

Key Indicator 3.3- Research Publication and Awards

3.3.1 Number of research papers published in the Journals notified on UGC website

Sr. No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
							Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
1	ArtSync: Virtual Platform for Artists and Art Devotees	1.Akash Deepnarayan Kumbhar 2. Gaurav Ganesh Pardule 3. Sandip MalhariJadhav 4. Vrushabh Rajesh Chavan 5. Prof. Naresh Shende	Computer Engineering	International Journal of creative Research Thoughts	2023-24	2320-2882	http://ijert.org/view_full.php?&p_id=UCRT24A4303		Yes
2	Rule based Approach to Extract Metadata in Scientific PDF Document	1 Vijaya Sunil Ruperi 2. Bhagyashree Ashok Jadhav 3 Trupti Chandrakant Jadhav 4 Bhceombai Kareppa Kavaldar 5. Prof. Naresh Shende	Computer Engineering	International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences	2023-24	2349-7300	https://www.ijirmps.org/research-paper.php?id=230593		
3	IOT Based Driver Drowsiness Detection System	1. Kalpesh Shinde 2. Lalit Borse 3. Pankaj Khaire 4. Triveni Pise 5. Prof. Naresh Shende	Computer Engineering	International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences	2023-24	2349-7300	https://www.ijirmps.org/research-paper.php?id=230596		
4	Decentralize Based E-Voting System Using Block chain technology	1. Sushant Patil 2. Jagruti Raut 3. Sakshi Shelar 4. Amol Mali 5. Prof. Poonam Tiwari	Computer Engineering	International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences	2023-24	2349-7300	https://www.ijirmps.org/	https://www.ijirmps.org/research-paper.php?id=230597	
5	Car Rental System	1. Kunal Waje 2. Akshay malekar 3. Akash Patil 4. Ashwin Shelawale 5. Prof. Poonam Tiwari	Computer Engineering	International Journal of Science and Social Science Research	2023-24	2583-7877	https://www.ijsssr.com/	https://www.ijsssr.com/vol2no1	Yes
6	Blockcrypt cryptography based communication	1. Pratiksha Madhukar Kamble 2. Rushikesh Prakash Ichake 3. Pratiksha Vishnu Jawale 4. Sunil Krishna Dokfode 5. Prof. Poonam Tiwari	Computer Engineering	International Journal of Science and Social Science Research	2023-24	2583-7877	https://www.ijsssr.com/	https://www.ijsssr.com/vol2no1	Yes

7	Hand Gesture Control Wheel Chair for Disabled People	1. Prafulla Katkade 2. Divya Gunjal 3. Bhagyashri Dangal 4. Sejal Temkar 5. Prof. Swati Bhoir	Computer Engineering	International Journal of Science and Social Science Research	2023-24	2583-7877	https://www.ijsssr.com/	https://www.ijsssr.com/vol2no1	Yes
8	Multiple Disease Prediction Using Machine Learning	1. Vrutika Bagul 2. Vrushali Bagul 3. Sadichha Patil 4. Prof. Swati Bhoir	Computer Engineering	International Journal of Innovative Science and Research Technology	2023-24	2456-2165	https://www.ijisrt.com/	https://www.ijisrt.com/multiple-disease-prediction-using-machine-learning	
9	Web Traffic Time Series Forecasting of Temperature Analysis	1. Dhiraj Dhone 2. Sani Desale 3. Siddhesh Bodake 4. Prof. Swati Bhoir	Computer Engineering	International Journal of Innovative Science and Research Technology	2023-24	2456-2165	https://www.ijisrt.com/	https://www.ijisrt.com/web-traffic-time-series-forecasting-of-temperature-analysis	
14	Object Recognition with voice for Blind People	1. Ajay Bhor 2. Priyanka Mhaske 3. Devyani Jadhav 4. Pratik Kantode 5. Prof. Yogeshwari Hardas	Computer Engineering	International Journal of all Research Education and Scientific Methods	2023-24	2455-6211	https://www.ijaresm.com	https://www.ijaresm.com/object-recognition-with-voice-for-blind-people	Yes
15	Automatic Tyre Killer	1. Sanskruti Bhosale 2. Ruchita Godse 3. Prathmesh Save 4. Prof. Yogeshwari Hardas	Computer Engineering	International Journal of Science and Social Science Research	2023-24	2583-7877	https://www.ijsssr.com	https://www.ijsssr.com/vol2no1#ijsssr-0246	Yes
16	Measuring Heart attack disease with use of ML	1. Pratik Bodake 2. Akash Shevkar 3. Jaydeep Padwal 4. Prof. Yogeshwari Hardas	Computer Engineering	International Journal of Innovative Science and Research Technology	2023-24	2456-2165	https://www.ijisrt.com/	https://www.ijisrt.com/predict-the-heart-attack-possibilities-using-machine-learning	
17	Parkinson Disease Prediction	1. Prathamesh Patil 2. Vaibhav Patil 3. Rohit Morankar 4. Karan Pawar 5. Prof. Yogeshwari Hardas	Computer Engineering	International Journal of Science and Social Science Research	2023-24	2583-7877	https://www.ijsssr.com		Yes
18	Design Estimation of Cooling Tower.	Acharekar Tanvi Santosh	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijsrem.com/	https://drive.google.com/file/d/1e1k0bHmAc9-pejRupfa-cinaEJOFDbb/	
		Akolkar Gauri Shamsundar		International					
		Bhagat Smita Sukhadev		International					

		Chaudhary Ganesh Balkrushna		Journal of Scientific research in engineering and management			https://ijsrem.com/view?usp=drive_link
19	Use of Plastic Waste as an Aggregate in Concrete	Jadhav Pooja Ashok Jadhav Nitesh Maruti Thakare Dipesh Dattatray	Civil Engineering	International Journal of Scientific research in engineering and management	2022-24	2580-3930	https://ijsrem.com/
20	Study Of Behavior Of steel fiber reinforced Concrete in deep Beam for Flexure.	Patil Sanket Motiram	Civil Engineering	International Journal of Civil and Structural Engineering Research	2023-24	2348-7607	https://www.researchpublish.com/
		Sonar Ruchita Govardhan		International Journal of Scientific research in engineering and management		2580-3930	https://ijsrem.com/
		Gaikwad Karan Madhukar					
		Jethe Avinash Balkrushna					
21	Experimental Investigation on Self Sustainable Building material used for low cost housing	Fasale Jayesh Ravindra	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijsrem.com/
		Gond Shubham		International journal of science and social science research		2583-7877	https://www.ijsssr.com/
		Thakare Sagar Shridhar					
		Chaudhari Amit Prakash					
22	Experimental Study on Concrete Mixed with Coconut shell Husk as Partial Replacement Of Fine Aggregate	Telivare Nikita Halya	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijsrem.com/
		Gaikwad Akansha Kiran					
		Padgha Megha Dilip					
23	Ground Improvement using Stone Column	Thapad Chandan Babaji	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijsrem.com/
		Bhoye Shubham Rajaram		International journal of science and social science research		2583-7877	https://www.ijsssr.com/
		Chaudhary Arvind Indrajit					
		Jadhav Manthan Moreswar					
24	Study and Analyzing Low Cost Housing	Jadhav Amol Atmaram	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijsrem.com/

		Jadhav Sanskar R	Civil Engineering	International journal of science and social science research	2583-7877	https://www.ijsssr.com/	com/file/d/16xKlaMjbugzOTp3ZLxUKUIIK8G8heCFU/view?	
		Patil Sachin Shantaram						
25	Smart Drip Irrigation	Jadhav Yash Jagdish	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijstem.com/	com/file/d/16xKlaMjbugzOTp3ZLxUKUIIK8G8heCFU/view?
26	Soil stabilization of black cotton soil by using Granite powder	Kharatmol Vinayak Vajinath	Civil Engineering	International journal of science and social science research	2023-24	2348-7607	https://www.ijsssr.com/	com/file/d/16xKlaMjbugzOTp3ZLxUKUIIK8G8heCFU/view?
		Kambale Urmila Ravindra						
		Nimse Srushti Shailesh						
		Kirpan Tejas Ravindra						
27	A experimental study on Self-Compacted Concrete	Bhoir Dhanashree Pramod	Civil Engineering	International Journal of Scientific research in engineering and management	2023-24	2580-3930	https://ijsrem.com/	com/file/d/15NCGsTh7nOaqr1fP6oGaGN1N_P8rociHv/view?
		Patil Chirag Sudhir						
		Misal Priyanka Santosh						
		Mithbavkar Vihar Satish						
				International journal of science and social science research		2583-7877	https://www.ijsssr.com/	com/file/d/16xKlaMjbugzOTp3ZLxUKUIIK8G8heCFU/view?



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Artsync: Virtual Platform For Artists And Art Devotees

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Abstract—Nowadays, it is difficult to search for artists to

showcase their art globally, so this ArtSync: Web Application for Artists and Art-enthusiasts is developed to provide a simple and efficient way for artists to upload their art. So ArtSync is a full stack website, which revolutionizes the way of showcasing the art globally. According to our research, artists frequently avoid exhibiting their work in well-known virtual art galleries for two reasons: first, finding suitable art curators can be expensive; second, appropriate art curators are difficult to find. Our study intends to build support for giving artists' works value by creating an artist-friendly website where artists can sell their creations without the help of art curators. The website provides a user friendly and flexible environment on smartphones or on desktops. An artist being registered in the web site has the facility to use the services. Artists can upload their art, price

and sell. Clients will be able to transact through the connected payment gateway, browse through a variety of art genres, and safely make purchases. Personalized dashboards for consumers will improve their entire experience by giving a centralized spot to track purchases, view transaction history, and manage interactions with artists. The goal of this project is to bridge the gap between artists and art fans by providing a seamless and secure digital platform. The data of the consumer will be saved for the next transaction also. These features help to build a user-friendly Online Art gallery.

Index Terms—Art Gallery, Artist, Consumers, e-commerce website, Arts, Arts for Art-Enthusiasts

Rule Based Approach to Extract Metadata In Scientific PDF Document

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Abstract-

With the availability of World Wide Web in every corner of the world these days, the amount of information on the internet is growing at an exponential rate. However, given the hectic schedule of people and the immense amount of information available, there is increase in need for information abstraction or summarization. Be it browsing through the seemingly endless pages of terms and conditions on an important official document or kicking back and flipping through an intriguing eBook- reading is quite an undeniable and inescapable part of our everyday lives. However, reading anything demands our complete undivided attention making it nearly impossible for us to multitask. This Online PDF to Audio Converter and Translator was created by using Python (Django) can instantly convert any PDF text into audio. Along with reading any PDF document out loud, this application can also translate and vocalize any text into up to five languages. Text summarization presents the user a shorter version of text with only vital information and thus helps him to understand the text in shorter amount of time. The goal of this project is to condense the documents or reports into a shorter version and preserve important contents convert that summarized text into audio for better understanding of the user. Also, projects convert the generated summery to the audio for better understanding.

Key Words: Python, NPL, PDF Extraction, audio converter, machine learning.



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INTRODUCTION

Natural Language Processing (NLP) is an area of application and research that explores how computers can be used to understand and manipulate natural language speech or text to do useful things. The foundation of NLP lie in a number of disciplines, namely, computer and information sciences, linguistics, mathematics, electrical and electronic engineering, artificial intelligence robotics, and psychology. NLP researchers aim to gather knowledge on how human beings use and manipulate natural languages to perform desired tasks so that appropriate tools and techniques can be developed. Applications of NLP include a number of fields of study such as multilingual and cross-language information retrieval (CLIR), machine transaction, natural language, text processing and summarization, user interfaces, speech recognition, artificial intelligence and expert systems. Text-to-speech and related read audio tools are being widely implemented in an attempt to assist students' reading comprehension skills. PDF to the audio system is a screen reader application designed and constructed for an effective audio communication system. PDFs were designed to present and exchange documents reliably, PDFs are an open standard document format used globally, maintained by the International Organization for Standardization (ISO). The document format is one of the most convenient methods for electronic communication, and also for the exchange of information. Hence, there is a need to make it more accessible to readers on-screen through audio. PDF documents are designed and structured to contain links and buttons, form fields, audio or sounds, video, and business logic. The PDF to the audio system will power text on screens to read aloud (speak) with support for many languages [2]. The PDF to Audio Converter project provides an alternative to access the PDF books for the blind, lazy, 1 Metadata extraction

IOT Based Driver Drowsiness Detection System

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Guide- ⁵Prof. Naresh Shende

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Abstract-

In recent years, drowsiness is the main cause of the accidents in India due to lack of sleep, tiredness and soon. In order to reduce the case of vehicle accidents caused by drowsiness of the driver is to detect them and warn them using an alarm. Many techniques, such as eye retina detection, have been used to detect sleepiness by facial features. Here in this paper, we propose a method for detecting the driver's drowsiness by detecting the person's closed eye for a few seconds. In this report, we propose a more accurate method for detecting drowsiness, by. The main contribution for this project is the drowsiness detection and warning, which is based on the person's open or closed eye. This project discuss on how to detect the eyes of the driver from the real time environment using the webcam represents the dashboard camera in a car. By using the real time detection, author use the built-in laptop webcam to detect the eyes of the demonstrator. The drowsiness detection system will detect the open and closed eye. The designed system will detect the face area and the coordinate of the eye. Detecting the face area is narrow down to detect eyes within face area. Both left and right eyes will be framed out once it found. The parameters of the eyes the eyes will be captured, whether it is closed or open. If the eyes are found closed for 4 consecutive frames, it is confirm that the driver is in drowsiness condition.

Keywords: Open CV, Tensor Flow, Detection, Drowsiness System, Machine Learning system.



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I. INTRODUCTION

Drowsiness is the state where person have strong desire to sleep. It is the state where person has the high desire to sleep. It has two definite meanings, referring both to the state foregoing falling asleep and chronic condition referring to being in that state independent of the daily rhythm. While performing the tasks that needed the constant concentration such as driving can be dangerous if it is done in a drowsiness state. Person can experienced drowsiness if they had a sufficient fatigue and this can leads to road accidents. The major challenge in the field of accident avoidance system faced by the developer and researcher is in developing the technologies for detecting or preventing drowsiness among the drivers. Solutions need to be done in order to counteract the presence hazards of drowsiness on a road.

II. LITERATURE SURVEY

1. Tianyi Hong; Huabiao Qin [1], It is a difficult problem to make drivers drowsiness detection meet the needs of real time in embedded system; meanwhile, there are still some

Decentralize Based E-Voting System Using Blockchain Technology

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Abstract-

Building an electronic voting system that satisfies the legal requirements of legislators has been a challenge for a long time. Recently, the Electronic Voting Machines (EVMs) used for casting the vote. They are prone to tampering and electoral frauds. This project attempts to solve the above problems by storing the vote data shared among all the devices in the network and peer-to-peer verification is done to verify the authenticity of the vote data. In order to successfully tamper with the system, the data stored in all the nodes must be changed. This makes the proposed system more efficient and reliable. The idea in blockchain enabled balloting scheme is to integrate Aadhaar card and Mobile number of the people using which the OTP is generated and then the voter is allowed to cast their vote. The user can cast their votes from anywhere. They should provide a valid reason for not voting within a period of 6 months, if the reason is invalid then the government will take necessary action. The implementation of this system addresses most of the issues faced in the balloting scheme and is used to avoid proxy casting and recasting and is also used to achieve above 95% of the vote.

Keywords -Blockchain, Smart Contracts, Electronic voting, Privacy, Ethereum.



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I. INTRODUCTION

The heart of democracy is voting. In order to ensure a fair and credible election process, security and reliability must be guaranteed in every stage of the process. The success of a democracy depends on the degree of fairness and reliability of its elections. At first, elections in India were conducted using paper ballots. In the paper ballot-voting scheme, voters marked their choice of candidates in a piece of paper known as the ballot paper and placed them in the ballot box. Mostly, these ballots were manually counted and this led to a considerable delay in the election process. In addition, there was no guarantee of vote secrecy. In some constituencies there were allegations of booth capture and 'ballot stuffing' by party loyalists.

In order to overcome the problems in paper ballots, the Election Commission of India introduced Electronic Voting Machines (EVMs) in the 1990s. Electronic Voting Systems greatly reduce the time taken for the election process; there is still some degree of manual counting involved. Each EVM displays the total vote count for each candidate in a particular region of a constituency. In order to obtain the final consolidated vote count, the EVMs from all the regions in the constituency are taken to a secure location and the total votes in each EVM are tallied in front of the representatives of all political parties.

Blockchain is the robust, immutable and the most trusted technology that contains a block of data linked using cryptography, which is based on a peer-to-peer (P2P) network. Blockchain was first developed to support Bitcoin, which is a peer-to-peer electronic cash system. Few years after bitcoin, emerged a new cryptocurrency named "Ethereum". Ethereum is a decentralized platform that enables developers to form/develop smart contracts using a tuning-complete Ethereum virtual machine and allows anyone to

Car Rental System

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Abstract—The Online Car Rental System presents a streamlined approach to modernize and simplify the vehicle rental process. In response to the increasing demand for flexible and accessible transportation, this system provides a user-friendly online platform connecting rental services with customers. This system allows users to effortlessly browse and select vehicles through an intuitive web interface or mobile application. Key features include efficient reservation and booking capabilities, enabling users to schedule pickups and returns at their convenience. The implementation of secure payment processing ensures a smooth and reliable transaction experience. For rental agencies, the system offers centralized management, simplifying reservation tracking, vehicle maintenance scheduling, and financial transactions. Real-time availability tracking optimizes fleet management, allowing agencies to meet customer demand effectively

Keywords: Car rental system , Python,DBMS, XAMPP,PHPMYADMIN.

I. INTRODUCTION

"In today's dynamic transportation landscape, the Car Rental System emerges as a bespoke solution, tailored to cater to the diverse needs of individuals without access to personal vehicles, those facing temporary vehicle unavailability due to repairs or insurance processes, and travelers seeking flexible mobility options. This innovative application acts as a digital conduit for Car Rental Companies, offering a seamless online platform where customers can effortlessly explore a range of available vehicles, complete registrations, establish profiles, and secure reservations. Engineered to prioritize accessibility and convenience, this initiative addresses the multifaceted requirements of temporary vehicle seekers. Whether an individual lacks a personal vehicle, encounters a temporary vehicle shortage due to repairs, or is a traveler in search of transient transport solutions, the Car Rental System provides a user-centric interface for an optimal rental journey.

II. LITERATURE SURVEY

[1] Success Story of a Start-up – A Case Study of OLA Cabs (Authors : Dr. Ashok Kumar Panigrahi, Shambhavi Shahi, Amarsingh Rathore February, 2018)

Ola, initially known as Olatrip.com, emerged as a startup venture by Bhavish Aggarwal and Ankit Bhati, two graduates of IIT Mumbai. Founded on December 3, 2010, in Mumbai, Ola has since transformed into a leading player in India's transportation landscape, offering taxi aggregator services under the brand name Ola Cabs. Central to its success is the revolutionary step of introducing a mobile app booking system, fundamentally altering the way people access and book transportation services. Ola's mobile app offers a user-friendly interface that simplifies the booking process, allowing users to select their pickup and drop-off locations, choose the type of vehicle, and track their ride in real-time. This seamless experience enhances customer satisfaction and encourages widespread adoption of the platform.

[2] The Growth Story of Zoom Car: A Case (Author: Ashok Panigrahi December 2020)

Zoomcar, established in 2013 by David Back and Greg Moran, stands as a pioneer in India's car rental industry, offering convenient car-sharing services through its online app. Operating in over 34 cities, Zoomcar has redefined personal mobility by providing self-driving vehicles on a flexible rental basis.

Zoomcar's innovative approach to mobility emphasizes convenience and autonomy. Through its user-friendly app, customers can easily rent cars by the hour, day, week, or month, without concerns about mileage, fuel, insurance, or breakdowns. This model has transformed the travel experience, making self-drive rentals accessible and hassle-free for tourists and residents alike.

Blockcrypt cryptography based communication

Pratiksha Madhukar Kamble¹; Rushikesh Prakash Ichake²; Pratiksha Vishnu Jawale³; Sunil Krishna Dokfode⁴; Guide-Prof. Poonam Tiwari⁵

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Abstract—Blockchain is a new technology that overcomes threats and allows decentralization of sensitive tasks while maintaining high performance. security. It eliminates the need for trusted intermediaries. Blockchain is a new technology that provides a decentralized platform that ensures data integrity, transparency, traceability, anonymity, non-repudiation, accountability and non-tampering. Blockchain accesses all network nodes and tracks all transactions taking place. The aim of our work is to propose secure communication based on blockchain technology. In this project, we explain why blockchain will make communication more secure and present a design for blockchain-based messaging to protect the efficiency and security of data stored on the blockchain. The system is a combination of blockchain and cryptographic methods of communication.

Keywords: - decentralization, security, blockchain, cryptography.

I. INTRODUCTION

In today's digital environment, centralized systems where information is stored on a server have long been the standard for sharing and communication. However, this approach comes with significant risks, such as data loss due to server failure, vulnerability to hacking attacks, and lack of transparency in the information sharing process. These challenges have become even more pronounced with the growth of digital commerce and communications, especially in India, where initiatives such as Unified Payments Interface (UPI) and Aadhaar-based payments are rapidly gaining traction on the technology. To solve these important problems, the idea of inter

system distribution using blockchain technology has emerged as a promising solution. Blockchain provides a distributed system where information is distributed and stored over a computer network, providing transparency, security, and the ability to prevent tampering or data loss. The motivation behind leveraging blockchain and encryption technologies such as BLOKCCRYPT is to create a secure, tamper-proof platform for digital transactions while building trust between parties and reducing the risk of fraud. and privacy has become a top concern, especially with the implementation of Personal Data Protection (PDPB); BLOKCCRYPT aims to provide a connectivity language that manages user privacy and allows people to control their personal information. By integrating blockchain technology into communication, BLOKCCRYPT aims to create a transparent exchange where participants can verify and verify communication history, thus increasing users' trust and responsibility.

Especially in India, where data protection and privacy have become a major concern with the passage of the Personal Data Protection Act (PDPB), BLOKCCRYPT aims to provide a communication system that protects user privacy and gives individuals control over their personal information. By integrating blockchain technology into communication, BLOKCCRYPT aims to create a transparent exchange where participants can verify and verify communication history, thus increasing users' trust and responsibility.

II. LITERATURE SURVEY

Teacher Shivaji Vasekar, Akash Adhav, Anirudha Adekar, Kshitij Kanake, Shubham Gondhali Decentralized applications leverage decentralized networks to ensure that the organization does not fail due to failure of its focal point. [1]

Dr. R.K. Gupta helped clarify the nature of cryptography by making connections between different cryptographic methods and different hashes. It performs different mixed power attacks. More attacks can be created by analyzing current security levels and creating a strong system. [2]

Obamehinti Adeolu Seun¹, Touraj Khodadadi², Sellappan Palaniappan³ Blockchain is a technology that offers a way to solve many challenges in various fields. Documents, contract language have attracted the attention of researchers over the years as they are considered transparent, secure, third-party-free and tamper-proof public data storage for products and assets. [3].

Abdalbasit Mohammed Cryptography is a machine used to process secret messages. This word has a special meaning in Greek: "secret writing." However, today, the confidentiality of individuals and organizations is ensured by advanced encryption technology, ensuring that the transmitted information is secure and accessible to authorized persons. [4].

Hand Gesture Control Wheelchair for Disabled People

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Abstract—A new assistive technology, called the Hand Gesture Control Wheelchair (HGCW) system, is designed to help individuals with mobility impairments increase their independence and mobility. The system consists of a wearable device with sensors that detect hand movements and Arduino microcontrollers for real-time data processing and wheelchair control. The HGCW system uses gesture recognition algorithms to translate hand gestures into corresponding wheelchair movements, such as forward, backward, left, and right turns, and communicates wirelessly with the wheelchair's control unit. The system is cost-effective, customizable, and intuitive, making it accessible to a wide range of users. The HGCW system has the potential to revolutionize the way disabled individuals navigate their environment, empowering them to lead more independent and fulfilling lives. By changing the head movement, the data is sent wirelessly to the microcontroller-based motor driver circuit to control the rotation of the chair in five different modes: forward, backward, right, left and special standing lock. The proposed system was assembled using products procured from the local market and its performance was tested in the laboratory and the test results are included in this article.

Keywords – Internet of Things, Health Care Industry, Movement Disabled People, Hand Gesture.

I. INTRODUCTION

Mobility improvement is a significant challenge faced by millions of individuals worldwide, greatly affecting their independence and quality of life. For people with disabilities, particularly those with limited upper body mobility, conventional wheelchair controls can be cumbersome and restrictive. However, advancements in technology, particularly in the fields of Internet of Things (IoT) and Arduino, offer promising solutions to enhance mobility and autonomy for disabled individuals. This paper presents the development and implementation of a Hand Gesture Control Wheelchair (HGCW) system designed to empower individuals with mobility impairments through intuitive hand gesture-based control. By leveraging IoT and Arduino technology, the HGCW system provides an innovative approach to wheelchair navigation, enabling users to manoeuvre their chairs with simple hand gestures. The motivation behind the HGCW system stems from the need to address the limitations of traditional wheelchair controls, which often require precise manual manipulation and may not be suitable for individuals with dexterity issues. By introducing a hands-free control mechanism based on natural hand movements, the HGCW system aims to improve accessibility and usability for users with diverse mobility needs.

Due to this high proportion, there is growing demand for developing technologies that can aid this population group from international health care organization, universities and companies interested in developing and adapting news products. One of the most adaptable body parts is the hand. It has the capacity to produce a wider variety of signals than any other limb. Hand signals are viewed as the most effective method of communication that doesn't rely on spoken words, for conveying information between two people. The primary challenge is creating a system that tackles the issue of allowing those with disabilities to access their fundamental requirements. This project aims to develop a wheelchair controlled by hand gestures, proving beneficial for those with physical limitations.

Through the successful development and implementation of the HGCW system, this research aims to contribute to the field of assistive technology by offering a user-friendly and innovative solution for individuals with mobility challenges. By harnessing the power of IoT and Arduino technology, the HGCW system has the potential to revolutionize wheelchair navigation, providing greater freedom and independence to users with disabilities.

II. LITERATURE SURVEY

In a published article, G. Bourhis and K. Moumen show that there are currently many navigation systems on the market that make it easier for people with disabilities to navigate. The established system is very competitive in replacing the old system [1]

Rakhi A. Kalanthri and D. K. Chitra demonstrated in their work that the wheelchair can be controlled in four directions by tilting the acceleration sensor. Ultrasonic sensors are used to control the movement of the wheelchair, avoiding the possibility of collisions with objects until the user is able to take over some of the responsibility of steering. It simply calculates the degree of inclination and decides which direction to move [2]

Multiple Disease Prediction Using Machine Learning

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Abstract:- Machine learning, which is a type of computer technology, has changed healthcare a lot. It helps doctors predict diseases better and faster. In healthcare, using machine learning algorithms decision tree (DT), logistic regression (LR), support vector machine (SVM) that can help predict lots of different diseases at the same time. This helps doctors find and treat illnesses early, which makes patients better and saves money on healthcare. This paper looks at how we can use computer programs that learn from data to predict many diseases. It talks about why this is good, what problems we might face, and where we might go next with it. We give a summary of the several machine learning models and information sources that are often employed in illness prediction. We also go over the significance of feature selection, model assessment, and combining several data modalities for improved illness prediction. We give a summary of the several machine learning models and information sources that are often employed in illness prediction. We also go over the significance of feature selection, model assessment, and combining several data modalities for improved illness prediction. The research shows that using machine learning algorithms to predict many diseases at once could really help public health. Again, we use a machine learning model to determine whether or not an individual is impacted by a few diseases. This training model trains itself to predict illness using sample data.

Keywords:- Disease Prediction, Disease Data, Machine Learning, Decision Tree (DT), Logistic Regression (LR), Support Vector Machine (SVM).

I. INTRODUCTION

In recent years, machine learning has made big progress and is being used in lots of industries, like healthcare, to do really amazing things. Using computer systems that learn from data can help doctors detect diseases more accurately and improve patient outcomes by predicting many diseases at the same time. This study used the Support Vector Machines (SVM) and logistic regression (LR) algorithms to predict the presence of five prevalent diseases: Parkinson's disease, diabetes, heart disease, lung cancer, and breast cancer. Diabetes, Parkinson's disease, lung cancer, and breast cancer are important public health concerns that have a significant influence on people's lives and healthcare systems all over the world. Reducing healthcare expenditures, optimizing treatment strategies, and improving patient prognosis are all dependent on early identification and correct diagnosis of these disorders. Early detection and precise diagnosis of these

illnesses are critical for lowering healthcare costs, optimizing treatment techniques, and improving patient outcomes. Because of its ability to study huge amounts of data and identify subtle patterns, machine learning offers fascinating pathways for multi-disease prediction. Support vector machines (SVMs) are powerful supervised learning models that are commonly used in classification problems. SVMs aim to optimize the margin between unique classes in data by determining the best hyperplane to separate them. The SVM approach is suitable for a wide range of medical diagnostic applications since it can handle both linear and nonlinear relationships between input data and target variables. This study wanted to make a system that could predict several diseases using SVMs. It checked how good this system was at predicting Parkinson's disease, diabetes, and heart disease.

Using this dataset, the SVM model was trained to understand the complex correlations between the existence of the three diseases and the input features. Targeted illness management techniques, individualized treatment plans, and early interventions can all be made easier with the help of machine learning models for accurate disease prediction. It may help medical professionals make better judgments, improve patient care, and better allocate resources within healthcare systems. It also has potential for population-level disease surveillance, which would help public health officials quickly identify illness outbreaks and put preventative measures in place. The investigation and analysis of the SVM model's performance in predicting heart disease, diabetes, and Parkinson's disease revealed the utility and practicality of applying machine learning algorithms to complex medical diagnosis. The study and evaluation of the LR model's performance in predicting lung cancer and breast cancer. As a consequence, this work points out the potential of SVM and LR as effective tools in the field of multi-disease prediction. Machine learning can help us move closer to producing more precise, timely, and tailored healthcare interventions, which will improve patient outcomes and build more successful healthcare systems.

II. LITERATURE SURVEY

In this project, we studied existing research about using machine learning methods, like Support Vector Machines (SVM) and logistic regression (LR), random forest, to predict several diseases such as diabetes, heart disease, and Parkinson's disease. We looked at other studies that did similar things to understand more about how they did it and what they found. This helped us set up our own project.

Web Traffic Time Series Forecasting of Temperature Analysis

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Abstract:- This project makes use of the ARIMA (AutoRegressive integrated moving common) model to forecast web site visitors on weather-related web sites, analyzing how temperature fluctuations affect tourist numbers. ancient web visitors and temperature records are amassed, preprocessed, and analyzed. The ARIMA version is enhanced by way of incorporating temperature as an external regressor, optimizing forecasting accuracy via cautious parameter tuning. This method is evaluated towards traditional models to assess its effectiveness. The findings reveal that integrating temperature records notably improves predictive overall performance, supplying precious insights for managing web content based totally on environmental elements and predicting visitors developments with more precision.

Keywords:- Time Series Forecasting, ARIMA, Temperature Analysis, Machine Learning, Big Data, Deep Learning.

I. INTRODUCTION

The pervasive growth of the internet has extensively heightened the reliance on virtual structures for actual-time facts get entry to, appreciably in domains sensitive to environmental modifications together with climate and weather. Observations imply that fluctuations in internet site visitors to weather-associated web sites intently correlate with changes in environmental factors, in particular temperature. correctly predicting these site visitors flows is essential now not simplest for operational making plans but additionally for optimizing aid allocation and content shipping on such systems [5].

Amongst numerous statistical tools available, the AutoRegressive incorporated moving common (ARIMA) model sticks out because of its robustness in dealing with time series statistics. developed through box and Jenkins (1970) [2], the ARIMA model is famend for its ability to model and forecast time collection information that suggests non-stationary styles, a common trait in net site visitors information [18]. This challenge employs the ARIMA version to forecast internet visitors, integrating temperature as a predictive variable to enhance the model's accuracy.

Incorporating outside variables such as temperature into time collection fashions like ARIMA (termed as ARIMAX) has been proven to seriously improve the forecasting accuracy. research via Chen et al. (2004) [10] demonstrates that ARIMAX fashions, which incorporate extra exogenous variables, can offer greater precise predictions with the aid of accounting for external influences that at once impact the based variable—in this example, internet site visitors [20].

This examine gathers good sized historic statistics on internet visitors from diverse weather-centered web sites at the side of corresponding temperature information. thru meticulous preprocessing and evaluation, we utilize the ARIMAX model of the ARIMA version to determine the impact of temperature fluctuations on net site visitors volumes. The efficacy of our approach is confirmed towards general benchmarks, with findings anticipated to contribute valuable insights for internet administrators and content material companies [8] [23].

With the aid of applying an advanced statistical technique to a sensible hassle, this challenge not handiest advances the theoretical framework of time collection forecasting however also underscores the realistic implications of integrating environmental information into predictive fashions for better selection-making in internet control [22] [10].

II. LITERATURE SURVEY

Time series forecasting of Temperature Analysis is famous topic in Machine Learning. Literature survey of this project is following.

A. Traditional Time Series Models for Temperature Forecasting:

Box, G. E. P., Jenkins, G. M., & Reinsel, G. C. (1976). Time Series Analysis: Forecasting and Control. San Francisco: Holden-Day. This seminal work introduced ARIMA models for time series analysis, laying the foundation for temperature forecasting using statistical methods.



Object Recognition With Voice For Blind People

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ABSTRACT

Computer vision is the concept and technology of computers searching, storing and analyzing digital images or video files. From an engineering perspective, its main purpose is to make things that people can see. The impact of these advances in computer vision is huge. Today's machines have gone through a process of development and innovation over the last decade, increasing accuracy from 50% to 99%, becoming faster and easier. There are approximately 285 million visually impaired people of all ages, and 39 million of them are blind. 82% of blind people who cannot survive without help are people aged 50 and over. But through computer vision, we can train computers to recognize objects and respond to them with sound, so they can recognize objects in real-world computers Vision.

Keywords: computer, computers, feedback, object, tasks, innovation, accuracy, advances, vision, videos.

INTRODUCTION

Speech Object Recognition for the Visually Impaired is a solution designed to support people with visual impairments by giving them the ability to recognize and interact with their physical environment through Hearing. This new technology uses a variety of tools and techniques to help blind people understand their environment and identify objects; this can improve their independence, sense of security and make all life beautiful. The primary goal of object recognition with voice is to bridge the information gap that blind people often experience in a sighted world. Traditional methods of identifying objects, such as tactile exploration and assistance from sighted individuals, can be limited and time-consuming. With the integration of voice and advanced technologies, individuals with visual impairments can gain more immediate and comprehensive access to information about the objects and environments around them.

LITERATURE SURVEY

According to [1] Juan and O. Gown, "A Comparison of SIFT, PCASIFT and SURF". International Journal of Image Processing (IJIP), 3(4):143 a 152, 2009.

According to [2] Redmon, Joseph, et al. "You only look once: Unified, real-time object detection." Proceedings of the IEEE conference on computer vision and pattern recognition 2016.

According to [3] Hanen Jabnoun, Faouzi Benzarti, and Hamid Amiri, Object recognition for blind people based on features extraction IEEE IPAS a14: INTERNATIONAL IMAGE PROCESSING APPLICATIONS AND SYSTEMS CONFERENCE 2014

According to [4] Raspberry pi user guide; Eben Upton and Gareth Halfacree; 312 pages; 2017; ISBN 9781118921661

According to [5] Esteban Bayro Kaiser, Michael Lawo, "Wearable Navigation System for the Visually Impaired and Blind People", IEEE, 2012.

METHODOLOGY

Object Detection using computer vision in this project we use a Computer Vision Algorithm known as YOLO to identify objects and Open CV to capture the image. Our system will detect the objects stored in a partially pre-trained model and label them with a square box around them. Then the identified objects will be returned to the original frame.

YOLO:

YOLO is a great search engine. The name of the algorithm indicates that the algorithm only looks at the object once and finds it.

YOLO will use 3 attributes to detect the object.

Automatic Tyre Killer

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Abstract—In India, people do not follow traffic rules and driving on the wrong side of the road and jump red signal is strictly prohibited and considered a significant traffic offense. The penalties for wrong-side driving include fines ranging from INR 500 to INR 1,000, and in severe cases, imprisonment of up to three months. Additionally, the offense is classified as non-compoundable, meaning that it cannot be resolved through payment of a fine without appearing before a court. The new Motor Vehicles Amendment Act has strengthened the penalties for various traffic violations, including not follow traffic signal and wrong-side driving, to encourage greater compliance with traffic rules. Break the traffic signal and Wrong side driving is very serious issue not India as well as in all over world. Fine is not the permanent solution to aware the people about the traffic management rules. So this project is most essential and helpful system in the traffic management system to drive safely and follow the traffic rules strictly. The aim of the project is to aware the people for the traffic rules. For that issues we developed such type of system is need to develop for good traffic management. **Keywords:** Traffic Management, Traffic Signal.

I. INTRODUCTION

Tyre Killer is an electro hydraulically operated heavy duty spike barrier which rises above the ground level on giving a valid input signal and thus prevents unauthorized intrusions at Traffic signal premises. The Traffic Flow Plate Spike Barrier is a high quality, heavy-duty steel constructed vehicle barrier designed to handle vehicles of all sizes and volumes. It can be fitted as a permanent or semi-permanent vehicle barrier offering the ability to control vehicle movements through a specific roadway area. According to WHO the traffic accident is about 1.25 million annually. The automatic tyre killer project helps in reducing the accident and making people follow the traffic rule.

Properly. In modern world, vehicle user increases largely. As the all-electric machines (vehicles) count increases the traffic is also increasing. By this effect, we can see a lot of road accidents. To rescue the victims, several problems must be faced by the ambulance because of traffic problems. The main objective of this system is to stop the vehicle at signal and restrict the vehicle which is trying to break the signal. This system can be used in the retractable spikes after the zebra crossing that comes out when the traffic signal is red and goes off when the traffic signal turns to green. This is an legit idea mainly to avoid congestion and rescue the ambulance. In the usual traffic system, the peoples were not following the traffic rules properly. To overcome this problem, we were implementing this system. The main aim of this system is to obey and follow the traffic rules properly if not there will be an opening of spikes. It will make all the people to obey the traffic rules correctly. The major objective of this system is to provide a safety secured system for our society this. On using the spikes module, the spikes system operates using DC motor. In case ambulance reaches signal the spikes will gets OFF and other signals gets ON with an emergency alert. This system provides a secured system for our society. No other way of breaking the traffic rule

II. BACKGROUND

In an effort to address reckless driving behaviors, Pune became the first city in India to deploy 'tyre-killers' on its roads to deflate the tires of vehicles driving on the wrong side. The spikes were initially installed in Amanora Park Town but were later removed following a notice from Pune traffic police. Citing concerns about the potential for serious injury or fatalities among commuters, the traffic police deemed the experiment too risky and stated they would not permit similar measures in the city, except at critical installations. They also highlighted the danger posed to ambulances.

III. LITERATURE SURVEY

[1]K. Vishnusaravanabharathi: proposes a system aimed at ensuring compliance with traffic rules by threatening to deploy spikes if rules are violated. The project aims to enhance safety on roads, reduce accidents, and ease the burden on traffic police.

[2] Fred Wegman: highlights the global scale of road traffic injuries and fatalities, emphasizing the disproportionate impact on low- and middle-income countries. He underscores the urgency of addressing this public health issue.

[3] Sanket Bhansali: discusses the role of industrialization and modernization in exacerbating traffic congestion worldwide. Their project introduces a Road Spike System to mitigate traffic problems in urban areas by puncturing the tires of vehicles attempting to bypass traffic signals.

Predict the Heart Attack Possibilities Using Machine Learning

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Abstract:- Heart disease remains one of the leading causes of mortality worldwide, making early detection and prevention crucial. Machine learning techniques offer promising avenues for predicting heart attack possibilities by analyzing patient data and identifying risk factors. This study explores the development of a predictive model using machine learning algorithms to assess the likelihood of a heart attack based on individual patient characteristics and medical history.

The dataset comprises a comprehensive range of features including demographic information, lifestyle factors, medical history, and results from diagnostic tests such as electrocardiograms (ECG), cholesterol levels, and blood pressure readings. Preprocessing techniques such as data cleaning, normalization, and feature engineering are applied to prepare the dataset for analysis. Looking ahead, the article identifies promising avenues for future research, including the integration of multimodal data sources, real-time risk assessment systems, and collaborative efforts to develop standardized benchmarks and evaluation protocols. By synthesizing the collective knowledge gleaned from decades of research, this historical review aims to inform and inspire ongoing endeavors in leveraging machine learning for proactive cardiovascular health management and prevention strategies.

Keywords:- Support Vector Machine, Machine Learning Algorithm, Computational Modeling.

I. INTRODUCTION

Heart disease remains a significant global health concern, responsible for a substantial portion of mortality and morbidity worldwide. Among the various cardiovascular conditions, heart attacks, or myocardial infarctions, pose a particularly grave threat due to their sudden onset and potentially life-threatening consequences. Early identification of individuals at risk of experiencing a heart attack is paramount for implementing preventive measures and timely interventions to mitigate adverse outcomes.

II. LITERATURE SURVEY

[1] **Traditional Risk Factors and Beyond:** Early studies often focused on traditional risk factors such as age, gender, hypertension, and cholesterol levels. However, more recent research has expanded to include novel predictors such as genetic markers, lifestyle factors, psychosocial variables, and emerging biomarkers like high-sensitivity C-reactive protein (hs-CRP) and homocysteine levels.

[2] **Datasets and Cohorts:** Researchers have utilized various datasets and cohorts for heart attack prediction, including longitudinal studies like the Framingham Heart Study, the UK Biobank, and electronic health records (EHR) databases from healthcare institutions. These datasets provide rich sources of information for training and validating machine learning models.

[3] **Feature Engineering and Selection:** Feature engineering plays a crucial role in extracting relevant information from raw data. Studies have explored different techniques for feature selection, dimensionality reduction, and handling missing values to enhance model performance and interpretability.

[4] According to Krittanawong, Chayakrit, et al. "Artificial intelligence in precision cardiovascular medicine." *Journal of the American College of Cardiology* 2017.

[5] According to Motwani, Manish, et al. "Machine learning for prediction of all-cause mortality in patients with suspected coronary artery disease: a 5-year multicentre prospective registry analysis." *European heart journal* 2017

[6] According to Choi, Eunho, et al. "Cardiovascular disease prediction using deep learning techniques: A review." In 2016 *IEEE International Conference on Healthcare Informatics (ICHI)*, pp. 209-215. IEEE, 2016

Parkinson's Disease Prediction

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Abstract Voice-based biomarkers can help diagnose symptoms of dementia such as Parkinson's disease, PD is a modern neurodegenerative disease affecting about 7 million people worldwide (usually adults), with about 150 thousand new scientific diagnoses performed each year. Historically, PD has been difficult to find and documents tend to focus on a few symptoms and even ignore some, depending on the scores of independent points. Due to the decline in motor manipulation which is a sign of illness, the term can be used as a means of detecting and diagnosing PD. Common sense has meant that physicians often focus on the symptoms of PD while ignoring the other. By using independent measurement scales, the term can be used to diagnose and diagnose the disease. This paper presents evidence to support the concept of supervised classification, which can be used to diagnose individuals with diseases such as diabetes and pulmonary fibrosis. Through Linear Regression, Logistic Regression, Decision Trees, Support Vector Machine, Random Forest, XGBoost, Neural Network and Adaboost we were able to achieve a peak accuracy of 100% for diagnosing pathological conditions. The project also uses various Evaluation Methods and Metrics such as Confusion Matrix, Classification Report, F1 - Score, Accuracy, Precision, Recall.

I. INTRODUCTION

Parkinson's disease is a neurodegenerative disorder that results in unintended or inevitable movements in our body. It is estimated to affect numerous people across the globe and has negatively affected the quality of life of those who are affected. If not treated on time and not given the effective treatment, it will start to hamper the health on worst level. So, a proper treatment in proper time, is a must for Parkinson's disease.

A program model can be taught to detect the disease with the help of large dataset and numerous training sets. So, a proper treatment in proper time, is a must for Parkinson's disease.

II. LITERATURE SURVEY

Parkinson's disease (PD) is a neurodegenerative disorder affecting millions globally. Early detection is crucial for better disease management. Machine learning and data mining techniques are showing promise in predicting PD. Here's a breakdown of key areas to explore in literature survey:

1. L. Naranjo, C. J. Pérez, J. Martín and Y. Campos-Roca, "A two-stage variable selection and classification approach for Parkinson's disease detection by using voice recording replications," *Computer Methods and Programs in Biomedicine*, vol. 142, pp.147-156, 2017.
2. G. Ahmad, S. Alanazi, M. Alruwaili, F. Ahmad, M. A. Khan *et al.*, "Intelligent ammunition detection and classification system using convolutional neural network," *Computers, Materials & Continua*, vol. 67, no. 2, pp. 2585-2600, 2021.
3. F. Alhaidari, S. H. Almotiri, M. A. A. Ghamdi, M. A. Khan, A. Rehman *et al.*, "Intelligent software-defined network for cognitive routing optimization using deep extreme learning machine approach," *Computers, Materials and Continua*, vol. 67, no. 1, pp. 1269-1285, 2021.
4. S. Y. Siddiqui, I. Naseer, M. A. Khan, M. F. Mushtaq, R. A. Naqvi *et al.*, "Intelligent breast cancer prediction empowered with fusion and deep learning," *Computers, Materials and Continua*, vol. 67, no. 1, pp. 1033-1049, 2021



DESIGN AND ESTIMATION OF COOLING TOWER

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ABSTRACT

A cooling tower is a device that rejects waste heat to the atmosphere through the cooling of a coolant stream, usually a water stream to a lower temperature. Cooling towers may either use the evaporation of water to remove process heat and cool the working fluid to near the wet-bulb air temperature or, in the case of dry cooling towers, rely solely on air to cool the working fluid to near the dry-bulb air temperature using radiators.

The natural draft cooling tower is an open, direct-contact system. It works using a heat exchanger, allowing hot water from the system to be cooled through direct contact with fresh air. To increase the heat transfer surface area (and optimize the cooling process), hot water is sprayed from nozzles within the tower.

Cooling towers in the 19th century through the development of condensers for use with the steam engine. Condensers use relatively cool water, via various means, to condense the steam coming out of the cylinders or turbines.

Keywords: *Cooling tower, Cooling system, Evaporative cooler, Coolant system.*



USE OF PLASTICWASTE AS AN AGGREGATE IN CONCRETE

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ABSTRACT:

Significant growth in the consumption of plastic products is observed all over the world in recent years; this has contributed to increasing the production of plastic waste. Disposal of plastic is a challenging task. Because plastic waste can take anywhere from 20 to 500 years to decompose, and even then, it never fully disappears; it just get smaller and smaller. Hence it is necessary to reduce the amount of production of plastic as well as disposal and reuse of plastic is mandatory.

As decomposition of plastic is a serious problem as it takes very long time and adversely affection the environment in many ways so reuse of plastic waste in the production of concrete or mortar appears as an environmentally friendly solution for getting rid of plastic waste, due to its ecological and economic advantages and we can use it in construction, where we need life of structure to be improved. Furthermore, it leads to a decrease in plastic waste in landfills. Several studies presented the properties of cementitious composites (mortar and concrete) containing different types of (PWD)

Usage of these plastic waste materials helping in dual role by minimizing of concrete and by using the waste materials that are affecting the environment. The other advantage of using these waste materials is that they are helping improving the properties of concrete. This study summarizes the previous studies until 2019, discussing the use of recycled plastic aggregate as aggregates in cementation composites and its impact on the compressive strength.

In this study we are going to replace the fine aggregate and coarse aggregate by plastic aggregate with 2.5%, 10% and 25%, then specimens are tested and compared with a control specimen of 0% plastic in terms of compressive strength. We will also do the comparative study of replacement of fine and coarse aggregate and going to find that which replacement is better.

Keywords: plastic waste, plastic aggregate, environmentally friendly solution

1. INTRODUCTION

Environmental issues that we are facing today. Plastic waste can take anywhere from 20 to 500 years to decompose. India is generating about 3.5 million tons of plastic waste annually and the per capita plastic waste generation has almost doubled over the last five years. Plastic has become one of most pressing. The average plastic waste generation in the country is around 6.92 per cent of municipal solid waste (MSW). Extrapolation of plastic waste generation data from 60 major cities showed that around 25,940 tons of plastic waste per day (TPD) is generated. India. India recycles only 8 percentage of its plastic waste, reveals new study. And if the "business as usual " continues, the recycling capacity would only marginally go up to 11 percent by 2035, with India's plastic use expect to rise to 70.5 million tons (MT) by then from the current production of 24.1 MT.

Behaviour of Steel Fiber Reinforced Concrete in Deep Beam for Flexure

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Abstract: Use of deep beam in construction field saves money as well as increase the strength of structure. Reinforced concrete deep beams have very useful structural application such as piles-caps, water tanks and tall buildings. Addition of steel fibers gives good results to both load carrying capacity and increase the flexural strength of the deep beam. Steel fiber is kind of newly developed reinforced material for concrete widely adopted globally now a day, which features good performance in anti-crack, pressure resistance, anti-abrasion bending toughness, affinity with concrete, reinforcement for construction element component and lengthy service life. Thus by using the steel fiber reinforced deep beam with varying percentage of steel fibers increases the first crack load and the ultimate load which gives the high flexural strength to the structure and achieves economy. This paper includes study of behaviour of steel fiber reinforced concrete in deep beam with advantages, disadvantages, properties of steel fiber etc.

Keywords: Steel Fiber, Beam, Anti-Abrasion Bending Toughness, Affinity, Reinforcement.

I. INTRODUCTION

Fiber Reinforced Concrete can be defined as a composite material consisting of mixtures of cement, mortar or concrete and discontinuous, discrete, uniformly dispersed suitable fibers. Fiber reinforced concrete (FRC) has been widely used in industrial pavements and non-structural elements, such as, pipes, culverts, tunnels, and precast elements. The addition of randomly oriented discontinuous fibers in cementitious materials reduces the level of micro-cracking and enhances the toughness, ductility and post-cracking tensile resistance of concrete members. The strengthening effect of fibers in the concrete matrix is achieved primarily due to the bridging effect of fibers at the crack interfaces. The primary failure mechanisms of fibers in the concrete matrix are fiber pull-out, fiber rupture, and fiber debonding. The properties of fibers play an important role in determining the predominant mechanism of failure as well as on the macroscopic behavior of the cracked FRC members. While the small-sized (micro) steel fibers in the concrete mix enhances the compressive and splitting tensile strengths, the large-sized (macro) fibers, on the other hand, yield the opposite mechanical effects. Different fibers used in the structural concrete applications can be broadly divided into two categories, namely, high-modulus (metallic) and low-modulus (non-metallic). Steel and polypropylene are extensively used as the metallic and non-metallic fibers in the FRC applications, respectively. Polypropylene fibers in the concrete mix provide the advantages of higher durability, reducing the shrinkage of concrete, and reducing the spalling effect in high-strength concrete subjected to elevated temperatures. These fibers are particularly effective in controlling the propagation of micro cracks in concrete because of the lower stiffness, high aspect ratios, and increased number of fibers at a given volume fraction. Fiber reinforced concrete are of different types and properties with many advantages. Steel fiber reinforced concrete is an alternative to traditional reinforced concrete for certain application areas. Steel fibers are a discontinuous, 3-dimensionally orientated, isotropic reinforcement, once they are mixed into the concrete. Steel fibers bridge the crack at very small crack openings, transfer stresses and develop post crack strength in the concrete. Fiber reinforced concrete (FRC) is concrete containing fibrous material which increases its structural integrity. It contains short discrete fibers that are uniformly distributed and randomly oriented. Fibers include steel fibers, glass fibers, synthetic fibers and natural fibers. Within these different fibers that

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ABSTRACT-Use of deep beam in construction field saves money as well as increase the strength of structure. Reinforced concrete deep beams have very useful structural application such as piles-caps, water tanks and tall buildings. Addition of steel fibers gives good results to both load carrying capacity and increase the flexural strength of the deep beam. Steel fiber is kind of newly developed reinforced material for concrete widely adopted globally now a day, which features good performance in anti-crack, pressure resistance, anti-abrasion bending toughness, affinity with concrete, reinforcement for construction element component and lengthy service life. Thus by using the steel fiber reinforced deep beam with varying percentage of steel fibers increases the first crack load and the ultimate load which gives the high flexural strength to the structure and achieves economy. This paper includes study of behaviour of steel fiber reinforced concrete in deep beam with advantages, disadvantages, properties of steel fiber etc.

Keywords: Steel Fiber, Beam, Anti-Abrasion Bending Toughness, Affinity, Reinforcement

INTRODUCTION

Fiber Reinforced Concrete can be defined as a composite material consisting of mixtures of cement, mortar or concrete and discontinuous, discrete, uniformly dispersed suitable fibers. Fiber reinforced concrete (FRC) has been widely used in industrial pavements and non-structural elements, such as, pipes, culverts, tunnels, and precast elements. The addition of randomly oriented discontinuous fibers in cementitious

materials reduces the level of micro-cracking and enhances the toughness, ductility and post-cracking tensile resistance of concrete members. The strengthening effect of fibers in the concrete matrix is achieved primarily due to the bridging effect of fibers at the crack interfaces. The primary failure mechanisms of fibers in the concrete matrix are fiber pull-out, fiber rupture, and fiber debonding. The properties of fibers play an important role in determining the predominant mechanism of failure as well as on the macroscopic behavior of the cracked FRC members. While the small-sized (micro) steel fibers in the concrete mix enhances the compressive and splitting tensile strengths, the large-sized (macro) fibers, on the other hand, yield the opposite mechanical effects. Different fibers used in the structural concrete applications can be broadly divided into two categories, namely, high-modulus (metallic) and low-modulus (non-metallic). Steel and polypropylene are extensively used as the metallic and non-metallic fibers in the FRC applications, respectively. Polypropylene fibers in the concrete mix provide the advantages of higher durability, reducing the shrinkage of concrete, and reducing the spalling effect in high-strength concrete subjected to elevated temperatures. These fibers are particularly effective in controlling the propagation of micro cracks in concrete because of the lower stiffness, high aspect ratios, and increased number of fibers at a given volume fraction. Fiber reinforced concrete are of different types and properties with many advantages. Steel fiber reinforced concrete is an alternative to traditional reinforced concrete for certain application areas. Steel fibers are a discontinuous, 3-dimensionally orientated, isotropic reinforcement, once they are mixed into the concrete. Steel fibers bridge the crack at very small crack openings, transfer stresses and develop post crack strength in the concrete. Fiber reinforced concrete (FRC) is concrete containing fibrous material which increases its structural integrity. It contains short discrete



Review Paper on Experimental Investigation on Self Sustainable Building Material Used for Low-Cost Housing

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Abstract:

The global challenge of providing adequate housing for burgeoning populations, especially in economically disadvantaged regions, necessitates innovative approaches to construction. This study presents an experimental investigation into the feasibility and effectiveness of self-sustainable materials for low-cost housing solutions. By leveraging sustainable materials, this research aims to address the dual challenges of affordability and environmental impact in housing construction.

The study employs a combination of quantitative analysis and qualitative assessment to evaluate the performance of various self-sustainable materials in the context of low-cost housing. These materials encompass a range of options including recycled materials, locally sourced natural resources, and innovative composites designed for affordability, durability, and eco-friendliness.

Key parameters examined include structural integrity, thermal insulation properties, moisture resistance, and overall environmental footprint.

Experimental methodologies include laboratory testing, field trials, and computational modelling to comprehensively assess the suitability of the selected materials for low-cost housing applications. Findings from this investigation contribute valuable insights into the viability of self-sustainable materials for addressing housing challenges in resource-constrained communities. The results not only inform the development of cost-effective housing solutions but also underscore the importance of sustainable practices in mitigating environmental impacts associated with construction activities.

Ultimately, this research endeavours to bridge the gap between sustainable materials innovation and practical implementation, offering tangible pathways towards the realization of affordable, eco-friendly housing solutions for communities worldwide.

Keyword: sustainable material , low-cost housing, eco-friendly,

Experimental Investigation on Self Sustainable Building Material Used for Low-Cost Housing

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Abstract—The pursuit of sustainable housing solutions, particularly for low-income communities, remains a critical challenge worldwide. In response, this study investigates the viability of self-sustainable building materials for low-cost housing. The research explores novel materials and techniques that aim to minimize environmental impact, reduce construction costs, and enhance the durability and efficiency of housing units. Using a combination of experimental analysis and field assessments, various self-sustainable building materials were evaluated for their structural integrity, thermal performance, and environmental sustainability. Key factors such as material composition, manufacturing processes, and long-term performance were scrutinized to determine their suitability for low-cost housing applications. The findings highlight promising advancements in the development of self-sustainable building materials, including recycled aggregates, natural fibers, and alternative binders. These materials demonstrate potential in providing affordable housing solutions while mitigating the environmental footprint associated with traditional construction practices. Moreover, the study assesses the economic feasibility and scalability of adopting self-sustainable building materials in low-cost housing projects. By comparing the costs and benefits of alternative materials, insights are gained into the potential challenges and opportunities for widespread adoption within the construction industry. Overall, this research contributes to the ongoing discourse on sustainable housing by presenting empirical evidence of self-sustainable building materials' efficacy in addressing the housing needs of low-income communities. The findings underscore the importance of innovation and collaboration in creating affordable, eco-friendly housing solutions that prioritize social equity and environmental stewardship.

Keyword: sustainable material, low-cost housing, eco-friendly

I. INTRODUCTION

The global challenge of providing adequate housing for low-income communities necessitates innovative approaches that balance affordability, sustainability, and quality. Traditional construction materials and methods often pose significant barriers due to their high costs, environmental impact, and limited availability in resource-constrained regions. In response, there is a growing interest in exploring self-sustainable building materials as a viable alternative for low-cost housing initiatives. Self-sustainable building materials encompass a diverse range of innovative solutions designed to minimize resource consumption, reduce carbon emissions, and enhance building performance over their lifecycle. These materials leverage principles of circular economy, renewable resources, and low-impact manufacturing processes to address the complex challenges associated with affordable housing provision.

This study seeks to investigate the feasibility and efficacy of self-sustainable building materials specifically tailored for low-cost housing applications. By conducting experimental investigations, the research aims to evaluate the structural, thermal, and environmental performance of these materials in real-world scenarios. Key objectives include:

An Experimental Study of Concrete Mixed with Coconut Shell as Partial Replacement of Course Aggregate

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Abstract - The high cost of conventional construction materials affects the economy of structure. The possibility of utilizing recycled coconut shell aggregates in concrete as coarse aggregate is examined in the present study. An optimum percentage replacement of coarse aggregate with coconut shell aggregate is determined from the study. Coconut shell is a lightweight material thus producing lightweight concrete. The replacement of coarse aggregate of coconut shell by 10%, 20% and 30%. The Design mix used is M20 grade and testing of specimens are conducted after 7 and 28 days of curing. The flexural and compressive strength of concrete are tests. The main objective is to encourage the use of these waste products as construction materials in low-cost housing. Aggregate is a major ingredient for making concrete, occupying almost 70-80% part of concrete. Conventionally crushed rocks are used as coarse aggregate and river sand as fine aggregate. Both are naturally available materials. Due to the speedy growth of construction works, conventional aggregate sources are exhaust very fast leading to a significant increase in the cost of construction. For sustainable development, these materials should be used wisely and alternative materials need to be searched to replace regular aggregate. A large number of studies have been done to search for alternative materials for the production of concrete. At the same time due to fast industrialization, production of waste material is increasing day by day. Its disposal has become a real problem. It can be concluded that the ideal amount of coconut shell replacement for coarse aggregate for M20 Concrete is 10% -20%.

Key Words: Concrete Mix, Coconut shell, Low cost housing, Flexural strength, Compressive strength, Design mix, Replacement of Course Aggregate.

INTRODUCTION

Concrete utilization is increasing at a higher rate by the development of infrastructures. Because of more extraction of the concrete, there is continuous aggregate extraction from natural resources that leads to ecological imbalance and depletion. To manage the imbalance, the waste that is produced from coconut shells is used in replacement of aggregates. In India, 90% production of coconut is in south India. The coconut shell is crushed in a crusher machine after sieving in a sieve 10 mm coconut shell is collected. Coconut shell is used as recycled lightweight aggregate in concrete.

A research effort has been made to "match society's need for safe and economic disposal of waste materials. The use of waste materials saves natural resources and disposal spaces and helps to maintain a clean environment. The current concrete construction practice is thought unsustainable because, not only is it consuming enormous quantities of stone, sand, and drinking water, but also two billion tons a year of Portland cement, which releases greenhouse gases leading to global warming. Experiments have been conducted for waste materials like rubber tires, e-waste, coconut shells, blast furnace slag, waste plastic, demolished concrete constituents, wastewater, etc. Construction waste recycling plants are now installed in various countries but they are partly a solution to the waste

Experimental Studies on Ground Improvement Using Stone Column with Borehole Method

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Abstract—This research examined the ground improvement technique for enhancing the load-bearing capacity and enhancing of weak or compressible soils. In this study, we minimize the cost of ground improvement and make environment friendly solution for ground improvement. The research involves a review of the existing literature, including the Objectives, methodology, and case studies related to stone column implementation. Laboratory testing and field investigations are conducted to assess the geotechnical properties of the soil and the behavior of stone columns under different loading conditions. The project aims to provide insights into the geotechnical behavior of stone columns and their effectiveness in stabilizing weak soils. Furthermore, the study will explore the economic and environmental aspects of this ground improvement technique. The findings of this research are expected to contribute valuable knowledge to the field of geotechnical engineering, assisting engineers and construction professionals in making informed decisions regarding ground improvement methods.

Keywords: Black Cotton Soil, Cost effective, Environment friendly, Ground Improvement, Load Bearing Capacity, Stone Column, Soil Sample, Soil Stabilization.

I. INTRODUCTION

Stone column represent a method that frequently used in civil engineering to enhance and to stable soils that categorized as weak such as soft or loose sand. This technique facilitates the construction of wide range infrastructure, including highway facilities, storage tanks, embankment and bridge abutments, by bolstering the stability of the underlying ground. Stone columns are typically constructed by drilling or vibrating into the ground. This process involves creating holes or cavities in the soil. Ground improvement, this technique can help consolidate loose or soft soils, making them more stable. Stone column ground improvement is a versatile and effective geotechnical solution used to enhance the load bearing capacity. A Novel method stone column has emerged as a solution for enhancing the bearing capacity of weak deposits, such as soft clay and loose sands. It's application has been on the rise in India in recent years. In this method a pre bore hole filled with granular material and compacted by a heavyweight rammer over the borehole.

I.I. BACKGROUND

There are numerous ground improvement techniques are in practice to improve the properties of the ground. Stone column technique is a well-established technique and is best suited for improving soft clays, silts and also for loose sand deposits. The concept of Granular column was first adopted in France in 1830 to improve the properties of soil and later this is adopted all over the world to increase the bearing capacity, to reduce settlement, and also to increase the resistance to liquefaction (Barksdale and Bachus 1983, Alamgir et al 1996). Granular columns are formed utilizing either an electric or hydraulic vibrating probe activated mechanism. The original development of this probe can be attributed to Steuzeman. The vibratory probe, essentially in cylindrical shape consists of a hydraulic or electric motor mounted within a cylindrical casing of 350mm-450mm in diameter and 2.0m – 4.5m in length. The motor operates a rotating eccentric weight, delivering lateral vibration and compaction. Granular columns are constructed using this vibrating probe either by wet process or dry process.

I.II. DESCRIPTION

Stone columns are cylindrical shape structures constructed beneath the ground level, comprising granular material ranging from 25 to 100 mm in size. The process involves creating a cavity in the soft soil using various techniques, followed by filling it with compacted layers of stones to form the complete column. Upon the placement of a structure above the treated area, a significant portion of the load (around 80-90%) is borne by the stone columns due to their higher stiffness, while the remaining 10-20% is supported by the surrounding clay deposit. This distribution of load, along with the surcharge load, enables the soft clay to provide ample confinement to the cylindrical columns. Predicting the maximum permissible actual stress on the columns relies on established theoretical frameworks. Notably, areas treated with stone columns are suitable for supporting flexible structures like embankments and oil storage tanks, as they may still experience notable settlement post-treatment, typically ranging from

Experimental Studies on Ground Improvement Using Stone Column

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Abstract – This research examined the ground improvement technique for enhancing the load-bearing capacity and enhancing of weak or compressible soils. In this study, we focus on how we minimize the cost of ground improvement and make environment friendly solution for ground improvement. The research involves a review of the existing literature, including the Objectives, methodology, and case studies related to stone column implementation. Laboratory testing and field investigations are conducted to assess the geotechnical properties of the soil and the behavior of stone columns under different loading conditions. The project aims to provide insights into the geotechnical behavior of stone columns and their effectiveness in stabilizing weak soils. Furthermore, the study will explore the economic and environmental aspects of this ground improvement technique. The findings of this research are expected to contribute valuable knowledge to the field of geotechnical engineering, assisting engineers and construction professionals in making informed decisions regarding ground improvement methods.

Keywords : Ground Improvement, Stone Column, Soil Sample, cost effective, environment friendly, Load Bearing Capacity, Black Cotton Soil, Soil Stabilization.

1. INTRODUCTION

Stone Column is a technique used in civil engineering to improve and stabilize soils considered weak as soft clays or silts and loose sands, enabling the construction of highway facilities, storage tanks, embankments, bridge abutments and so on. Stone columns are typically constructed by drilling or vibrating into the ground. This process involves creating holes or cavities in the soil. Ground improvement, this technique can help consolidate loose or soft soils, making them more stable. Stone column ground improvement is a versatile and effective geotechnical solution used to enhance the load bearing capacity. Stone column technique has been developed very recently for improving bearing capacity and to enhance weak deposits like soft clays and loose sands. It has increasingly adopted in India. In this method a pre bore hole filled with granular material and compacted by a heavyweight rammer over the borehole.

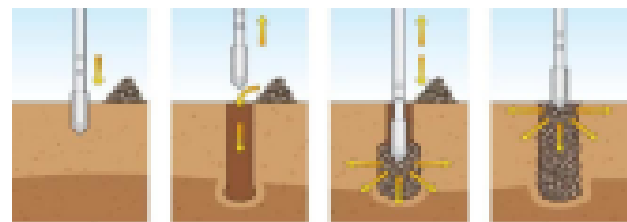


Fig No. 1 : Ground improvement using stone column.

Research Paper on Study and Analysis Low Cost Housing

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Abstract—This paper delves into the multifaceted realm of low-cost housing, exploring diverse approaches and strategies aimed at addressing the pressing need for affordable accommodation. Through an extensive review of literature and case studies, it examines the intricate interplay of factors influencing housing affordability, including construction techniques, materials, design innovations, policy frameworks, and socio-economic considerations. Additionally, it scrutinizes the role of technology, sustainability principles, and community engagement in shaping the landscape of affordable housing solutions. By synthesizing insights from various perspectives, this abstract provides a holistic understanding of low-cost housing initiatives, offering valuable insights for policymakers, urban planners, developers, and stakeholders committed to fostering inclusive and sustainable communities.

Keywords: Affordability, Construction material, House technique, Urban Planning.

I. INTRODUCTION

The issue of affordable housing stands as a critical challenge facing communities worldwide. As urbanization accelerates and populations swell, the demand for housing outpaces supply, exacerbating affordability concerns for low and moderate-income households. In response to this pressing need, governments, policymakers, developers, and researchers have intensified efforts to explore innovative approaches to provide adequate and affordable housing options.

This study aims to delve deeply into the complex landscape of low-cost housing, offering a comprehensive analysis of the multifaceted factors that shape its feasibility, accessibility, and sustainability. By examining a diverse array of strategies, technologies, policies, and case studies, this research seeks to illuminate the pathways toward achieving housing affordability for diverse demographics.

Through a synthesis of existing literature, empirical evidence, and expert insights, this study aims to uncover the underlying drivers and barriers to the provision of low-cost housing solutions. Furthermore, it seeks to identify emerging trends, best practices, and lessons learned from successful initiatives around the globe.

Ultimately, this research endeavors to contribute to the ongoing discourse on affordable housing by providing valuable insights, evidence-based recommendations, and actionable strategies for policymakers, urban planners, developers, and other stakeholders committed to addressing the housing affordability crisis and fostering inclusive, resilient communities.

II. REVIEW ON LOW COST BUILDING

LITERATURE REVIEW

The literature on low-cost housing encompasses a rich tapestry of research spanning disciplines such as urban planning, architecture, economics, sociology, and public policy. Within this expansive body of knowledge, several key themes and trends emerge, shedding light on the complexities and challenges inherent in addressing the global housing affordability crisis.

1. **Housing Affordability Dynamics:** Numerous studies have examined the intricate interplay of factors contributing to housing affordability, including income levels, housing prices, land availability, construction costs, and demographic trends. Understanding these dynamics is essential for devising effective strategies to enhance affordability for low and moderate-income households.

Innovative Construction Techniques and Materials: Researchers have explored innovative construction techniques and alternative building materials as promising avenues for reducing construction costs without compromising structural integrity and quality. Examples include modular construction, prefabricated components, and sustainable materials like bamboo and earth-based materials.

2. **Policy Interventions and Regulatory:** The literature highlights the pivotal role of government policies and regulatory

III. METHODOLOGY

1. Pradhan Mantri Awas Yojana - Rural (PMAY)

Department: District Rural Development System

Review Paper on Study and Analysis on Low-Cost Housing

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Abstract –

Studying and analyzing low-cost housing involves examining various aspects such as design, construction materials, location, affordability, sustainability, and social impact. Here's a breakdown of some key considerations:

- Design:** Low-cost housing often requires innovative designs that maximize space utilization while minimizing costs. This may include modular construction, tiny homes, or efficient layouts that reduce the need for excessive materials.
- Construction Materials:** The choice of materials significantly impacts the cost of housing. Analyzing alternative, locally-sourced materials that are both affordable and durable is essential. This might involve using materials like bamboo, recycled materials, or compressed earth blocks.
- Location:** The location of low-cost housing projects is crucial for accessibility to job opportunities, transportation, and essential services. Analyzing the availability of land and infrastructure in suitable locations can influence the feasibility of such projects.
- Affordability:** True low-cost housing must be affordable not only in terms of initial construction but also in terms of ongoing maintenance and utilities. Analyzing the total cost of ownership over time is essential to ensure that housing remains accessible to its intended occupants.
- Sustainability:** Sustainable practices should be integrated into low-cost housing projects to minimize environmental impact and reduce ongoing costs. This may involve energy-efficient design, renewable energy sources, water conservation, and waste management strategies.
- Social Impact:** Low-cost housing projects should consider the social impact on communities, including issues like inclusivity, community engagement, and empowerment of

residents. Analyzing the social dynamics and potential benefits

Key Words: Affordability, Construction material , House technique , Urban Planning ,

INTRODUCTION

Low-cost housing refers to affordable housing solutions designed to meet the needs of people with limited financial resources. These projects often focus on providing decent living conditions, basic amenities, and sustainable construction methods at a reduced cost. They play a crucial role in addressing housing shortages and improving living standards for low-income individuals and families and also government schemes like

PRADHAN MANTRI AWAS YOJANA

Pradhan Mantri Awas Yojana (PMAY) is a credit-linked subsidy scheme by the Government of India to facilitate access to affordable housing for the low and moderate-income residents of the country. Pradhan Mantri Awas Yojana (Urban) (PMAY-U) for the urban poor and Pradhan Mantri Awas Yojana (Gramin)[3] (PMAY-G and also PMAY-R) for the rural poor, the former administered by Ministry of Housing and Urban Affairs and the latter by Ministry of Rural Developments.

SHABARI ADIVASI GHARKUL YOJANA

a permanent Gharkul with an area of 269 sq. Ft. Has been provided for the beneficiaries of Scheduled Tribes in the tribal areas as well as for the citizens of Scheduled Tribes in the tribal grand area. The Main Objective of Shabari Adivasi modern construction technique and materials which could lead to economic solutions. As the cost of construction is has gone beyond the limits of affordability for low income groups as well as large section of middle income group.,

Gharkul Yojana is to provide permanent houses to the Scheduled Tribes of the State who do not have permanent



A Review on Drip Irrigation System

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Abstract-

Irrigation can be defined as the process of applying artificial water to soil or land in order to promote the growth of agricultural crops such as corn and wheat. Water irrigation has a number of advantages, including an increase in crop yield, protection against famine, revenue generation, and the avoidance of mixed cropping. It also has advantages in navigation, hydroelectric power generation, and the creation of employment opportunities. It should be noted that irrigation has both advantages and disadvantages, just like everything else. Irrigation has a number of disadvantages, including the waste of irrigation water, formation of marshy lands, damp weather, and the loss of valuable agricultural land. Drip irrigation is one of the surface and subsurface irrigation methods that we will discuss in this paper. We will also discuss the various effects and advancements in this technique that have occurred as a result of the research conducted. Last but not least, the significance and necessity of this system will be discussed Drip Irrigation system. It has huge ability for water and nutrient conservation. The main aim is to reduce water scarcity near root zone and reduce evaporation. The assessment of yield and water productivity of clementine trees, cotton, pomegranate cultivars etc. is discussed. Effect of Drip irrigation on economic factors, productivity, fertilization techniques and irrigation scheduling is studied. The drip irrigation on several cash crops like

cotton, jute, groundnut, etc. in different parts of countries like China, India, Japan, North Xinjiang, European countries etc. are discussed. The Assessment with season, geography, environment, availability of resources is systematically highlighted Improvement and future scope for sustainable development is discussed. Also the computational analysis of Drip irrigation methodology and technology is done in order to improve the productivity and minimize the efforts and use of resources. The modeling and monitoring of 3D flow of water under drip irrigation is also studied. The overall effort in the current review analysis is to develop an optimum methodology and technology to enhance the use of Drip irrigation in large scale cultivation and Production.

Key words:- Drip, Irrigation, Artificial Irrigation, Efficiency, Frames

Introduction:

The land and water represent the country's fundamental requirements for agriculture and economic growth. The International Water Management Institute (IWMI) estimates that by the end of 2025, 1/3 of the world's inhabitants will face the absolute water shortage. A process of irrigation was considered necessary for rapid development of agriculture that consumes much than eighty percentages of an exploitable water supplies of world.

SOIL STABILIZATION OF BLACK COTTON SOIL BY USING GRANITE POWDER

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Abstract: The black cotton soil is known as expansive soil due to its property of swelling and expansiveness with influence of variance moisture in soil. It also shows shrinkage behavior when dried. Due to these properties the strength characteristics are also affected adversely. The black cotton soil is also widely available in all around the world which leads us to wastage of land for construction uses to resolve this problem we can replace the expansive soil by non-expansive soil which is also a costly option so in this present paper we have stabilize a soil using waste material named marble powder which is a byproduct of marble industries. For the determination of properties, we have performed atterberg's limit test, particle size distribution by wet sieve analysis, water content test, specific gravity test, OMC and MDD test on the sample of granite powder. We have mark a great improvement in engineering properties of black cotton soil by stabilizing it with 5%, 10% and 15%, of replacement by granite powder. It also gives large decrement in swelling and shrinkage behavior of soil.

Keywords: Soil Stabilization, Granite powder , Ground improvement technique, Marble dust, Cost effective, Black Cotton Soil.

1. INTRODUCTION

A. BLACK COTTON SOIL:-

Expansive soils, popularly known as black cotton soils in India are, amongst the most problematic soils from Civil Engineering construction point of view. Of the various factors that affect the swelling behavior of these soils, the basic mineralogical composition is very important. Most expansive soils are rich in mineral montmorillonite and a few in elite.

The degree of expansion being more in the case of the former. Soil suction is another quality that can be used to characterize a soil's affinity for water on its volume change behavior.

Black cotton soil is heavy clay soil, varying from clay to loam; it is generally light to dark grey in color. Cotton grows in this kind of soil. The soil prevails generally in central and southern parts of India.

The most important characteristic of the soil is, when dry, it shrinks and is hard like stone and has very high bearing capacity. Large cracks are formed in the bulk of the soil. The whole area splits up and cracks up to 150 mm wide are formed up to a depth of 3.0 to 3.5 meter. But when the soil is moist it expands, becomes very soft and loses bearing capacity.

Soil Stabilization of Black Cotton Soil by Using Granite Powder

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Abstract—The Black Cotton soil is known as expansive soil due to its property of swelling and expansiveness with influence of friction humidity in soil. It also shows loss gestic when dried. Due to these parcels the strength characteristics are also affected negatively. The black cotton soil is also extensively available in all around the world which leads us to wastage of land for construction uses to resolve this problem we can replace the expansive soil by non-expansive soil which is also a expensive option so in this present paper we've stabilize a soil using waste material named marble greasepaint which is a derivate of marble diligence. For the determination of parcels, we've performed atterberg's limit test, flyspeck size distribution by wet sieve analysis, water content test, specific graveness test, OMC and MDD test on the sample of determinedness greasepaint. We've marked a great enhancement in engineering parcels of black cotton soil by stabilizing it with 5, 10 and 15, of relief by determinedness greasepaint. It also gives large diminishment in swelling and loss gestic of soil.

Keywords: Soil Stabilization, Granite powder , Ground improvement technique, Marble dust, Cost effective, Black Cotton Soil.

1 INTRODUCTION

SOIL STABILIZATION:

A. WHAT IS SOIL STABILIZATION?

Soil Stabilization is the natural, chemical or mechanical revision of soil engineering parcels. In civil engineering, soil stabilization is a fashion to upgrade and ameliorate the engineering parcels of soils. These parcels include mechanical strength, permeability, compressibility, continuity and malleability. Physical or mechanical enhancement is common but some seminaries of study prefer to use the term ' stabilization ' in reference to chemical advancements in the soil parcels by adding chemical cocktails.

For any construction design, whether it's a structure, a road or an airport, the base soil acts as the foundation. also, soil is one of the pivotal construction raw accoutrements . As similar, the soil should retain parcels that produce a strong foundation.

The practice of stabilizing or modifying soils dates back to the age of the Romans. Other nations similar as the United States and China among numerous others espoused it in the ultimate half of the 20thcentury.

What are the soil stabilization methods?

Mechanical stabilization – its ideal is to achieve thick, well canted material by mixing and compacting two or further soils and/ or summations.

Chemical stabilization – refers to the revision of soil parcels by changing its chemical make- up with different complements like lime, cement, fly ash or by the addition of chemicals similar as polymers, resins and enzymes.

Biological stabilization – refers to the planting of vegetative cover to help wind, water and soil corrosion. The roots hold and aggregate soil patches together although in the morning, other styles of stabilization should be used to support the growth of seeds and seedlings.

• What is the purpose of soil stabilization?

Substituting poor grade soils with summations enjoying more favorable engineering parcels.

improvement of the strength and thus bearing capacity of the soil.

An Experimental Study on Self Compacting Concrete

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Abstract—Concrete occupies unique position among the modern construction materials, Concrete is a material used in building construction, consisting of a hard, chemically inert particulate substance, known as an aggregate (usually made for different types of sand and gravel), that is bond by cement and water. This paper gives a review on Self Compacting Concrete (SCC) to be made using various Mineral Admixtures and Fibers. When large quantity of heavy reinforcement needs is to be placed in reinforced concrete (RC) member, it is difficult ensure fully compacted without voids or honeycombs. Compaction by manual or by mechanical vibrators is very difficult in this situation This type of concrete mixture does not require any compaction and it saves time, labour and energy. This review paper explains the utilization of fibres and various mineral admixtures in the properties of Self Compacting Concrete. The addition of lime stone filler up to 20 % by cement weight reduced cost and enhanced the performance of self-compacted concrete SCC in fresh and hardened stages. It sounds like high slag Portland cement is proving to be effective in severe conditions, especially for first-generation self-compacting concrete (SCC) used in repair applications and in areas with limited access to vibration. The key is achieving the right balance between yield stress and viscosity in the paste, often facilitated by specially formulated high-range water reducers to maintain the desired flow characteristics.

Absolutely, achieving the right balance in concrete mix design is crucial to ensure strength, durability, and workability while also being cost-effective. Segregation can occur if the viscosity of the paste isn't sufficient to support the aggregate particles in suspension. This emphasizes the importance of selecting suitable ingredients and determining their proportions accurately to meet the desired concrete properties.

Keywords: Self Compacting Concrete, Mix design, Mineral Admixtures, Fibers, Strength, Durability, Workability.

I. INTRODUCTION

Exactly, self-compacting concrete (SCC) is designed to be a fluid mixture that can be placed without the need for external energy, such as vibration, even in challenging conditions or around congested reinforcement. It should maintain its homogeneity throughout the placing process and flow smoothly through the reinforcement without any manual intervention. These characteristics make SCC particularly useful in situations where traditional concrete placement methods are impractical or difficult.

In recent years, there is a growing interest in the use of self-compacting concrete (SCC), which provides an overall structure durability. The self-compacting concrete is characterized by its capacity to flow and to fill out the most restricted places of the formwork, without losing homogeneity. The uses of mineral additions or powders have a purpose, besides substituting a part of the cement, it propitiates the appropriate viscosity so that the self-compaction is reached. Japan has used self-compacting concrete in It's interesting to note the varying adoption rates of self-compacting concrete (SCC) in different regions. While Europe has seen a significant increase in the construction of SCC bridges over the past five years, the use of SCC in highway bridge construction remains limited in the United States. However, there's growing interest in applying SCC technology in architectural concrete within the U.S. precast concrete industry. The high potential of SCC for broader structural applications in highway bridge construction suggests that its use may expand further in the future. however the relatively high material the cost remains a significant barrier to the widespread adoption of specialty concrete like self-compacting concrete (SCC) across various segments of the construction industry, including commercial and residential construction. SCC tends to be more expensive than conventional concrete with similar mechanical properties due to the higher demand for cementation materials and chemical admixtures, including high-range water-reducing admixtures (HRWRA) and viscosity enhancing admixtures (VEA). Using ground glass blast furnace slag GGBFS in self-compacting concrete are reported. These powders were used as a partial replacement of the cement content. The results indicated that self-compacting concrete could be successfully developed

AN EXPERIMENTAL STUDY ON SELF COMPACTING CONCRETE

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Abstract - This paper gives a review on Self Compacting Concrete (SCC) to be made using various Mineral Admixtures and Fibers. In current scenario of construction industries due to demand in the construction of large and complex structures, which often leads to difficult conditions. When large quantity of heavy reinforcement is to be placed in reinforced concrete (RC) member, it is difficult ensure fully compacted without voids or honeycombs. Compaction by manual or by mechanical vibrators is very difficult in this situation. That leads to the invention of new type of concrete named as self-compacting concrete (SCC). This type of concrete flows easily around the reinforcement and into all corners of the formwork. Self-compacting concrete describe a concrete with the ability to compact itself only by means of its own weight without the requirement of vibration. Self-compacting concrete also known as Self-consolidating Concrete or Self Compacting High-Performance Concrete. It is very fluid and can pass around obstructions and fill all the nooks and corners without the risk of either mortar or other ingredients of concrete separating out, at same time there are no entrapped air or rock pockets. This type of concrete mixture does not require any compaction and it saves time, labour and energy. This review paper explains the utilization of fibers and various mineral admixtures in the properties of Self Compacting Concrete.

Key Words: Self Compacting Concrete, Mix design, Mineral Admixtures, Fibers, Durability, Workability.

1. INTRODUCTION:

The introduction of the "modern" self-compacting concrete (SCC) is associated with the drive towards better quality of concrete pursued in Japan in late 1980's, where the lack of uniform and complete compactional been identified as the primary factor responsible for poor performance of concrete structures. There were and practical means by which full compaction of concrete of the need to compact, by vibration or any other means, on site was ever to be fully guaranteed, instead, the focus therefore turned onto the elimination. This led to the development of the first practicable SCC by researchers Okamura & Ouchi¹ at the University of Tokyo. The SCC, as the name suggests, does not require to be vibrated to achieve full compaction. These include an improved quality of concrete and reduction of on-site repairs, faster construction times, lower overall costs, facilitation of introduction of automation into concrete construction. The composition of SCC mixes includes substantial proportions of fine-grained inorganic materials; this offers possibilities for utilization of "dusts", which are currently waste products demanding with no practical applications and which are costly to dispose of. Current Indian scenario in

construction shows increased construction of large and complex structures, which often leads to difficult concreting conditions. Vibrating concrete in congested locations may cause some risk to labour in addition to noise stress. There are always doubts about the strength and durability placed in such locations. So, it is worthwhile to eliminate vibration in practice, if possible. In countries like Japan, Sweden, Thailand, UK etc., the knowledge of SCC has moved from domain of research to application. But in India, this knowledge is to be widespread.

2. LITERATURE REVIEW:

Dr. Mrs. S.A. Bhalechandra et.al: Studied the performance of steel fiber reinforced self-compacting concrete as plain self-compacting concrete is studied in depth but the fiber reinforced self-compacting concrete is not studied to that extent.

Prof. Aijaz Ahmad Zende et.al: Studied on Self Compacting Concrete (SCC) and compares it with Normal Concrete (NC). The word "Special Concrete" refers to the concrete which meets the special performance and requirements which may not be possible by using conventional materials and normal methods of concreting. Self-Compacting Concrete of the type of a special concrete which flows and consolidates. One under its own weight thereby eliminates the problems of placing concrete in difficult conditions and also reduces the time in placing large section and at the same time giving high strength and better durability characteristics as compared to the Normal Concrete. This paper discusses the various aspects of SCC including the materials and mix design, different test methods such as slump flow test, compression test, flexural test and also its performance characteristics and properties in the fresh and hardened state.

Pratibha Aggarwal et.al: Prepared an experimental procedure for the design of self-compacting concrete mixes. The test results for acceptance characteristics of self-compacting concrete such as slump flow, J-ring, V-funnel and L-Box are presented. Further, compressive strength at the ages of 7, 28, and 90 days was also determined and results are included here.

Eusra Emam Ali et.al: Has studied the effect of using recycled glass waste, as a partial replacement of fine aggregate, on the fresh and hardened properties of Self-Compacting Concrete (SCC). A total of 18 concrete mixes were produced with different cement contents (350, 400 and 450 kg/m³) at W/C ratio of 0.4. Recycled glass was used to replace fine aggregate in proportions of 0%, 10%, 20%, 30%, 40%, and 50%. The experimental results showed that the slump flow increased with the increase of recycled glass content. On the other hand, the compressive strength, splitting tensile strength, flexural strength and static modulus of elasticity of recycled glass (SCC) mixtures were decreased with the increase in the recycled glass

