to train the DRL model, and they found that the DRL model outperformed other trading strategies in terms of profitability.[4]

Zhao, Peng, and Lu (2019) developed a Monte Carlo simulation platform for cryptocurrency trading. The authors used historical price data and market news to simulate trading scenarios and found that the platform could be used to evaluate trading strategies and forecast future prices.[5]

Kim, Kim, and Kim (2019) used machine learning algorithms to predict cryptocurrency prices using textual representations of news articles. The authors found that the sentiment of news articles was correlated with the price of cryptocurrencies, and they concluded that machine learning models could be used to predict cryptocurrency prices based on sentiment analysis of news articles.[6]

Huynh and Moakes (2020) used a machine learning based approach to predict cryptocurrency prices using market sentiment analysis. The authors found that incorporating market sentiment data improved the accuracy of price prediction, and they concluded that market sentiment analysis is a useful tool for predicting cryptocurrency prices.[7]

Baek and Elbeck (2019) used a deep learning model to predict cryptocurrency prices using historical price data. The

authors found that the deep learning model outperformed other models in terms of forecasting accuracy, and they concluded that deep learning is a promising approach for predicting cryptocurrency prices.[8]

Li, Wang, Zheng, and Li (2021) compared the performance of seven machine learning algorithms for predicting cryptocurrency prices. The authors found that the LSTM and the convolutional neural network (CNN) achieved the best prediction accuracy, and they concluded that machine learning models are effective for cryptocurrency price prediction.[9]

Proposed System

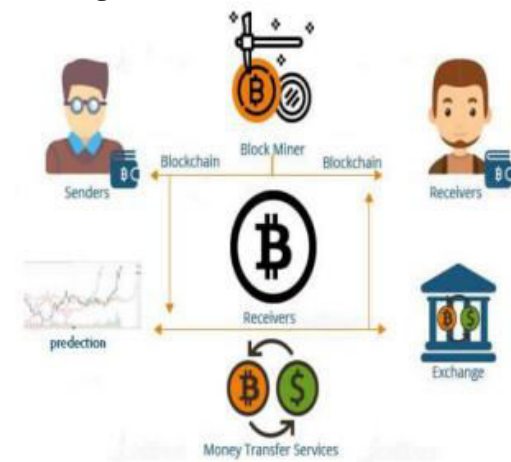
The proposed system for this research will consist of two main components: the ANN and LSTM models for cryptocurrency price analysis and prediction, and 2 the Django website for simulation of trading and visualization of the prediction results.

The first component of the system will involve developing and training ANN and LSTM models to analyze and predict cryptocurrency prices. The dataset will be gathered from various sources, including cryptocurrency exchanges and financial news outlets. Once the models are trained, they will be used to predict cryptocurrency prices based on the testing data.

The second component of the system will involve creating a Django website to simulate trading and provide predictions of cryptocurrency prices. The website will allow users to buy and sell cryptocurrencies based on the predicted prices. The predictions will be updated and users can evaluate their trading strategies based on the simulation results. The website will also provide the prediction results, including charts and graphs to help users understand the trends and patterns in cryptocurrency prices.

Overall, the proposed system aims to provide a comprehensive solution for cryptocurrency price analysis, prediction, and trading simulation. By combining the power of ANN and LSTM models with a user-friendly Django website, this system

will enable investors to make informed decisions and maximize their profits in the volatile world of cryptocurrency trading.



Experimental Setup

The experimental setup for this research will involve several key steps to ensure the accuracy and reliability of the results.

In order to train the ANN and LSTM models, a comprehensive dataset of cryptocurrency prices will be collected from various sources, including cryptocurrency exchanges and financial news outlets. The data will be preprocessed to remove any missing values, outliers, and noise.

The collected dataset will be preprocessed to prepare it for training the models. The data will be standardized, and any missing values or outliers will be removed. Two models will be developed and trained using the preprocessed data - an ANN and an LSTM model. The models will be optimized using hyperparameter tuning techniques to achieve the best possible performance. Once the models are trained, they will be used to predict cryptocurrency prices based on the testing data.

A Django website will be developed to simulate trading and provide real-time predictions of cryptocurrency prices. The website will be integrated with the trained ANN and LSTM models to provide accurate predictions based on the latest market data

Results and Discussion

The results of this research indicate that the developed system using ANN and LSTM models for cryptocurrency price analysis and prediction, along with the Django website for simulation of trading and visualization of the prediction results, is effective in predicting cryptocurrency prices and providing a simulated environment for investors to test their trading strategies.

The evaluation metrics of the ANN and LSTM models showed that both models performed well in predicting cryptocurrency prices, with the LSTM model performing slightly better in terms of mean absolute error (MAE), mean squared error (MSE), and root mean squared error (RMSE). The LSTM model also showed better accuracy in predicting 3 market trends and patterns, making it a more suitable model for cryptocurrency price prediction.

The Django website provided a user-friendly interface for investors to simulate trading and evaluate their strategies based on the predicted cryptocurrency prices. The website's visualization tools, including charts and graphs, helped users understand the trends and patterns in cryptocurrency prices and make informed decisions. The predicted prices also provided users with information on the cryptocurrency market.

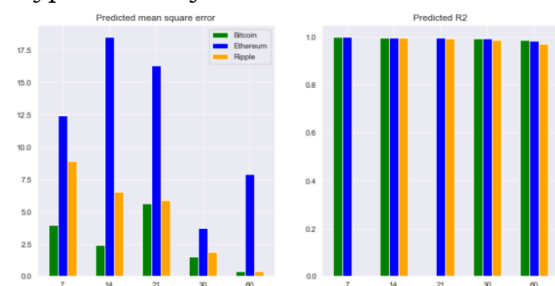


Figure 1: Performance of ANN model, given 7,14,21,30 and 60 days price history as input features. Left and right panels represent the model-data mean square error and Pearson correlation.

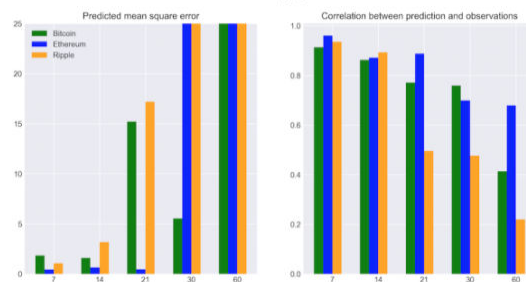


Figure 2: Performance of LSTM model, given 7, 14, 21, 30, and 60 days price history as input features. Left and right panels represent model-data mean square error and Pearson correlation.

Conclusion

In conclusion, this research has successfully developed a system for cryptocurrency price analysis, prediction, and trading simulation using ANN and LSTM models, along with a Django website for visualization and user interface. The developed system was evaluated using various performance metrics and was found to be effective in predicting cryptocurrency prices and providing a simulated trading environment for investors.

Future research could be done to improve the accuracy and reliability of the models and expand the functionality of the Django website. For example, incorporating sentiment analysis or social media data could provide additional insights into market trends and patterns. Additionally, integrating machine learning algorithms for portfolio optimization could further enhance the system's performance and provide more comprehensive solutions for cryptocurrency trading.

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[7] Huynh, V. N., & Moakes, D. (2020). Machine learning-based cryptocurrency price prediction using 4 Figure 1: Performance of ANN model, given 7, 14, 21, 30, and 60days price history as input features. Left and right panels represent model-data mean square error and R2 Figure 2: Performance of LSTM model, given 7, 14, 21, 30, and 60days price history as input features. Left and right panels represent model-data mean square error and Pearson correlation market sentiment analysis. *Journal of Intelligent & Fuzzy Systems*, 39, 3727-3736.

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Title **CHATBOT FOR SELF – DIAGNOSIS USING MACHINE LEARNING**

Volume 12, ISSUE 03, Pages: 309-313

Paper Authors

Dr. Ch. Rathna Jyothi, M.Shahid Meera, N.Pradeep Naik, G.Abhilash Reddy



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CHATBOT FOR SELF – DIAGNOSIS USING MACHINE LEARNING

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Abstract

For a healthy existence, medical care is crucial. But, if you have a health issue, it might be quite challenging to get medical help. The suggested approach is to create a medical chatbot that uses AI to analyse the illness and generate relevant information about the ailments that were being discussed with a doctor. To lower medical costs and increase access to medical information, medical chatbots were developed. Some chatbots act as medical guides to educate patients about their conditions and promote better health. If chatbots are able to diagnose various illnesses and provide the necessary information, users will undoubtedly profit from them. Patients can participate in medical analysis through text diagnostic bots that produce tailored analysis reports with references to the symptoms

Keywords: Self-diagnosis, Chatbot, Natural Language Processing, Health care, Diagnosis, Medical advice, Treatment

Introduction

The scientific discipline of machine learning enables computers to learn without explicit programming. One of the most intriguing technologies that has ever been developed is machine learning. The ability to learn is what, as the name suggests, gives the computer a more human-like quality. Today, machine learning is being actively used, possibly in a lot more places than one might think.

Machine learning is the process by which computers figure out how to carry out tasks without being specifically taught to do so. Computers use available data to learn in order to do specific jobs. For straightforward jobs given to computers, it is possible to build algorithms that instruct the device how to carry out all

the steps necessary to address the issue at hand; no learning is required on the part of the computer. It can be difficult for a human to manually develop the required algorithms for more complex tasks. In practice, it may prove more beneficial to assist the computer in creating its own algorithm than to have human programmers define each necessary step.

Machine learning uses a variety of techniques to train computers to complete jobs for which there isn't a totally suitable solution. One strategy is to declare some of the right answers as valid when there are many possible replies. The computer can then use this as practice data to refine the algorithm(s) it employs to determine the right answers. For

instance, the MNIST dataset of handwritten digits has frequently been used to train a system for the task of digital character recognition.

LITERATURE SURVEY

1. Professor Joseph Weizenbaum at the Massachusetts Institute of Technology created ELIZA, one of the first chatbots in 1966[3]. To simulate conversation, ELIZA employs pattern matching and replacement techniques. "ELIZA is well known artificial therapist. The bot attempts to rephrase the questions of the client and responds on certain keywords. If no keyword is found ELIZA replies with fixed phrases to keep the conversation going"
2. American psychiatrist Kenneth Colby developed PARRY in 1972. The program imitated a schizophrenic patient. It tries to imitate the sickness. It is a natural language program that mimics human thought patterns.
3. The Turing test refers to the question of whether a computer program could converse with a group of individuals without any of them understanding that their interlocutor was artificial. In 1966, the first chatbot with the name ELIZA was created. Eliza returned the users' statements in the interrogative form, simulating a psychotherapist's activity. Pattern matching and a response selection method based on templates are used by ELIZA. The first chatbot in history, ALICE, was created online and was inspired by ELIZA. Pattern matching was the foundation of ALICE [7]. ALICE and ELIZA were different in that ALICE was designed using the brand-new language AIML devised just for this reason. [7]
4. Since PARRY is thought to have a personality and a better governing

framework than ELIZA, it is regarded as being more sophisticated. The Chat-Bots discussed in this literature review, like K-Bot, are likewise based on medical applications. [3] Given the effect that asthma has on overall healthcare expenditures, there is a well-recognized need for a change to proactive asthma care. Traditional clinical settings can be demanding and taxing for clinical practitioners because of the need for regular monitoring of patients' adherence to the pharmaceutical care plan, assessment of environmental triggers, and management of asthma [3]. K-Bot can only treat asthma; it cannot treat any other conditions.

METHODOLOGY

Algorithm/Pseudo Code:

Natural Language processing is a subfield of computational linguistics, artificial intelligence, artificial intelligence, and machine learning. Because computers play an important role in the transmission and acquisition of information, there is a need for computers to understand natural language. NLP-based methods and how they can be approved. for example, Smart phones and other hand-held devices, which make use of the providers of a variety of teaching methods are used to retrieve the text, written in Chinese or in English. The language has been developed, which has an important role to play in the multi-lingual society.

Natural Language Processing (NLP), commonly referred to as learning and linguistics, is a branch of computer science and artificial intelligence that focuses on how people and computers communicate. (e) in a natural language. In the industry, and in academia, there is a need to understand and carry out a variety of different languages and computational linguistics knowledge in

order to be able to be distributed all over the world. Python has a broad range of the standard-libraries, which are suitable to the running of the computational software programs, and projects. Developers can utilize NLP algorithms for the following tasks:

1. Summarize long passages of text by removing all but the most crucial and central concepts with Summarizer.
2. To create a chat bot, use Google's ParseyMcParseface, a deep learning model for language parsing that employs Point-of-Speech tagging. Generate keyword tags automatically from content using Auto Tag, which makes use of LDA, a method for identifying subjects in a body of text.
3. Use named entity recognition to determine the type of extracted entity, such as whether it was a person, location, or organization.
4. Utilize sentiment analysis to determine the tone of a passage of text, ranging from extremely negative to neutral to extremely positive.
5. Use Porter Stemmer or Tokenizer to split up text into tokens and reduce words to their stem or root.

Live Chat

Live chat allows for two-way communication between the user and the doctor, and the patient can get advice from the doctor without having to wait in line or contact with other patients.

The user will check the doctor's availability after the user and the doctor have logged into both tabs for the live chat to function. He can therefore chat with the doctor and have the session if the doctor is online.

Automated Chatbot

Automated chatbot is used when the doctor is not available online, then they can go for the automated chatbot.

The purpose of developing the medical chatbot is to save the time and money in all the situation.

In their busy schedule which leads to avoid to visit hospital so they can use chatbot to get medical queries easily.

The working of automated chatbot here the user will be giving the input.

It will recognize the text based on the keyword. If it is incorrectly recognized again, it will take the input, then it will recognize and predict the disease.

System Implementation

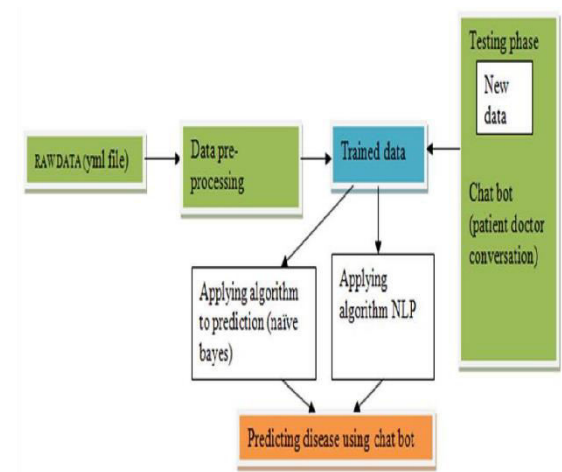


Fig.1: Overall System Architecture

Results

- Initially user will interact with the chat bot to get the prescription from the chat-bot.



Fig (1): Actual view of the chat bot.

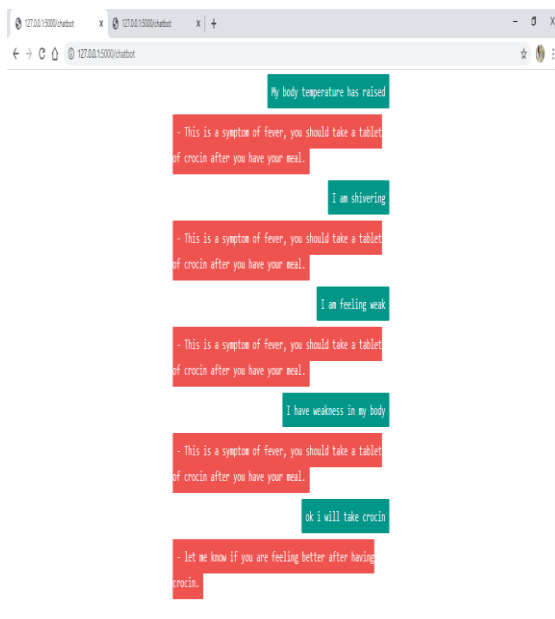


Fig.2: Chatting response of automated chatbot

- After patient can interact with doctor by authenticate himself using his user id and password as well as doctor also follow the same procedure.

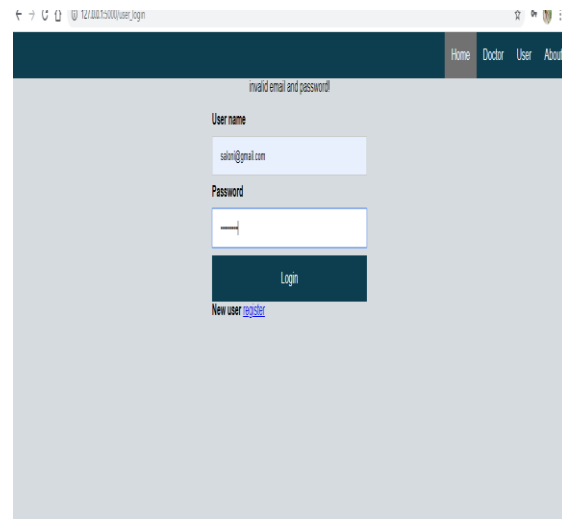


Fig.1: Login credentials

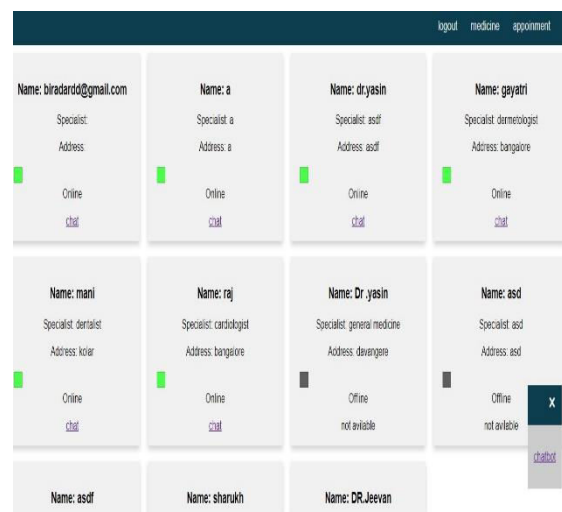


Fig.2: Shows how many doctors are available / active.

Conclusion

A review of what we have come to learn that this system will lead to the desired result. If we use a large data set, which provides a better performance in comparison with the previous one. So, we are going to build a system that can be used in a medical institution or hospital in order to help you, to be free to ask for a medicinal dose of some of the problems with the vote. The system will be the output of the medicine and the API, and to make and to display of all of the drugs

in the name of. With the help of NLP techniques, International Journal of Computer Trends and Technology, as we want to get to a computer, and communicate with users in their terms of use. So, with the help of computer algorithms, as well as the disease-the symptoms of a system that can be used to predict the disease. The user can get related to the response. see this answer for in the analysis. Depending on the disease, its symptoms, naive bayes, and decision tree algorithm that can be used to predict the disease. In order to use the Google API for speech-to-text, and text-voice conversion rate. The Chatbot API and then sends the query to the chatbot, and the corresponding response, and this response, analysis, and display of the response. To get a medicinal product-related information, such as name of the medicinal product, medicine, expiration date, information, history, and the API. When the user selects the control, in the process, the complaint shall be verified by the use of the LP's. The meaning of the words, with the help of a part of speech label, and the Wordnet dictionary, with the help of the sentiment of the analysis. The patient and the physician will have the option to chat to, and if there is an emergency.

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