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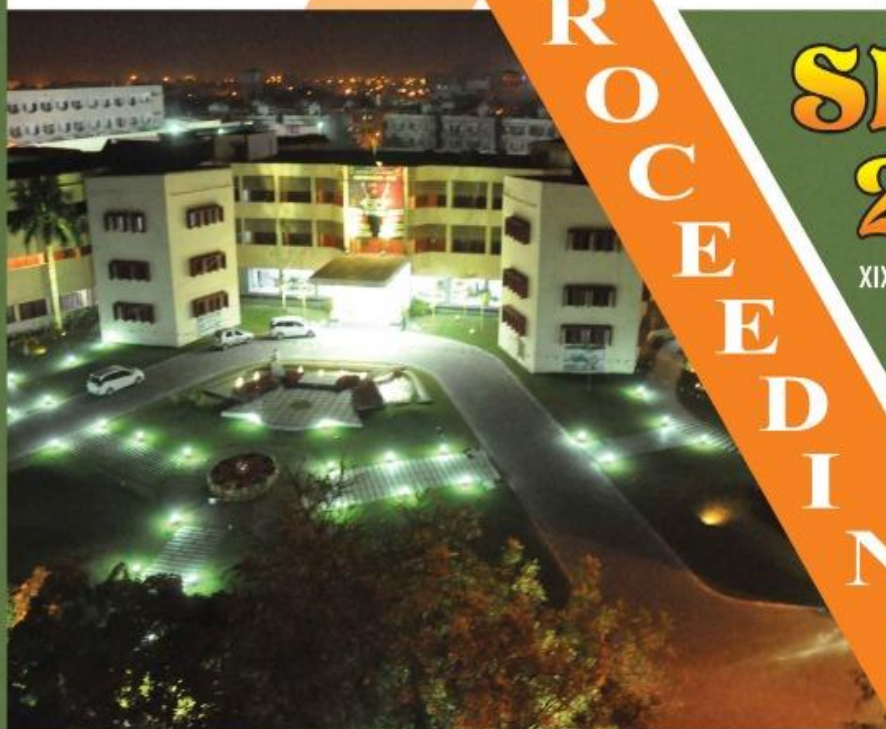


Date : 28th April, 2023

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SPARK 2023

XIX National Conference on
Emerging Trends
in Engineering
& Technology



Organised under the Centenary Celebration of,
**Rashtrasant Tukadoji Maharaj Nagpur University,
Nagpur**

In Association with

THE INSTITUTION OF ENGINEERS (INDIA)
INDIAN SOCIETY FOR TECHNICAL EDUCATION, NEW DELHI
INSTITUTION OF ELECTRONICS & TELECOMMUNICATION ENGINEERS



SPARK-2023

**XIX National Conference on Emerging Trends in Engineering &
Technology
28th April 2023**

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Chairperson's Message



Smt. Sumanmala B. Mulak

Hon. Chairperson, BCYRC, Nagpur

It gives me immense pleasure to see KDKCE among many educational institutions run by our society, emerge as a pioneer in the field of technical education. KDKCE is striving continuously to achieve technical excellence in all possible domains. Various departments come together to organize SPARK, a national level competition for the students of engineering every year and It won't be an exaggeration if the word SPARK is found synonymous to KDKCE. I assure the administrators, all possible support of the management, for activities like SPARK and wish them all the best in all such endeavours.

(Smt. Sumanmala B. Mulak)

Secretary's Message



Shri. Rajendra B. Mulak

Hon. Secretary, BCYRC, Nagpur

Perhaps KDKCE is one of the few colleges in the country to have thought of providing a platform for the budding engineering students to showcase their technical ideas in front of experts of the corresponding area and earn recognition. This novel thought triggered SPARK a couple of years ago. KDKCE untiringly is organizing this much sought after technical event and every year the response they are getting is huge. The management feels proud to be behind such a dedicated team of faculty members and student community which is active technically and is taking KDKCE to new heights with every possible effort. I wish them all success and guarantee support always.

(Shri. Rajendra B. Mulak)

Treasurer's Message



Shri. Yashraj R. Mulak

Hon. Treasurer, BCYRC, Nagpur

I feel honoured to be penning down my thoughts in support of SPARK 2023, purely a technical activity KDKCE is doing since a long time ago. The amount of planning needed and the zeal required to execute such an activity is worth admiring. The entire family of KDKCE comes together whenever activity of this kind is conceived and all along they are seeing success in terms of attracting huge participation from the student community pan India. Activity like SPARK provides student community to come together on a single platform and discuss various trends in technology and latest practices. My encouragement to KDKCE to hold such activities is always there and I am sure, like all these years even SPARK 2023 will make an impact in the minds of budding engineers.

(Shri. Yashraj R. Mulak)

Principal's Message



Dr. D. P. Singh

Principal, KDKCE, Nagpur

SPARK 2023 happens to be the National level Technical competition for students of engineering and management for the XIX time in continuation and every year the response is huge. SPARK starts with identifying various themes in different disciplines to cater to the latest technological trends. Every year some new themes tend to replace obsolete ones from the preceding version. SPARK never fails to ignite the young minds and students across the country tend to participate in this activity which has set a kind of “benchmark” in this region. For KDK family this activity is very prestigious and every member associated with this activity puts his/her best effort voluntarily. As a Principal of this institution, I wholeheartedly acknowledge the combined effort of the faculty members and the student community for their enthusiasm in organizing this mega event. My constant support and encouragement for such technical events can be taken for granted and I am sure that SPARK 2023 will be cherished by the students who are a part of this technical extravaganza.

(Dr. D.P. Singh)

Vice Principal's Message



Dr. A. M. Badar

Vice-Principal, KDKCE, Nagpur

Activities like SPARK, a technical paper presentation is very essential especially when it is taken on national platform. Such activities in technical institutions supplement conventional studies of undertaking different courses pertaining to their respective domains by students, in terms of providing technical knowhow prevailing in different parts of the country. Tremendous exchange of knowledge and information takes place during such events. Some ideas get recognised and suitably rewarded. Such activities give students of technical education to showcase their ideas and get to learn a lot from others during their interaction. This mega event attracts many students and has always been a looked forward to activity all these years. I, as an administrator ensure that all the facility needed is taken care of and extend any kind of help to the organizers for the execution of SPARK – 2023. Best luck team SPARK 2023.

(Dr. A. M. Badar)

Convener's Message



Dr. Shubhangi S. Ambekar

Professor & Head, Dept.of Electrical Engg. KDKCE, Nagpur
Convener, SPARK-2023

It is really fortunate to shoulder the responsibility of holding the most prestigious National level activity of KDKCE i.e. SPARK 2023. This mega technical event has the affiliations of Indian Society of Technical Education (ISTE, New Delhi), Institution of Engineers (IE, India) and Indian Electronics and Telecommunication Engineers (IETE). In today's competitive world of challenges, it is imperative for an engineering graduate coming out of an educational institute to be conversant with the latest technological trends prevailing in the field of practice. Institute is a place which prepares the students to cultivate scientific/technical temper during their study of four years. The aim of this symposium is to provide an opportunity for students to present their project and/or any concept expressed as a technical paper. There has been an attempt to cater to the needs of all major areas of technology, through this conference.

An activity like SPARK tries to bring out talents of students in the arenas like paper presentation. Students get to learn the art and science of technical write up. Indirect outcomes like knowledge sharing, communication skills, effective use of presentation tools, competitive spirit are assured during such an event. I am really impressed by the quantum of technical papers which have flooded in various

disciplines of Engineering and management. I am humbled by the untiring contribution of the faculty coordinators and student coordinators in making this event worth its purpose. The contributions of all the heads of the departments, vice-principal, principal and the management is worthy of appreciation. I am thankful to all the participants for contributing in terms of technical papers and projects, thus making SPARK 2023 a grand success. I use this forum to wish all the best to all the student community who are a part of SPARK 2023.

(Dr. Shubhangi S. Ambekar)

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Electrical Engineering

Design of Vienna rectifier

Chetan Lakade

The Vienna rectifier is a three-phase rectifier that provides high efficiency and low harmonic distortion in power electronics applications. This rectifier is designed with a special configuration of diodes and capacitors that can reduce the amount of harmonic distortion generated by the rectification process. The basic idea behind the Vienna rectifier is rectify and give DC output, the DC voltage gets filter through capacitor filter and lower its ripple in voltage, lower the harmonic distortion, then it gets pure AC output, which gives high efficiency and improve power factor. The two diodes are then used to rectify each of these parts separately. One diode conducts when the upper part of the phase voltage is positive with respect to the lower part, while the other diode conducts when the lower part of the phase voltage is positive with respect to the upper part. This results in a rectified voltage that has very low harmonic distortion and is nearly constant. The Vienna rectifier is widely used in power electronics applications that require high efficiency and low harmonic distortion, such as variable speed drives and renewable energy systems. Its unique design provides significant benefits over traditional rectifier topologies, making it a popular choice for many industrial and commercial applications.

An Efficient, Optimized and Solar Based Automatic Irrigation System using GSM Module

Ritik Ueek Palay Dhamgay Suraj Ghyar Rakesh sirsikar Pranay Punyapawar

The automatic solar-based irrigation system using a GSM modem is a novel solution to address the challenges faced by farmers in ensuring efficient use of water resources for crop cultivation. This system utilizes solar energy to power a water pump, which is controlled by a microcontroller. The GSM modem enables remote monitoring and control of the system, allowing farmers to receive real-time updates on the status of the irrigation system and make necessary adjustments as needed. The system also includes sensors to measure soil moisture levels and control the irrigation based on the crop water requirements, thus ensuring optimal water usage. This paper presents the design, development, and testing of the automatic solar-based irrigation system using a GSM modem, highlighting its potential to increase crop yields while conserving water resources.

Detecting Power Grid Synchronization Failure System on Sensing Frequency or Voltage Beyond the Acceptable Range

Krunal Gotmare Yash More Sushant Giradkar

In this project we are going to implement the use of up-to-date technology in sensing the very low variations in frequency or voltage magnitude of a generator in a Power grid in which there may be many generators working in synchronism with the grid in terms of phase sequence, voltage magnitude and frequency. In today's practical Power grid as we all know many generators or power source are working together and to maintain stability between all, the detection and isolation of the sources falling out of synchronism, is of crucial significance as otherwise it would have caused the entire system to fail. Hence various techniques have been developed in industries and power plants (especially solar power plants) to keep all the generators and sources in synchronism with the Power Grid and in case of and failure detect and isolate the failed generator out of the grid and hence maintain a stable operation of the Power System

IOT Based Electrical Switching Circuit for the Safety of Human and Electrical System

Kartik Wani Vaibhav Mohare Rohan Gaidhane

In this paper, we present an IoT-based electrical switching circuit that ensures the safety of both humans and electrical systems. The circuit has the capability to be broken manually by inserting a password via Wi-Fi and automatically by sensing smoke and temperature using smoke and temperature sensors. The proposed system provides an efficient and effective way to protect against electrical hazards

An overview on Electric Switching Circuit For The Safety Of Electrical System

Priyanka B Petkar Rajat S kothe Devashish S Panchbhai

The regulating and monitoring of circuit breakers using internet of things (IoT) is the topic of this study. Circuit breakers are a crucial component of the power system and play a significant role in the generation and transmission of electricity. When this action needs to be done online, maintaining reliable operation and monitoring of the high voltage circuit breakers is a significant problem. This paper outlines the design of an electrical equipment online monitoring and diagnosis system that collects, transmits, and processes data regarding the equipment under observation. The system is created with an interface on top of which various local and system applications can be recorded. The Microcontroller near the circuit breaker section will continuously communicate all the parameters of the circuit breaker to control room and it will be shown on screen of computer. Additionally, following a C.B trip, it sends a signal to the GSM module so that only registered numbers can get text messages with fault descriptions thanks to GSM.

Study Of Dynamic Voltage Restorer For Mitigation Of Voltage Sag And Swell ,

Pankaj Shripad Sarang Kamble Surendra Motghare

Voltage disturbances in the power system can now be reduced thanks to the quick advancements in power electronic technology. Voltage sags are thought to be the biggest issue for sensitive loads among the voltage disruptions plaguing the industry. A series-connected power electronic device called a "dynamic voltage restorer" (DVR) may swiftly correct voltage sags in the system and return the load voltage to its pre-fault level. DVR is seen as the most effective way to deal with this issue. The fundamental benefit of the DVR is that it keeps users constantly connected while guaranteeing production continuity with high-quality consistent voltage. This article examines the value of integrating DVR into distribution systems to reduce voltage sag and swell.

Design Of Battery Management For Lithium-Ion Battery

Kunal Dhomne Krunal Amnerkar Mayuri Rajurkar

The evolving global landscape for electrical distribution and use created a need area for energy storage systems, making them among the fastest growing electrical power system products. A key element in any energy storage system is the capability to monitor, control, and optimize performance of an individual or multiple battery modules in an energy storage system and the ability to control the disconnection of the module(s) from the system in the event of abnormal conditions. This management scheme is known as "battery management system (BMS)", which is one of the essential units in electrical equipment. The battery management system (BMS) plays an important role in ensuring the safe and efficient operation of lithium-ion batteries used in photovoltaic (PV) panels. This paper provides a comprehensive review of the literature related to the development of BMS for lithium-ion batteries used in PV panels. The paper discusses the challenges associated with the use of lithium-ion batteries in PV systems and highlights the importance of BMS in mitigating these challenges. The battery management system board is used to protect the battery from overcharge, overvoltage, under – voltage, temperature variation, and unbalanced conditions, and also monitor the state of charge of battery, state of health etc.

Detection Of Temporary Fault And Permanent Fault For 3 Phase Load'**Ashish Tandekar Pratiksha Sakhare Vaibhav Dhurve Ajay Wagdhare Harshal Bhopche**

Inductive, resistive, and other three-phase devices must be protected from a variety of failures in order to maintain the power system's reliability. This issue needs to be swiftly discovered and examined for solutions. The project's goal is to create a three-phase system with an automatic tripping mechanism. In the event of a momentary error, the project's output immediately resets in less than a second. While the permanent trip occurs in the event of a permanent fault situation. These mistakes could cause serious harm to the electricity system. This may result in power supply disruption and maybe bring various system-connected enterprises to a halt. These faults are categorized as LG (Line to Ground), LL (Line to Line), and 3L (Three lines) in a three phase power system. This system can solve the issue by automatically detecting the failure and cutting off the power supply, preventing extensive damage to the system's components. The supply is switched off accordingly for either a little period of time or a lengthy period of time depending on whether the system detects a transitory disturbance or a permanent problem. Additionally, this project's goal is to transmit data to mobile devices using the Global System for

Implementation of Solar Powered Autonomous Fire Fighting Robot**Priti Bhangre Dolly Gulhane Payal Chavhan Pradnya Ramteke Yamini Ishwarkar Chirag Katre Dipak Bawankule**

The demand Long overdue is the development of an autonomous fire extinguisher robot. People and property can be saved at a considerably greater rate with only little fire damage thanks to the development of such a device. As engineers, it was our job to create and test a prototype fire detection and suppression system. For uninterruptible power supply, we designed a solar-powered feature for this project. Wirelessly operated mobile robot. The robot is able to navigate a model building, locate a fire, and then put it out with the help of a water spray..

Study of safety rules and regulations for precautions of electrical hazards like fire and accident. Analyzing rules and case studies for preventing electrical hazards.**Abhishek Walkar Rishikesh meshram**

Electrical hazards such as fire and accidents can lead to significant loss of life and property if appropriate safety rules and regulations are not in place. This research paper aims to investigate the safety rules and regulations for the precautions of electrical hazards and to present a case study of a fatal electric shock in Nagpur. The study focuses on the regulations laid down by the Centre Electricity Authority (CEA) in 2010, which aim to ensure the safety of individuals and property against electrical hazards. The paper concludes that while regulations exist, they must be followed stringently, and regular inspections and training of personnel can significantly improve electrical safety.

To study safety rules and regulations for precautions of electrical hazard like fire and accident**Sakshi Ghoshikar Rupali Somkuwar Monika Dubey Swati Hiwrale**

Electrical hazards represent a significant risk to individuals and property. Electric shock and fire can occur for a variety of reasons, such as improper installation, use of substandard materials, lack of maintenance, and disregard for safety regulations. The Center Electricity Authority (CEA) of India has formulated several regulations to ensure the safety of individuals and property from electrical hazards. This document presents a study of the rules and regulations for preventive measures against electrical hazards such as fire and accident, including the CEA 2010 regulations. This document aims to create awareness among professionals, stakeholders and the general public about the importance of following these regulations to prevent electrical hazards .

Study Of Dynamic Voltage Restorer For Mitigation of Voltage Sag and Swell By Using PSCAD

Aditya Doble Prachi Moje Sujata Bawankar

The fast developments in power electronic technology have made it possible to mitigate voltage disturbances in power system. Among the voltage disturbances challenging the industry, the voltage sags are considered the most important problem to the sensitive loads. Dynamic voltage restorer (DVR) is a series connected power electronic based device that can quickly mitigate the voltage sags in the system and restore the load voltage to the prefault value. DVR is recognized to be the best effective solution to overcome this problem. The primary advantage of the DVR is keeping the users always on-line with high quality constant voltage maintaining the continuity of production. In this paper, the usefulness of including DVR in distribution system for the purpose of voltage sag and swell mitigation is described. The DVR presented here is based on the concept of dqo. The proposed control method is found very efficient for detecting and clearing any power quality disturbance in distribution systems. Results of simulation using PSCAD are demonstrated to prove the usefulness of this scheme.

Energy Storage System by using Flywheel

Sumitra Agrawal Girish Mehta Pratiksha Lohakare Komal Butley Shweta Yelade Pushpak Nimje Rohit Chandekar

In the industrial domain, various heavy machinery is driven by the electrical prime mover, known as the electric motor. The starting torque of the motor is so high that it can accelerate the heavy inertia of the machine. However, the torque of the motor culminates in time average at constant power but as the load of the machine increases the motor current increases and it generates more power to overcome the load torque. To tackle this situation more appropriately, generally deployed flywheel is a mechanical capacitor that stores the energy and delivers it to the machine component when the demand torque is high, but when the demand torque is low the stored energy of the flywheel i.e. rotational kinetic energy must be utilized for storing electric energy. The best example is the power press where in the idle stroke of the flywheel, it freely moves with rotational energy, it goes to waste which otherwise would utilize for the appropriate purpose.

Transmission Line Physical Inspection Robot Using Electrical Switch Gears and Embedded Logic

Kunal Urade Saurabh Panchal Sharwari Taiwade Pankaj Kumar

The real time methodology for inspection of Transmission line by using wireless robot is proposed in this project. As the technique is very much efficient for the inspection of transmission line. It is very risky to work with transmission line in normal as well as in Hazardous environment over the distance but by using the robot, inspection can be done properly and to overcome it. The robot works on overhead transmission line which is composed of wheels and arms. An embedded computer based programming is chosen as for the control system. Wireless camera is installed to obtain the video and the communication is achieved. As we compare with the oldest technology to search problems in transmission line and how it makes easy with robot. This project detects the inspection of transmission line using switch gear an embedded logic with the help of robot.

An overview on Detection of power grid synchronization failure on sensing frequency and voltage beyond acceptable range**Divyam Lanjewar Ritik Masram Sahil Petkar Akansha Bobade**

Power grid synchronization is a critical aspect of ensuring the stability and reliability of the electrical grid. The proper functioning of power grids relies on the synchronization of frequency and voltage across all connected components. If a component experiences a synchronization failure, it can result in widespread power outages, equipment damage, and other serious consequences. In this paper, we propose a method for detecting power grid synchronization failure based on the sensing of frequency and voltage beyond acceptable range. The method utilizes a real-time monitoring system to continuously measure frequency and voltage across the grid, and it triggers an alarm when values fall outside of acceptable ranges. We analyze the performance of the method using simulation results. On the bases of simulation result, implement it on hardware to provides a reliable and effective means for detecting power grid synchronization failure.

Underground Cable Fault Detection Using Gsm Alert Modul**Ritik Ankar Jayashree Bera Mayur Mangate Sahil Meshra**

Underground cable defect detection system employing GSM module is the topic of this article. The major goal of this Syetem is to put in place a system that can identify a defect in a transmission line that is both underground and on the surface. Short circuit faults and leakage faults are the two sorts of faults that this system is capable of detecting. It will also be able to precisely the place where the defect first appeared. With the aid of a differential operational amplifier and an AVR microcontroller, it monitors current fluctuations using a current sensing approach across all three phase lines. Once a defect has been found, the system will alert the appropriate person by SMS with notification alerts that include the fault kind and location and give beep indication utilizing a buzzer and the GSM module. The system reduces both time and cost in this way.

Design And Installation Of Electric Vehicle Charging System For Two Wheelers**Akshay Khandekar Prashant Atram Sakshi Vaidy Meetal Padmakar**

India, a developing nation, is rapidly embracing electric vehicle (EV) technologies and gradually phasing out fossil fuel-based vehicles as part of its efforts to combat climate change and increasing pollution in cities. In April 2017, the Government of India announced a plan to have all EVs on the market by 2030, and it has been following the Faster Adoption and Manufacturing of Electric Vehicles scheme to promote this transition. The electric charging infrastructure is a critical component of the electric mobility ecosystem, and it is crucial for the EV charging station market to keep up with the pace of EV adoption and growth. The limited range and speed of EVs are major concerns for customers, and the availability of charging stations and their network on the road is key to encouraging a shift from fossil fuel vehicles to EVs. As a result, the accessibility of a plug point for charging is an ongoing challenge faced by most EV manufacturers and customers.

Study And Simulation Of Various Power Quality Issues In Grid Integrated Solar System**Akansha Wanjari Sakshi Akare Sameer Manjrewar Sandesh Dolas**

With the quantity of the power there is a big need to give focus on the quality of power supplied to the In present scenario the power demand is more compared to power generation. To match this world power demand green energy-based power generation playing a vital role in electrical power system. Also, the photovoltaic (PV) system is majorly used in generation of electricity. The most prominent advantage of PV generation is it is the clean type of green energy, low in maintenance also easy to install. Along loads. There are many power quality issues like poor PF, voltage variations, harmonics and excessive reactive power etc. To diminish all power quality related issues various filters are used. STATCOM is the static synchronous compensator is a fast-acting device capable of providing or absorbing reactive power and thereby regulating the voltage. This compensator is proposed to improve power quality to keep different problems with the IEEE standards. The proposed model is simulated, studied, and analyzed in MATLAB/Simulink.

A Review On Regenerative Braking Method For Energy Saving**Supriya Dahat Tejas Lele Ashwin Meshram Sonu Lohi**

In recent years, the environmental effects concerns of the traditional car (ICE-Internal Combustion Engine) have led to the enhancement and growth of the electric vehicle (EV). The evolution of the regenerative braking system leads to increase overall vehicle performance (RBS) whenever driver applies the brake the energy which is completely lost in the form of kinetic energy due to friction loss between wheel of vehicle and road must be used and recycled, increasing the vehicle's efficiency. The reputed car companies such as BMW, Toyota, Lexus, Mercedes Benz, Land Rover, Volkswagen and General Motors have been using this technique for their EV's. This paper explores the applicability of the regenerative braking system and its applicability in various sectors to solve the existing problems

Microcontroller-Based Automatic THD Reduction For Non-Linear Load**Rajat Paunikar Suraj Gaygowad Amit Ghushay Krishnakant bhonde Shreyash Gedam
Pranit Padole Nikhil Honshette**

In a perfect world, the term harmonics used to describe power quality would refer to how pure the voltage and current waveforms are when they take the shape of sinusoidal. Power quality is veritably important to commercial and industrial power system designs. Ideally, the electrical supply should be a perfect sinusoidal waveform without any kind of distortion or disruption. If the current or voltage waveforms are distorted from its ideal form it'll be nominated as harmonic distortion. This harmonic distortion could affect because of numerous reasons. In present's world, high significance is given by the engineers to decide a system to reduce the harmonic distortion. While power system designs were simple and cautious in the past, harmonic distortion was undeniably lower. But, currently due to complex design is being used in the industry harmonic distortion has increased as well. This design explains the effects of Harmonics in the Power System and way to reduce the effects of Harmonics. Also, this design will illustrate how harmonic distortion, one of the most significant issues with power quality, generates a number of interruptions to the power system. It includes the Harmonic reduction ways to enhance the power quality

Microcontroller-Based Automatic Thd Reduction For Non-Linear Load**Suraj Gaygowad Krishnakant bhonde Shreyash Gedam Pranit Padole**

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Fast and Accurate Fault Detection in Transmission Line using IOT**Amol Hatwar Chetan Shende Pareshkumar Belurkar Vaishnavi Dambhare**

The electrical system is made up of numerous unique parts. One of these is the transmission system, which involves sending electricity from substations and substations to consumers along power lines. An accurate fault detection and classification is required to transmit power from generating station to various load centres reliably. This paper provides a review of the research being done for Internet of Things-based transmission linefault detection.

Development of Solar-Wind Based Hybrid Power System Using Supercapacitor**Anjali Parsawa Trupti Bukne Jayesh Dhalale**

In today's technology-driven world, electricity is one of the most important things in our daily lives. Because we all don't know that renewable energy sources run out immediately. So it is time for us to shift our focus from conventional energy sources to unconventional energy production. The hybrid system can be used both in industry and at home. In this paper we will generate electricity from unconventional and conventional sources. All renewable energy sources, such as solar energy, wind energy, are used to produce electricity in industry. This paper deals with the use of a solar-electric-wind system in the design of a hybrid energy system. Use of super capacitor can reduce the need to maintain electrical cables and we can manage the load demand at very high times. The paper shows that the renewable hybrid energy system using Supercapacitor. It creates a pollution-free environment.

Arduino Based Overload Protection of Induction Motor**Megha Titarmare Om Borikar Nidhi Fukatkar Bhairav Wandhare**

This paper conveys the idea on how to protect an induction motor using Arduino Uno Atmega 328 p. Induction motor is used for various residential, commercial and industrial purposes. The main objective of this project is to make an ease for any unskilled person operating loaded machineries. For this, we have used Arduino Uno hardware with realy module to trip the coil of the contactor, which is in the starter of motor. This consists of microcontroller 'Atmega 328 p' with clock frequency of 16 MHz. To prevent the motor from getting overloaded, an alarm is set when the motor gets loaded upto 90% of its load capacity. Also, the circuit will trip when machine gets overloaded. Further, use of Arduino module gives various advantages which have also been discussed.

Civil Engineering

Experimental Study Of Compressive Strength Of Concrete Using Ggbfs And Fly Ash

Ruchika Patil , Anand Mahajan , Gaurav Poyam , Tejaswini Ankar

The economy of the nation is significantly influenced by the construction industries. The most common material used in construction is concrete. The fundamental components of concrete are cement, sand, aggregate, and water. Cement is the primary binder in concrete. 10% to 15% of the total volume of concrete is made up of cement. Large amounts of CO₂ gas are released during cement production, which is very harmful to the environment. According to several studies conducted, waste products or by-products such as Fly Ash, GGBFS, silica fume, metakaolin, etc., can be employed as a cement substitute. In this study, the experimental evaluation of the compressive strength of concrete for M25 grade concrete using partial cement replacement with 10%, 15%, 20%, and 25% of GGBFS and Fly Ash is presented. For all blends, a W/C ratio of 0.5 is used. When the concrete has been cast and given a 7 and 28 day curing period, testing has been conducted. The possibility of using waste material in structural cones is the main topic of this study. Reduced cement use will result in less CO₂ being produced, which will help to preserve the environment and be cost-effective.

An Overview On Use Of Polypropylene Fiber In Paver Block

Purva Deshmukh, BhuPshan Wadibhasme, Abhishek Sharma

Paver blocks are now in great demand and have a wide range of applications like roads, footpaths, gardens, parking lots, etc. Due to their interlocking properties and ease of placement and construction, they are now used worldwide. The removing of the pavers is also very easy, so that can be done easily with low maintenance. To increase the strength of the pavers at low grade, research is carried out for the application of polypropylene fiber, and a review paver is presented to study the various aspects and research carried out on pavers. Polypropylene fiber in concrete paver block improves the properties of paver block. With the addition of polypropylene fiber, paver block maintenance is low and economical when compared with other pavement. The layers are mixed in proportions of 1:2:4 in both the top and bottom layers of the paver block. Polypropylene fibers are added in different percentages (0.1%, 0.2%, 0.3%, 0.4%, and 0.5%) in each mix proportion by weight. The compressive strength was tested at 7, 14, and 28 days.

Comparison And Analysis of Multi Storey Building with Or Without Shear Wall Using Staad Pro

Shruti A. Telrandhe , Dhanshree R. Padole , Devang Mansata3 , Ubaid Ahmad Khan

Due to the increasing frequency of earthquakes in the past, there has been a growing demand for earthquake-resistant buildings. One way to fulfil this demand is to incorporate shear walls into the building's structure to resist the lateral forces generated by wind, earthquakes, and other sources. A shear wall is a structural element specifically designed for multi-story buildings to counteract these lateral forces. In the present work, G+6 story building has been modelled using software STAAD PRO for Zone factor-0.1 in Nagpur, India. The analysis is by carried out of R.C.C building with different posting of shear wall on floor plan of by using STAAD PRO software. The present work presents a comprehensive analysis of reinforced concrete buildings with various configurations, considering factors such as location and thickness of shear walls, to investigate their efficacy in withstanding lateral forces. From the result we conclude that, the present of shear wall at corner location affects the seismic behaviour of building.

A Review On Dynamic Analysis Of Machine Foundations**Dhananjay Awachat, Aboli Dhawade, Saurabh Turak, Darshan Randive**

The crucial step of dynamic analysis of a machine foundation entails assessing how a foundation system will behave structurally under dynamic loads. The analysis is done to make sure that the foundation system can support the dynamic forces produced by the machine during operation without encountering too many vibrations, deformations, or failures. The dynamic analysis of a machine foundation entails a number of procedures, including the identification of the dynamic loads, the determination of the foundation system's natural frequencies and mode shapes, and the assessment of the system's response to the dynamic loads. The analysis is often carried out using numerical simulation techniques, such as the boundary element method (BEM) or finite element analysis (FEA). The outcomes of the dynamic analysis provide important details regarding the behaviour of the foundation system, such as the scope and distribution of internal stresses and strains, the amplitudes and frequency of displacements, and the likelihood of resonance or other dynamic effects. This data is used to optimise the foundation system's design, make sure it can support the machine's performance demands, and guard against failure or damage brought on by dynamic loads.

Experimental Investigation Of Interlocking Paver Block With The Use Of Polypropylene Fiber**Samrudhi Meshram, Rakshanda Bandeduche, Toshik Chachane**

The presently paver blocks is used in outdoor versatility application , and it is used in street roads and other construction places. Paver blocks has low cost maintenance and easily replaced with newer one at the time of breakage. For improving compressive strength and other parameter of paver block this study is necessary. In this study innovative addition of polypropylene fiber in paver block for determining the change in the compressive strength of paver block and reduce maintenance cost of paver block. Also , it's helpful to improve the life span of paver block. We have added polypropylene fiber in different percentages (0.25%, 0.5% & 0.75%) for obtaining the maximum strength of paver block and from our experimental study we have found that there has been increase in both compressive and flexural strength of paver block.

Computation Of Shape Factor Of Irregular Particles And Its Terminal Fall Velocity**Himanshu Shende ,Devanshi Bhatia**

This research paper focuses on computation of shape factor of irregular particles and its terminal fall velocity. The shape factor is an important parameter that determine the drag force acting on the particle during its fall and shape of the particle. It is widely use in fluid mechanics, atmospheric sciences, mineralogy. In this study numerical approach is developed to calculate irregular particles shape factor and terminal fall velocity. The method is based on the concept of three axial measurement of particle analysis. The results obtained from the numerical approach are compared with experimental data and a good result is observed.

Analysis and design of foot over bridge : A LITERATURE REVIEW**Shrutika Tiple, Gautam Wakpajan**

Where there is a requirement to produce separate passage for people to cross road or other physical obstruction foot bridges are provided. Foot over bridge is important to maintain the safety of passengers. Literature review yields limited studies on pedestrian behaviours in Indian condition over FOB. Such studies help in framing the design guidelines of FOB for different demands of pedestrian movements. The survey of literature reveals the studies on indian pedestrian behaviour across FOB. These studies support the development of fob demand. STAADpro software is used for the analysis and design of the project.

A REVIEW ON MACHINE FOUNDATION ANALYSIS

Shruti Marjive , Shraddha Meshram , Vidhi Maske

The dynamic analysis of a machine foundation is a crucial process that involves assessing the structural behavior of the foundation system when subjected to dynamic loads. This analysis is necessary to ensure that the foundation can effectively withstand the dynamic forces generated by the machine during operation, without encountering excessive vibrations, deformations, or failures. To conduct a dynamic analysis of a machine foundation, several procedures need to be followed. These include identifying the dynamic loads, determining the natural frequencies and mode shapes of the foundation system, and assessing the system's response to dynamic loads. Numerical simulation techniques like finite element analysis (FEA) or boundary element method (BEM) are often utilized in this analysis. The outcomes of the dynamic analysis provide valuable insights into the behavior of the foundation system, including the distribution and scope of internal stresses and strains, the frequency and amplitude of displacements, and the possibility of resonance or other dynamic effects. This information is used to optimize the foundation system's design, ensure its ability to support the machine's performance requirements, and safeguard against failure or damage resulting from dynamic loads.

To Study Characteristics Of Traffic Flow – A Case Study Of Nagpur City (South-East Zone)

Janhvi Patil, Monali Dhakate, Harsh Hingnekar , Harshal Chikte

Rapid growth of population has unceremoniously contributed to the increase in the intensity of traffic. Nagpur city consisting of nearly 3 million individual, which has direct impact on traffic intensity, led to increase in demand of traffic survey and analysis for both long term and short term period as the traffic overrides the normal limit. To meet the future traffic demand of city from the existing road infrastructure effective planning and management of traffic in the city is necessary. This effectiveness of the traffic management system has factors as safe and effectual movement of people, goods, and transportation. The study of this paper aims to identify reasons, and solutions for traffic congestion. This study was conducted to determine characteristics of traffic flow in the Nagpur city and determine the presence of congestion in the selected stretches of the city, using Degree of Saturation, Travel Time Ratio, etc.

Experimental Investigation Of Bagasses Ash Based On Cement Bricks

Vedant Itankar, Keshav Kamthe, Vrushabh Padole

Bricks are typically manufactured of clay in India and are typically produced small, unorganized traditional businesses. Clay use increase with the production of bricks, which result in top soil removal and land degradation. To reduce industrial waste, bagasse ash was used in this paper to partially replace fly ash. An attempt was made to reduce all of these environmental threats but, investigate the behavior of bricks made from sugarcane industrial waste trash. The use of such trash as raw material substitutes for recycling purposes could lead to the depletion of natural resources and the increase in expense of garbage disposal. In this project, we decided to use bricks stabilized with regular ordinary Portland cement (OPC) and sugarcane bagasse Ash (SBA). The bricks dimensions are 22.5cmX15cmX8.5cm. The bricks were identified as 30%, 40%, 100% treated and 100% untreated after which SBA was applied by weight of dry soil. Bricks after which they are dried for 12 days. Test for compressive strength, water absorption, dry density, among others.

Computation Of Shape Factor Of Irregular Particles And Its Terminal Fall Velocity**Ritik Gunarkar, Girish baghele, Shubham Rathod**

This research paper focuses on computation of irregular particles shape factor and terminal fall velocity. The shape factor is an important parameter that describes the shape of a particle and is widely used in fluid mechanics, atmospheric sciences, and environmental engineering. The terminal fall velocity is also a critical parameter that determines the settling velocity of a particle in a fluid medium. In this study, a numerical approach is developed to calculate irregular particles' shape factor and terminal fall velocity. The method is based on the concept of three axial measurement of particle analysis. The results obtained from the numerical approach are compared with experimental data, and a good agreement is observed.

Experimental investigation of Bricks Using Bagasse Ash Replacement by Fly Ash**Aditi khadatkar, Sneha Sukhdev, Rudresh Raut**

Use of agricultural and industrial waste residue in the sector. In sugarcane bagasse ash is an ash which is generated from burning of sugarcane bagasse. Therefore, development of new technologies to recycle & convert waste materials into reusable material is an important for the protection of environment & sustainable development of the society. The current experimental study explores the use of bagasse ash or sugarcane sludge as a partial replacement for fly ash in bricks. With the size of bricks (225 mm X150 mm X85 mm) & tested with different proportion of 0%, 30%, 40% & 100% replacing the fly ash in the bricks. These bricks underwent testing in several brick. Tested in ASTM as per the Indian standard.

Experimental Investigation of New Substitute Brick for Brick Bat Coba**Yogita Harinkhede, Vipul Bhujade, Sagar Vaidya, Nehal Salame**

The Primary Objective Of this Paper is to compare the physical characteristics of autoclaved lightweight concrete blocks and standard strong clay bricks, including their densities, water absorption rates and compression strengths. The most of time, an autoclaved aerated concrete block is more durable than the typical clay brick. The building business uses cement and brick largely. The most common exterior wall material used in building construction is red burnt brick. And more global markets. We compared the AAC block and burnt clay brick used in building construction here using a standard testing method, which will be tabulated before conclusion are made.

Assessment of Physiochemical parameters for Groundwater resources**Vaibhav Jawake, Shruti Nikhare, Mrunal Gajbhiye, Sanskruti chikhale**

Drinking water is very important in daily life. Assessment of groundwater to check quality of groundwater is important. The study was Groundwater to check the type of water in particular region whether it is suitable for drinking or not. The study was carried out in form of surface and subsurface also geological, metrological are the way to study about water and analysis of the water. For drinking water parameters the water quality guidelines provide limit value various physico-chemical parameters were determined for the collected samples such as pH, EC, Turbidity,. Total 16 groundwater samples were collected during pre and post-monsoon seasons of 2022 from each villages there are 2 samples are to be collected one is domestic groundwater it may be bore well or well and other one is agriculture ground water at different location. These samples were analyzed to check the ground water is suitable for drinking purpose or for irrigation purpose.

Prediction of coefficient of discharge for oblique sharp crested weir using ANN model**Vidhi Umale , Shruti Rohankar**

The application of artificial neural networks for solving complex civil engineering problems is of huge importance. This paper presents some of the positive aspects of the neural network's model that are used for the determination of the coefficient of discharge of oblique sharp crested weir. Sharp crested weirs are used to measure flow rate and control upstream water surface in irrigation canals and laboratory flumes. The main advantages of such weirs are ease of construction and capability of measuring a wide range of flows with sufficient accuracy. ANN models have been developed to predict the discharge coefficients of oblique sharp-crested weirs for free flow cases using Borgheiet al.'s experimental data.

A Study on Maintenance and Rehabilitation of Residential Structure**Shreyansh Hadke , Kartik Shahu , Payal Dekate**

Civil engineering not only deals with the construction of various structures but also works for their maintenance and rehabilitation. The current era requires efficient and sustainable methods for any job and given that concrete is material that is heavily relied upon at the present time in construction, therefore it's sustainability through the rehabilitation of building is a must and very important. Generally, the minor defects in structures such as cracks and leakages are removed with the help of various repair techniques. However, if the defects extend to a considerable damage, rehabilitation is necessary. Therefore, this paper uses the descriptive methodology to review the latest rehabilitation and repairing techniques used in the treatment of residential structure including repointing, grouting, reinforced injection, polymeric materials permitted by fibers and reinforcement of concrete structures, overlays, jacketing, base isolation and stitching. The researcher concluded that these techniques are effective, but each has its determinants of use that must be taken into account before applying them.

**CARBON SEQUESTRATION ASSESSMENT, a CASE STUDY of HEARTFULNESS
CAMPUS, YERLA, NAGPUR****Hitesh Chauvan, Dipali Hajare, Nageshwar Deshpande, Rushikesh Ugemuge**

At the national level, the management impact on the capacity for carbon sequestration of various land use types is least understood. An important component of a comprehensive plan for managing carbon emissions to lessen the rising CO₂ emissions into the atmosphere is carbon sequestration, a burgeoning area of research. According to projections, terrestrial ecosystems might store a large amount of carbon during the next 50 years. There is growing interest in scientific developments that might be used to improve this potential carbon sequestration in soils. Carbon sequestration in terrestrial ecosystems can be defined as the net removal of CO₂ from the atmosphere into long-lived store of carbon. This can include living biomass found above ground (such as trees), biomass-derived wood products with a long usable life (such as lumber), living biomass found in soils (such as roots and microbes), or recalcitrant organic and inorganic carbon in deeper underground habitats. Planting more trees has the potential to boost the ability of forests to store carbon. Our study found that the establishment of PNV (protected natural vegetation) is the best practice of restoration projects because it provides a cost-effective mechanism that prevents animals from grazing freely and human interference. We calculated DBH of 190 trees within the 15 acres of campus area within 4 weeks, where we estimated total campus carbon capture to be 600.24kg. We can also estimate the carbon sequestration of PNV's and find out their carbon credits values, this tradable certificate are permits that allow the owner to emit a certain amount of carbon dioxide or other greenhouse gases.

Comparison And Analysis of Multi Storey Building with Or Without Shear Wall Using Staad Pro

Shruti A. Telrandhe, Dhanshree R. Padole, Devang Mansata, Ubaid Ahmad Khan

Due to the increasing frequency of earthquakes in the past, there has been a growing demand for earthquake-resistant buildings. One way to fulfil this demand is to incorporate shear walls into the building's structure to resist the lateral forces generated by wind, earthquakes, and other sources. A shear wall is a structural element specifically designed for multi-story buildings to counteract these lateral forces. These walls are typically made of reinforced concrete, masonry, or steel and are placed at strategic locations throughout the building to provide stability and prevent structural failure during a seismic event. In the present work, G+6 story building has been modelled using software STAAD PRO for Zone factor-0.1 in Nagpur, India. The analysis is by carried out of R.C.C building with different posting of shear wall on floor plan of by using STAAD PRO software. The present work presents a comprehensive analysis of reinforced concrete buildings with various configurations, considering factors such as location and thickness of shear walls, to investigate their efficacy in withstanding lateral forces. The study delves into the behaviour of different building components and compares their performance under varying conditions, providing insights into the most effective design strategies for constructing safe and durable structures. From the result we conclude that, the present of shear wall at corner location affects the seismic behaviour of building.

STUDY OF 50KLD MBBR BASED SEWAGE TREATMENT FOR COLLEGE HOSTEL, NAGPUR

Himani Kimmatkar, Prajakta Shende, Snehaly Raut, Unnati Thakare

Waste water is the process to make wastewater reusable. In educational campus, where the demand of water is huge, it is highly feasible to adopt a system of wastewater recycling for purpose like toilet flushing, gardening ,etc. And for maintenance of landscape. Among the available technologies for waste water treatment MBBR based sewage treatment is most suitable. Biofilm wastewater treatment technologies are very strong, especially when compared to conventional technologies like activated sludge.

Assessment of Physiochemical parameters for Groundwater resources

Vaibhav Jawake, Shruti Nikhare , Mrunal Gajbhiye, Sanskruti chikhale

Drinking water is very important in daily life. Assessment of groundwater to check quality of groundwater is important. The study was Groundwater to check the type of water in particular region whether it is suitable for drinking or not. The study was carried out in form of surface and subsurface also geological, metrological are the way to study about water and analysis of the water. For drinking water parameters the water quality guidelines provide limit value various physico-chemical parameters were determined for the collected samples such as pH, EC, Turbidity, TDS, The present study was undertaken to evaluate the groundwater quality of the villages in the vicinity of wardha area, Nagpur district, Maharashtra. Total 16 groundwater samples were collected during pre and post-monsoon seasons of 2022 from each villages there are 2 samples are to be collected one is domestic groundwater it may be bore well or well and other one is agriculture ground water at different location. These samples were analyzed to check the ground water is suitable for drinking purpose or for irrigation purpose.

ON SMART CIVIL ENGINEERING MATERIAL SELF - HEALING CONCRETE STUDY

Mayank Ailani , Lokesh Jadhav

Due to its potential to increase the sturdiness and lifetime of concrete structures, self-healing concrete is a relatively new idea that has attracted growing attention in recent years. The many self-healing mechanisms, healing agents, and experimental techniques for assessing self-healing are all covered in this comprehensive analysis of the state-of-the-art in self-healing concrete. The obstacles involved in the development and deployment of this technology are also discussed, as well as the practical uses of self-healing concrete in various civil engineering constructions. The report concludes by outlining some potential future paths of inquiry and advancement for self-healing concrete.

Design and Analysis of ROB - A Review

Ayush V. Lakhpatri , Ankita Pandhre , Gauravi Bandgar

A Road Over Bridge (ROB) is a type of bridge that allows road traffic to pass over an obstacle, such as a railway line, waterway, or other obstruction. The design of a ROB requires careful consideration of many factors, including the weight of the structure, the loads it will be subjected to, and the soil conditions at the site. Structural engineers use advanced software programs, such as STAAD Pro, to model and analyze the behavior of ROBs under various loading conditions and optimize their design. This abstract provides a brief overview of the basic principles of ROB design and the use of STAAD Pro in the design process. The results of the software are verified against the manual methods. The parametric study is conducted on the parameters such as Bending Moments, & Shear Forces.

EXPERIMENTAL STUDY ON THE PROPERTIES OF CONCRETE WITH COMPLETE REPLACEMENT OF SAND BY MANUFACTURED SAND

Ansh Kotkar , Vishal Chirwatkar , Pipal Bork

In general concrete is a combination of cement, fine and coarse aggregate. These days, natural river sand is difficult to acquire and extraction of sand from river has represented an awesome threat to environment. The government has also placed restrictions on the removal of sand from riverbeds. Due to a lack of natural river sand and rising demand, research is being done to find an alternative fine aggregate. This search shifts the focus of the research to the efficient use of manufactured sand (MS) for commercial purposes. By examining compressive strength.

LITREATURE REVIEW OF FREQUENCY ANALYSIS OF RAINFALL DATA

Om Kharkar , Nikunj Pawar , Vedanti Yeole , Nikhil Meshram

Rainfall data analysis is an important area of study for meteorologists, hydrologists, and climatologists. Rainfall is a critical factor in predicting weather events such as storms. Accurate analysis of rainfall data is essential for predicting these events and mitigating their potential impact. Probability distribution functions such as normal, log normal, Gumble, and log Pearson are commonly used to analyze rainfall data. The normal distribution function assumes that rainfall data is normally distributed, with a symmetrical bell-shaped curve. The log normal distribution function assumes that rainfall data is positively skewed and that the logarithm of the data is normally distributed. The Gumble distribution function assumes that extreme rainfall events are independent and identically distributed, making it useful for predicting rare, severe weather events. Overall, the selection of the most appropriate probability distribution function for analyzing rainfall data depends on the specific characteristics of the data set. However, the use of these methods is essential for accurate rainfall analysis and predicting weather events.

Groundwater Quality Analysis of various Physico-chemical Parameter Tanmay Gajbhe , Abhijeet Thawari , Nischay Moundekar , Mukta Gajabhe

One of the most vital substances that has a significant impact on life is water. It is the most crucial factor in controlling climate and sculpting the land. Water quality is often defined in terms of its physicochemical and biological characteristics. Rapid industrialisation and excessive agricultural use of chemical pesticides and fertilisers are depleting aquatic life and reducing water quality, respectively. This is now one of the major issues. People today get water-borne illnesses as a result of using polluted water. Water is one of the most important elements that significantly affects life. It is the most important element in regulating climate and shaping the land. A common way to describe water quality is in terms of its physicochemical and biological properties. Aquatic life is being rapidly depleted and water quality is declining as a result of both rapid industrialisation and excessive agricultural usage of chemical pesticides and fertilisers. One of the current big problems is this. Using contaminated water nowadays exposes people to water-borne ailments.

A Study on Maintenance and Rehabilitation of Residential Structure Shreyansh Hadke , Kartik Shahu , Payal Dekate

Civil engineering not only deals with the construction of various structures but also works for their maintenance and rehabilitation. The current era requires efficient and sustainable methods for any job and given that concrete is material that is heavily relied upon at the present time in construction, therefore it's sustainability through the rehabilitation of building is a must and very important. Generally, the minor defects in structures such as cracks and leakages are removed with the help of various repair techniques. However, if the defects extend to a considerable damage, rehabilitation is necessary. Therefore, this paper uses the descriptive methodology to review the latest rehabilitation and repairing techniques used in the treatment of residential structure including repointing, grouting, reinforced injection, polymeric materials permitted by fibers and reinforcement of concrete structures, overlays, jacketing, base isolation and stitching. The researcher concluded that these techniques are effective, but each has its determinants of use that must be taken into account before applying them.

SUSTAINABLE PAVEMENT SOLUTIONS: A COMPREHENSIVE REVIEW OF RECENT STUDIES

Damini Thombre, Payal Gedekar, Girish Kapgate, Aditya Kolekar

This literature review paper examines various research studies on sustainable pavement materials, with a focus on permeable pavements as an environmentally friendly solution for managing stormwater runoff in urban areas. The paper discusses seven different research papers that have investigated different types of sustainable pavement materials, including crushed ceramic, seashell concrete, pervious concrete pavers, and permeable interlocking concrete pavement. The studies have examined properties, mechanical characteristics, design and hydrological aspects, and clogging resistance of these sustainable pavement materials. The review also provides an overview of different design and construction methods of permeable pavements, recent advancements in permeable pavement technologies, such as clogging resistant permeable pavements, sustainable materials for permeable pavements, and the standardization of permeable pavement design. The findings suggest that sustainable pavement materials have the potential to reduce environmental impacts, improve drainage, and reduce the urban heat island effect. However, further research is needed to improve the durability and longterm performance of these materials. Overall, the literature review highlights the importance of sustainable pavement materials and permeable pavements for sustainable urban development.

A REVIEW ON MACHINE FOUNDATIONS

Rudraprasad Chattrjee , Nikunj Bhelave

Dynamic analysis of a machine foundation may also involve assessing the impact of soil-structure interaction, which can significantly affect the foundation's response to dynamic loads. Soil-structure interaction refers to the interaction between the foundation system and the surrounding soil, which can influence the transfer of loads and the propagation of vibrations. Therefore, it is essential to consider the soil properties and conditions when performing dynamic analysis. Another critical aspect of dynamic analysis is the consideration of various machine operating conditions. Different operating conditions, such as start-up, shut-down, or transient loads, can generate different dynamic forces, and thus the foundation's response may vary depending on the operating state of the machine. Therefore, it is important to evaluate the foundation system's response to different operating conditions and ensure that it can perform adequately under each one. Overall, dynamic analysis plays a crucial role in the design and optimization of machine foundations. By assessing the foundation system's behavior under dynamic loads, engineers can identify potential issues, optimize the design for improved performance, and ensure the safe and reliable operation of the machinery.

ESTIMATION OF FIVE STOREY COMMERCIAL BUILDING

Samiksha Hadekar , Sanjana Hatwar , Prajwal Bind , Sarvesh Kale

Detailed estimation procedures for multi-story building construction (APARTMENT BUILDING), covering cost estimating, hard bidding, negotiating prices, traditional methods, management contracting, construction management at risk, and design and design-build bridging. A multi-story structure is one that is used for business purposes. As part of our project, we estimate and cost a multi-story apartment complex to meet all specifications while staying inside the allotted budget of customers. Depending on considerations like site conditions, customer budget, needs for material availability, and other, the estimator may change some specifications in the construction design. As part of our project, we estimate and cost the (G+5) apartment block using a step-by-step process, computations, and quantity surveying. Before a building project begins, it is necessary to estimate and cost it. This procedure is known as estimation and costing for all engineering activities. If it is determined that the expected cost will exceed the allocated funding, then efforts are made to cut costs by altering the specification or reducing the amount of work. This document estimates and costs the construction of a five-story residential building in Nagpur. The costs included in the estimate given for the entire project include labour costs, material costs, transport costs, labour costs, scaffolding costs, tool and paint costs, establishment and supervision costs, and contractor profits that are fair, among other costs. In this study, a five-story estimate.

Design & Analysis of G + 5 Residential Building With Comparison of Conventional Slab and Flat Slab using ETAB

Akash S. Rathod , Anooj M. Motghare , Ishita S. Kamble , Dnyaneshwari S. Thute

In traditional method the slab is supported by a beam with small thickness of slab and large beam depth. The weight is transferred from beams to columns. The flat slab is method in which the slab is resting directly on columns. The flat slab allows architects to provide partition wall wherever it is needed. To support heavy loads and thickness of slab near the support with the column is increased and these are called drops, or columns are provided with enlarged heads are called column heads. As the beam is not there in flat slab it gives the plain ceiling consequently giving better architectural appearance. The flat slab building is used these days because these structures offer many benefits which a normal slab structure does not provide. The objectives of this project is to compare multistorey residential building having flat slab with conventional slab. The design and analysis is done by using ETABS software. This present work provides reasonable information about the stability of flat slab.

MODERN ASPECTS IN NON DESTRUCTIVE TESTING**Gunjan Waghmare , Vaniket Madavi ,Arnav Londhe**

In order to characterize defects in engineering materials and composites, this paper presents the most recent developments and research on non-destructive testing (NDT) techniques. The capabilities of NDT applications, including visual testing (VT), ultrasonic testing (UT), thermography, radio graphic testing (RT), electromagnetic testing (ET), acoustic emission testing (AE), and shearography testing, are reviewed as well as the advantages and disadvantages of each technique.. The use of non-destructive testing is common in power plants, aerospace, storage tank inspection, pipe and tube inspection, analysis of composite flaws, and the nuclear sector.

**PREDICTION OF COEFFICIENT OF DISCHARGE FOR OBLIQUE SHARP CRESTED
WEIR USING ANN MODEL****Vidhi Umale , Shruti Rohankar**

The application of artificial neural networks for solving complex civil engineering problems is of huge importance. This paper presents some of the positive aspects of the neural network's model that are used for the determination of the coefficient of discharge of oblique sharp crested weir. Sharp crested weirs are used to measure flow rate and control upstream water surface in irrigation canals and laboratory flumes. The main advantages of such weirs are ease of construction and capability of measuring a wide range of flows with sufficient accuracy. ANN models have been developed to predict the discharge coefficients of oblique sharp-crested weirs for free flow cases using Borgheiet al.'s experimental data.

DESIGN OF CABLE SUSPENSION PEDESTRIAL BRIDGE**Dimpal Khandade , Mokshada Baraskar , Jeeshan Sheikh**

Suspension bridges support their roadway with overhanging cables. Modern suspension bridges can cross greater lengths than any other type of bridge because they are lightweight, aesthetically beautiful, and strong. They are also some of the most expensive to build. Although suspension bridges can be built to be sturdy enough to accommodate goods trains, they were almost all created with vehicular.

**Turbidity Removal In Water By Jet Flocculation Using Partial Replacement Of Chemical
Coagulants With Natural Coagulants****Mehul Raikwar , Saurabh tupate , Vaibhav Dohe**

A coagulant is a natural or chemical substance that is introduced to first emulsion to first destabilize, agglomerate, and bind them together to enhance their capacity to settle. The focus of the current review is on the comparison between natural and chemical coagulants to remove turbidity from water. It also focuses on the study of different jet diameter, its positions as well as different types of natural and chemical coagulants.

**EXPERIMENTAL STUDIES ON PARTIAL REPLACEMENT OF NATURAL SAND
WITH MANUFACTURED SAND****Nikit Gaikwad, Rasheed Mehmood, Rohini Waghaye**

Natural or River sand are weathered particles from rocks which are of various shapes and sizes depending upon the weathering action of rivers. In the present scenario, natural sand with required properties is not easily/ locally available. In most of the situations, The natural sand is being transported to the construction site from a distance. The cost of building will go up if river sand needs to be transported in this manner from a distance. These natural river sands are likewise becoming harder to find for a variety of reasons. Finding a different material that can partially or completely replace natural river sand is therefore crucial. Stone quarries can be found in great numbers and are widely dispersed throughout Tamil Nadu. They are a reliable supplier of both manufactured fine aggregate and coarse aggregate. The stockpiles of quarry fines produced by the crushers must be put to use. Consequently, in order to utilize this Manufactured sand in the building sector, It is necessary to conduct a thorough investigation on the use of Natural River sand in place of ordinary construction sand. This study presents experimental studies on the evaluation of the characteristics of M-sand acquired from various places (sources).by replacing natural sand from two sources. This study also includes experimental tests on the characteristics of freshly-poured and cured concrete created with the developed mix proportions.

Mechanical Engineering

Extraction of Activated Carbon, Bio oil and Syn gas from Coconut Shells –A Review

Amit Goswami Mansi Balki Hrishikesh Thate Abhishek Lokhande

Due to cheap & ready availability of materials, increase in energy cost, as well as increased pressure on the environment from the use of fossil fuels, there has been a rise in interest in the market for the extraction of value-added products from agricultural waste, which has drawn many researchers to develop a system. One method that will be used to efficiently use agricultural waste as a source of energy generation is thermal pyrolysis. A variety of materials are employed in the production of activated carbon, with agricultural wastes such as coconut, pistachio, sawdust, walnut, and almond shells being some of the more popular ones. The main goal is to obtain bio oil, syngas, and activated carbon from coconut shells. Through the application of technology, coconut shell can be transformed into goods of high economic value. The most significant microporous adsorbent is activated carbon, a non-graphite form of carbon that may be made from any carbonaceous material and has a strong affinity for a wide range of dissolved organics. The coconut shells are used to extract other high-value goods including Bio oil and Syngas. The strategy is to put up a micro unit that will, in a batch manufacturing process, extract bio oil, syngas, and activated carbon from dried coconut shells. The various processes are designed and developed in the current study for the extraction of activated carbon, bio oil, and syngas from coconut shells. This procedure involves the heat pyrolysis, also known as carbonization and activation. The quality of the products is examined through experiments to determine how different process variables, such as pyrolysis temperature and activation time, affect them.

DESIGN AND FABRICATION OF IMPRINT MACHINE

Ritesh Pandhare Shantanu Sawaithul Yash Kawale Sandesh Nagare

This Research Paper aimed at automating the process of marking serial numbers or identification codes on metal, wood, plastic components. This Machine accurately punches numbers onto metal, wood, plastic parts with varying sizes and thicknesses. The machine's design includes a robust frame, a pneumatic system, and a control system that allows for precise control of the number punching process. The punching mechanism consists of a series of hardened steel punches that can be easily replaced and adjusted to accommodate different numbers and character sizes. The control system allows operators to input the desired serial number or identification code, control the punching force, and regulate the individual spacing. The machine also includes safety to prevent injury to operators and damage to the metal parts. Overall, the design and fabrication of an imprint machine for metal parts will provide an innovative solution for manufacturers looking to streamline their product identification process.

Frame Design & Analysis Of Electric Formula One Car : A REVIEW

Arpit Umare Kunal Bhongade Krutika Ambade

The aim is to design and analysis of a chassis. A chassis design involves selecting optimum measures of parts and iterating it to achieve the objectives assumed. Every part of chassis is related to each other; it is necessary to study effects to get optimum design. Mild steel is a ferrous metal made from iron and carbon. Various formulas were used and we have to satisfy all the objectives in the beginning.

Design and Synthesis of Eight-Legged Spider Robot

Himanshu Lanjewar Tejas Ghoradkar Dnyaneshwar Lataye Deep Mate Krunal Shahu

Less than half the world's landmass is accessible to existing wheeled and tracked vehicles. But people and animals using their legs can go almost anywhere. Our aim is to develop a new type of rough-terrain robots that capture the mobility, autonomy and speed of living creatures. Such robots will travel in outdoor terrain that is too steep, rutted, rocky, wet, muddy, and snowy for conventional wheeled vehicles. They will travel in cities as well as in our homes, doing chores and providing care, where steps, stairways and household clutter limit the utility of wheeled vehicles. Robots meeting these goals will have various sensors, sophisticated computing and power systems, advanced actuators and dynamic controls.

It is marvellous that creatures can go over a rough terrain at speeds which are remarkably higher than practically possible with wheeled vehicles. Indeed, even an individual, by getting down on each of the eight legs if necessary, can travel or climb over terrain which is unreachable for a wheeled or followed vehicle. It is therefore of immense eagerness to realize what machines for land locomotion can do if they are intended to imitate nature. Legged robots can be used for space missions on extraterrestrial planets and in risky places, for example, within an atomic reactor, giving independent legged robots a great potential. less power consumption and weight are further advantages of walking robots, so it is important to use the minimum number of actuators. In this context, the objective of this project is to learn and design a prototype of the Theo-Jansen eight leg strolling robot. The goal is to develop a new mechanical automated walker utilizing eight bar link mechanism. The essential Theo Jansen device is a 13 bar framework that strolls when a crank is rotated. So, utilizing linkages we attempted to imitate nature and put together certain strolling robot which will suite off-road.

Model Development Of Autonomous Vehicle By Deep Learning Technology

Lokesh W.Yerane Ankush N.Besare Ritik D.Sonkusare Adarsh Selukar Sahil Agey

Scale-Based Self-Driving Vehicle Using Deep Learning The issue of deep learning-based self-driving algorithms is examined in this research. Self-driving vehicles are one of the most significant applications of artificial intelligence, hence this is a hot issue. The majority of current research focuses on deep learning, which can be used to directly learn "end-to-end" self-driving control from raw sensory input, however this approach only maps between driving and visuals. We prefer to train a self-driving automobile using deep reinforcement learning in a Unity-created virtual simulation environment before moving it into the actual world. Deep reinforcement learning enables the computer to make decisions while driving much like a person would. For the purpose of assessing the performance, simulations were run in the Unity virtual environment. Finally, self-driving is realised after a successful model to real world transition. In this study, we suggest reducing the picture resolution of an autonomous vehicle and comparing performance using pre-established measures. Our model demonstrates an increase in the neural models' response time, which enhances safety and causes the automobile to go at faster speeds. An RL agent must learn to steer a Donkey vehicle around three small tracks using just monocular image observations and the car's speed in the basic and repeatable experimental setup used in L2D. Disengagements, which happen when the agent drives off the course, force it to retrain its driving skills. We show and open-source our training workflow, which enables the challenge of autonomous driving with a Donkey vehicle to be easily applied to any current RL algorithm. On the suggested L2D benchmark, we evaluate imitation learning, cutting-edge model-free, and model-based algorithms. Our findings demonstrate that RL algorithms currently in use can pick up car-driving skills from scratch in less than five minutes of interaction. We show that RL algorithms can drive even quicker than imitation learning and a human operator by learning from sparse and noisy disengagement.

Development Of Inventory Management System In Production Industry**Harshal Umredkar Shruti Vaidya Amol Borkar**

“Inventory Management System in Production” is a desktop based system developed for production industries. The main aim of this project is developing desktop application for the inventory and sales department of the company and can also be supported by database in the management cell. Inventory and Sales department plays a major role in every organization and hence maintaining a well trusted record helps an organization to maintain and study its growth easily. Most of the work till now is carried out manually i.e. through the pen and paper method. Therefore, the main goal of this project is to manage things with ease and automation. This desktop application will help employees, workers as well as the sales department. This application system can be accessed throughout the organization with proper login. The project system can be used as a tool for sales and profit department in an organization to collect and manage data of the products sold so far and furthermore, to calculate the profit made in a particular period of time. Employees can view either the product is in shortage criteria based on their popup alert flashing on the to be purchased list. They can access sale history, that can be helpful for maintaining the inventory.

Design and Fabrication of Stair climbing trolley**Amar Gajbhiye Adarsh Dudhankar Abhishek Phule**

An object designed to convey large or bulky items easily up and down stairs is a stairclimbing trolley, which is the topic of this research article. With its unique wheels and frame, this cutting-edge piece of equipment can easily climb up and down stairs, minimizing the need for human lifting and carrying. The trolley is useful for carrying large objects like groceries, furniture, and other goods. Its distinctive appearance makes it a useful tool for people who live in multilevel houses or work in buildings without lifts
people who live in multi-level houses or work in buildings without lifts, its distinctive appearance makes it a useful tool. Stair climbing trolleys are a great option for anyone who transfers large objects since they can help large objects since they can help to lessen the danger of damage and strain on the body.

Design, Development And Fabrication Of Model Of Wave Energy To Electrical Energy Converter**Jayesh Janbandhu Ratan Meshram Abhishek Kuhikar Harshada Bhadke**

In this study, a model of a converter for converting wave energy into electrical energy is designed, developed, and made. The model comprises of a linear generator that is connected to a float. In order to operate the linear generator and produce power, the float rises and falls with the waves. The electricity produced is rectified and then stored in a battery. The model is created and built to be inexpensive and simply made from materials that are typically found in households. The model's performance was evaluated under various wave situations, and the findings demonstrate that the model is capable of producing electricity from wave energy effectively. The created model can serve as a prototype for the creation of a full-scale wave energy converter in the future.

Design Of Plate Heat Exchanger For Heat Treatment Industry**Yash A. Thakre Ketan D. Pande Shantanu V. Pantawane**

This study discusses the design of plate type heat exchangers (PHE). Conventional heat exchangers have many drawbacks, including difficult maintenance, high cost, and increased area usage. In contrast, plate heat exchangers have a number of benefits over traditional heat exchangers. Because the liquid spreads across the plate, PHE has a bigger surface area. The study discusses and explains the design of the plate type heat exchanger, plate material, chevron angle, and gasket material since the plate allows for faster heat transmission.

Design And Experimentation Of Parabolic Solar Water Heater With Inbuilt Automatic Solar Tracking System

Prathmesh R. Behere Prachi M. Gajbhiye Saurabh B. Kewat Harsh M. Dharpure

This project focuses on developing novel technique for a solar water heating system. The novel solar system comprises a parabolic dish concentrator, conical absorber and water heater. In this system, the conical absorber tube directly absorbs solar radiation from the sun and the parabolic dish concentrator reflects the solar radiations towards the conical absorber tube from all directions, therefore both radiations would significantly improve the thermal collector efficiency. The working fluid water is stored at the bottom of the absorber tubes. The absorber tubes get heated and increases the temperature of the working fluid inside of the absorber tube and causes the working fluid to partially evaporate. The partially vaporized working fluid moves in the upward direction due to buoyancy effect and enters the heat exchanger. When fresh water passes through the heat exchanger, temperature of the vapour decreases through heat exchanger. This leads to condensation of the vapour and forms liquid phase. The working fluid returns to the bottom of the collector absorber tube by gravity. Hence, this will continue as a cyclic process inside the system. The proposed investigation shows an improvement of collector efficiency, enhanced heat transfer and a quality water heating system.

Optimization Of Pulverizer Machine

Vaibhav Chandekar Vedant Nageshwar Rohit Dongarwar Omeshree Jamaiwar Tushar Lokhande

The purpose of this experiment is to enhance the efficiency of a corn cob-grinding machine. Four distinct blade diameters, 350mm, 300mm, 200mm, and 150mm, with a maximum speed of 2880, are the subject of the investigation. In order to achieve the best grinding efficiency and yield, the experiment aims to identify the ideal blade diameter and speed combination. In this study, experimental data will be analysed using statistical techniques to identify the key variables influencing the performance of the machine. The experiment's findings can be applied to enhance the pulverizer machine's functionality and design for grinding maize cobs.

Using a sun-drying process over the course of three days with seven hours of exposure to sunshine each day, the aim of this experiment is to determine the moisture content of corn cobs. The amount of water lost by evaporation can be determined and used to estimate the moisture content through comparison of the beginning and end weights of the corn cobs. The agriculture and food processing industries frequently employ this technique to guarantee that goods are properly dried and kept for storage and shipment.

Sun-dried corn cobs have been pulverised as part of the experiment in the pulverizer machine. The goal of the study is to determine the blade speed and diameter that will grind corn cobs most effectively. The findings of this study can be applied to enhance the functionality and design of corn cob pulverizer machines.

Experimental Optimization Of Corn Shelling Machine

Nikita Raisadhar Sahil Deogade Adarsh Dhanvijay Rahul Dhurve

Farmers in developing countries, such as India, cultivate maize on a small-scale. The cob is sold as is, while the kernels cost twice as much. If farmers can shell the kernels themselves and sell them on the market, they can make more money. The issue is that there is a shortage of affordable, manual, and efficient maize Sheller machines in India. Maize has been around since 1250 BC and was spread around the Americas. Over time, dense populations in the region formed a trade network based on surplus and the varieties of maize.

Computer & Information Technology

Online Voting System

Mansi Rasekar Khushboo Uikey Samradhynee Kapsikar Prerna Kamble Shubhangi Meshram

Secure Online Voting System Is An Interactive Voting System Application With Which Users Can Vote From Any Location Remotely Using Their Information Stored Prior In Database Securely. Online Voting System Involves Transmission Of Ballots And Votes Via Network. Security Is Maintained At Different Levels Like While Voting And At The Time Of Transmission Of Ballots Also. The Main Objective Of This Work Is To Develop An Interactive Voting System Application With Which Users Can Participate Using Their Information Stored Prior In Database While Creating The Voter Id And The Information Need To Be Updated At An Period Of Less Than Six Months For Perfect User Verification By The Independent Electoral Commission Of India (Ieci). In This System People Who Have Citizenship Of India And Whose Age Is Above 18 Years And Of Any Sex Can Give Their Vote Through Online Without Going To Any Physical Polling Station.

Automatic Plant Watering System App

Anjali Neware Niyati Harne , Ekta Sahare Vrushali Mate Snehal Lambade

Watering is both the most labourintensive and crucial practise in everyday agricultural or gardening operations. You want to be able to adjust the environment no matter what the weather is like, whether it's too hot and dry or too gloomy and damp how much water gets to your plants. Plants might be efficiently watered as needed using contemporary irrigation systems. However, two crucial factors must be taken into account while using this manual watering method: when and how much to water. We developed an autonomous plant watering system to replace manual tasks and simplify the job of gardeners. You may assist all of the plants in the garden or agricultural field to attain their maximum potential by installing an automatic plant watering system. An automated irrigation system have been developed using sensors technology with Arduino to efficiently utilize water for irrigation purpose. The system has soil moisture sensor inserted into the soil of the plants and a water level sensor placed in a water container from where water will be pumped to plants for irrigation. And to control the Arduino, we have made an application which will make it easier to track water level in plants

HireHub

Kamal Chandwani Yogendra Patle

In today's digital age, job seekers rely heavily on the internet to find job opportunities. However, many job seekers are not aware of the features and benefits offered by job search portals, leading to missed opportunities. This project aims to address this issue by examining the differences between job seekers and recruiters and applying various filters to meet the specific needs of each group. The implementation utilizes the WISDM standard to create a user-friendly job portal accessible on multiple devices. Additionally, the project includes an automatic email system to keep applicants informed of their application status. The use of Bootstrap ensures compatibility across various devices.

News WebApp

Alfiya Khan Shruti Chaurasiya Satyendra Mourya Yatharth Parulkar

This research paper presents the design and implementation of a news web app that provides users with a convenient and user-friendly way to access news articles from various sources across India. The app uses the WebSearch API to fetch the latest news articles, the Summarizer AI API to generate a summary of each article, and the Dictionary API to provide users with a useful tool for looking up the meanings of unfamiliar words. The app is designed to be responsive and easily accessible on both desktop and mobile devices, using ReactJS, Redux, and Tailwind CSS. The paper also discusses potential future developments, including personalization, social media integration, and advanced natural language processing technologies.

Weather Telegram Bot Using Python

Herik Seva Payoj Mandpe Piyush Thaware Praful Gajbhiye Prathmesh Bhoge

The SkyCastWeather Bot is a Weather Forecasting telegram Bot The weather forecasting Telegram bot is an automated program designed to provide accurate and up-to-date information about the weather conditions in a specific location. The bot is powered by sophisticated algorithms that analyze data from various sources, including satellite imagery, weather stations, and radar systems. Users can interact with the bot through the Telegram messaging platform, where they can input their location and receive real-time weather updates, including temperature, wind speed, humidity, and precipitation forecasts. The weather forecasting Telegram bot can be customized to meet the specific needs of different users, including farmers, pilots, sailors, and outdoor enthusiasts. The bot is a reliable and efficient way of staying informed about weather conditions and making informed decisions based on accurate information. Overall, the weather forecasting Telegram bot is an excellent tool for anyone who needs to stay informed about weather conditions in a particular location. With its accurate forecasts, real-time updates, and customizable features, it can help users make informed decisions based on accurate information.

HEALTH-CARE NARRATIVES

Samiksha suresh bokde Siddhi Dipak Pande Rushita Purushottam Likhar Nikita W Ambulkar

Information and communication technologies (ICT) are being widely used in healthcare management systems. Study of different types of specialists. This paper explores the emerging technologies which are being used for the improvement of the healthcare process and identify the problems and their probable solutions specifically in the context of developing countries. Telemedicine offers a way of improving the standard of healthcare especially in the developing world. The study is focused on understanding the performance indicators of Hospital information systems (HIS). HIS/HMS basics modules. In this paper a 'stages of growth' framework is developed and used to describe the relations between types of hospital management and the use of hospital information systems over time. Hospital Information System (HIS) is considered as an important factor in health care sector for managing the administrative, financial and clinical aspects of a hospital.. This study attempts to improve the understanding of HIS implementation in developing countries. Globally accepted health care systems need to comply with Healthcare Insurance Portability and Accountability Act (HIPAA) standards of the US and that has become the norm of the Healthcare industry when it comes to medical records management and patient information privacy. The use of integrated Hospital Information Systems is related with many benefits for the healthcare system, increasing the effectiveness of the provided services and assuring quality of care.

Online Auction System

Abhishek V Deole Bhushan M Sambhare Anup A Dudhane Nikhil R harshe
Ashish G Wadichar

Online Auction System has two parts- user interface and admin interface. User Panel permits a customer to upload a product for sale and bid on a particular product to buy. This system presents an online display of category wise products they want to bid. There is an admin panel by which an admin can control the whole bidding system. Admin can approve products by the categories and also can control the registered customers. There is fixed delivery policy. After finishing the bidding process there is a notify system to notify the sellers and bidders through email. This is a fully dynamic system which can be easily operated by the users.

SHOP MANAGEMENT SYSTEM

Himanshi KWaurkar Mohini G Warkhade Hrishikesh Gosai Dahule Tanaya P Tamgadage

This research paper explores the benefits and challenges of implementing a shop management system in small businesses. A shop management system is a software tool designed to streamline various business functions such as inventory management, sales tracking, and customer relationship management. To conduct this study, we surveyed small business owners who have implemented a shop management system in their operations and analyzed the data using descriptive statistics. In our day to day activities we are facing the problem like “out of stock” situation when we visit a super market or any other marts. Smart Store Management is designed to monitor the daily inventory, out-of-stock, sales take-up, and other important data available from stores or outlets. Empty shelves in the stores frustrate customers and lead to sales losses for manufacturers and retailers. Customers show little tolerance for these so called “out of stock situations”. Shop Billing Management System is a software application designed to help shop owners manage their billing and inventory effectively. It is an essential tool for any retail business, regardless of its size. This system allows the shop owner to maintain accurate records of all their sales transactions, manage their inventory, generate invoices, and track customer orders. In this project, we will develop a Shop Billing Management System using Python programming language. Python is a popular language used for developing various software applications due to its simplicity, versatility, and ease of use. The system will allow the shop owner to add new products to their inventory, update existing product details, view and track inventory levels, and generate invoices for customers. It will also include features like generating daily, weekly, or monthly sales reports, managing discounts and promotions, and tracking customer orders. Overall, this project will help shop owners to streamline their billing and inventory management processes, thereby enhancing the efficiency and profitability of their business.

Stray Dog Adoption Application**Aryan Chavan Anurag Hiwarkar Shantanu Jibhakate Govind Upadhyay**

An application for the adoption of a stray dog is used to evaluate the qualifications of potential adopters. It includes details about the dog under consideration as well as private information like name and contact information. The application also inquires about the applicant's living circumstances, including if they own or rent their residence, whether their yard is fenced, and whether they have any more pets or children. It also asks for details about the applicant's lifestyle, such as how much time they can devote to dog-care. To confirm the applicant's fitness as a pet owner, references may also be necessary, such as those from a veterinarian or a personal reference. Overall, the programme works to guarantee that the dog is placed with suitable parents who will take good care of him

WOMEN SAFETY APP RESEARCH PAPER**Ayushi Kolhe**

In today's world, people using smart phones have increased rapidly and hence, a smart phone can be used efficiently for private security or various protection purposes. The dangerous incidents that outraged the entire other protection purposes. The heinous incidents that outraged the entire nation have waken us to go for the safety issues. So we have created an app so that women can feel safe when they go outside. In the feature of this application is to send application is to send the message to the registered contacts continuously, i.e. sharing the message to the registered contacts continuously and sharing the live location. Continuous location tracking information helps to seek out the location, tracking information helps to find the location of the victim and can be rescued safely. Index Terms: Android Application, Women Safety, Java, protection

Customer Management System Using Java and Sql**Mr. Harsh Parate Mr. Harsh Gour Mr. Kartik Khanorkar Mr. Rohit Meshram Mr. Sanskar Tidke**

In this paper, we present the design and development of a Customer Management System (CMS) that enables businesses to efficiently manage customer data, streamline sales processes, and enhance customer engagement. The proposed CMS is developed using the Agile methodology, which allows for iterative development and continuous improvement. The system is meant to be userfriendly, scalable, and flexible to fit the individual demands of different enterprises. The system architecture, database schema, and user interface are described in detail. A case study is used to evaluate the system, and the findings show that it has a positive impact on customer engagement and sales.

CosmicEye (ISS- Tracking Application)**Unnati Satpute Janhvi Patriwar Shreya Swamiy Shruti Kawale**

The International Space Station (ISS) tracker is a website based tracker which tracks the current location of space station and displays it on a map and provides information about the people currently present on space station using API application programming interface. The objective of the project is to provide an easy-to-use platform for space enthusiasts to learn more about the ISS and its movements

Twitter Clone Using React

Mr.Sandesh R. Katre Mr.Swaraj R. Dongre Mr. Shashank S. Kakde Mr.Pratik R. Palandurkar
Mr.Prajwal V. Dharme

In advanced education institutions, student participation in the classroom is directly related to their academic performance. Still, the majority of student attendance enrollment is still conventionally done, which is tedious and time- consuming. especially for those courses that involve large figures of scholars. Over the times, attendance operation has been conducted manually at most of the universities. To overcome the manual attendance issues, we proposed and enforced a smart attendance system with the end to encourage the implicit use of the Quick Response (QR) law as a future attendance operation system, to track and record student attendance in lectures and exercises for all applicable courses, as an end of this paper

FACE RECOGNITION ATTENDANCE SYSTEM USING PYTHON AND AI

Mr. Oditya Katre Mr. Aryaman Karmarkar Mr. Anurag Bobde Mr. Gaurav Karadbhaje Mr.
Aditya Mesharam

The face recognition attendance system is a computer-based technology that automates the attendance process by capturing and recognizing faces of individuals. The system uses cameras to capture images of faces, which are then compared to a database of enrolled faces to determine if the person is authorized to enter or exit the premises. The system offers a more efficient and accurate method of taking attendance, eliminating the need for manual attendance taking and reducing the risk of errors. This abstract highlights the benefits and features of the face recognition attendance system, including its ability to save time, reduce costs, and enhance security.

JSP BASED MEDICAL STORE MANAGEMENT SYSTEM

Rishabh Umredkar Rajat Wankhede Yash Mungole Ankita Pajai

The Medical Store Management System is a website project based on JSP, Servlets, JDBC, and MySQL technologies for medical stores, developed with the aims to help medical stores manage their day-to-day operations in a more efficient manner. In the medical store, the record is very important. This website is very useful to manage the record of medicines and payments. The website provides both user and admin interfaces, which enable users to place orders, manage their accounts, and track their orders, while administrators can manage product catalogs, pricing, and user accounts. This website also shows the real-time availability of stock and alerts if stock levels are low so that store manager can manage medicine stock.

Development of a Hybrid Digital DeviceFuzion**Pranay C. Dhoble Namdeo M. Turankar Prathmesh R. Bhoyar Yash V. Kaswate**

At present times, Telecommunication industry is the most active industry of all with the most affinity of growth potential and variability. Specially, the sub-industries like consumer electronics and hardware technology manufacturing high specification smartphone devices or computer processors are in major display. This paper holds the description of a hybrid digital device named as “FUZION” which contains the capabilities of both, a smartphone, and a computer. Through the applications of Computer engineering and programming knowledge it is possible to build a powerful device which can replace the need of CPU cabinets at home. This device is developed with the integration of micro-controllers and various modules governing different services. The base hardware of FUZION is Raspberry Pi that provides the basic control and processing system and customize-able connections for additional modules for the device. The dimensions of this device is of slightly bigger than that of a smartphone which is packed with 7 to 5 inch touch display screen. The availability of both desktop and android operating systems is achieved through the custom build hybrid OS programmed and designed to run both android apps and desktop applications. The OS is designed in such a way that the accessing of both mobile and PC environment can be performed simultaneously. This device can also help in reduce the E-waste proportions throughout the globe and complex digital device management at homes or worksite.

IOT Based Hybrid Portable Computer**Firoj T. Dahake Pankaj R. Rahele Atharva R. Yelekar**

present times, Telecommunication industry is the most active industry of all with the most affinity of growth potential and variability. Specially, the sub-industries like consumer electronics and hardware technology manufacturing high specification smartphone devices or computer processors are in major display. This paper holds the description of a hybrid digital device named as “FUZION” which contains the capabilities of both, a smartphone, and a computer. Through the applications of Computer engineering and programming knowledge it is possible to build a powerful device which can replace the need of CPU cabinets at home. This device is developed with the integration of micro-controllers and various IOT based modules governing different services. The base hardware of FUZION is Raspberry Pi that provides the basic control and processing system and customize-able connections for additional modules for the device. The dimensions of this device is of slightly bigger than that of a smartphone which is packed with 7 to 5 inch touch display screen. The availability of both desktop and android operating systems is achieved through the custom build hybrid OS programmed and designed to run both android apps and desktop applications. The OS is designed in such a way that the accessing of both mobile and PC environment can be performed simultaneously. This device can also help in reduce the E-waste proportions throughout the globe and complex digital device management at homes or worksites

Smart Attendance System Using QR Code

Mr. Om B. Adde Mr. Bhushan G. Jadhav Ms. Vedanti A. Fartade Mr. Roshan A. Khandagale
Mr. Omkar A. Patankar

In advanced education institutions, student participation in the classroom is directly related to their academic performance. Still, the maturity of pupil attendance registration is still conventionally done, which is tedious and time-consuming, especially for those courses that involve large numbers of scholars. Over the times, attendance operation has been conducted manually at most of the universities. To overcome the manual attendance issues, we proposed and enforced a smart attendance system with the end to encourage the implicit use of the Quick Response (QR) law as a future attendance operation system, to track and record student attendance in lectures and exercises for all applicable courses, as an end of this paper

Credit Card Fraud Detection using Machine Learning and Data Science

Kamal Chandwani Ashay sukhadeve Dewas Asole Karan Tiwari, Jaykumar Chavan ,Manav Kumbhare.

It is vital that credit card companies are able to identify fraudulent credit card transactions so that customers are not charged for items that they did not purchase. Such problems can be tackled with Data Science and its importance, along with Machine Learning, cannot be overstated. This project intends to illustrate the modelling of a data set using machine learning with Credit Card Fraud Detection. The Credit Card Fraud Detection Problem includes modelling past credit card transactions with the data of the ones that turned out to be fraud. This model is then used to recognize whether a new transaction is fraudulent or not. Our objective here is to detect 100% of the fraudulent transactions while minimizing the incorrect fraud classifications. Credit Card Fraud Detection is a typical sample of classification. In this process, we have focused on analysing and pre-processing data sets as well as the deployment of multiple anomaly detection algorithms such as Local Outlier Factor and Isolation Forest algorithm on the PCA transformed Credit Card Transaction data.

Use of Salesforce Platform for Building Realtime Event Management

Mr. Sugat Moon Mr. Pranay Nagrale Mr. Ritesh Nagpure Mr. Nilesh Lute Mr. Liladhar Lonare

This paper examines advantages of cloud while supporting real-time event management systems using Salesforce platform. We build here a service management platform for the events based on a real-time system located in a cloud. It allows event managers accomplish tasks in this system on-demand. And, it is deployed as a private cloud to grant an access only to the employees within organization.

Crop Yield Prediction And Efficient Use Of Fertilizers Related

Aniket Nagpure Yash Giredkar Abhijeet Kalamkar Krunal Choudhari Sandip Ganorkar

India's economy, which is mostly dependent on agricultural products and yield growth, is an agricultural nation. An increasing area of study in crop production analysis is data mining. The ability to anticipate yield is a critical issue in agriculture. Any farmer is curious to know how much of a crop he can anticipate. Analyze the different factors that are associated, such as the location and the pH level used to calculate the soil's alkalinity. Location is used in conjunction with the use of third-party applications like APIs for weather and temperature, type of soil, nutrient value of the soil in that region, amount of rainfall in that region, and soil composition. Percentages of nutrients like Nitrogen (N), Phosphorous (P), and Potassium (K) are also used. All of these data variables will be analysed, and the data will be trained using different machine learning methods that are appropriate for building models. The system includes a model to be exact and accurate in predicting crop production and to provide the end user with appropriate recommendations regarding required fertiliser ratios based on atmospheric and soil factors of the land that enhance to boost crop yield and increase farmer income.

Advanced Theft Detection in Machine Learning with GUI Using Tensor-Flow and YOLO

Roshan Kolte Vaibhav Deshbhratar Prathmesh Lakhade Prachi Motghare Shraddha Bisen

Due to its immense use in official surveillances, tracking modules applied in security and lots of other's applications have made researchers to devise a lot of optimized and specialized methods. Object detection and tracking could be an immense, vivacious however inconclusive and trending area of computer vision. For validation purpose live input video will be taken for the same where objects will be getting detected and it can be simulated same for real-time through external hardware added. In the end we see the proper optimized and efficient algorithm for object detection and alert for security. Object Detection is computer vision technique used to detect object and identify its localization. This technique is not only used to identify the location but also to identify which type of object it is. This CV technique is used to detect objects in real time while maintaining the level of accuracy. By bringing some advancement in it, this system can be very helpful for people to keep track of their precious things or devices which are very expensive and need to be protected. Open CV (Open-Source Computer Vision Library) is a library of programming functions mainly aimed at real-time computer vision. Open CV features GPU acceleration for real-time operations. This feature helps us to write computationally intensive codes in C/C++ and create a Python wrapper for it so that we can use these wrappers as Python modules.

Pathfinder: Shortest Path Finding Algorithms Visualizer

Himanshu Gokhale Sanket Patrikar Ram Patil Sameeksha Wairagade

Shortest path finding is a classic problem in the field of optimization and has been studied extensively in computer science and mathematics. This project aims to provide an interactive visualizer, allowing users to experiment with various algorithms and heuristics in order to gain a better understanding of the problem and its solutions. The visualizer includes a variety of exhaustive and heuristic algorithms, as well as options for customizing the problem size and algorithm parameters.

Agro Informatics And Assistance Web Portal

Harish Gorewar Tarjan Bawankule Harsh Desai Tanmay Vaidya Somesh Jais

Information Technologies (ITs) have made our life easy. ITs are playing valuable roles in a variety of technical and non-technical fields. So can also be used for farmers to help them to get more production and profit and awareness by this new Agro schemes and awareness through this portal and centralized approach to view different government's agriculture schemes including the compensation schemes for farming. Getting availed to the required information related to disasters can be made possible through the SMS alert facility provided by the system. It helps to keep our beloved farmers technically updated about each new and old running schemes and benefits at one tap in their smartphones or at nearby internet centers. They can easily apply and track the current status for their applications at any time

Enhancing Women's Safety Using Android

Prachi Tadse Priti Nikhare

Women Safety App is a mobile application designed to improve the safety of women across the globe. This app allows users to quickly and easily contact emergency services, as well as alert family members, friends, and law enforcement in the event of an emergency. The app also allows users to share their location with trusted contacts and receive instant alerts from nearby emergency services. This app is designed to provide users with a fast and reliable way to keep themselves and their loved ones safe. The app utilizes GPS technology to track a user's location and send alerts to registered contacts. It also uses advanced algorithms to detect situations of distress, such as if a user is being followed in suspicious circumstances. If a user is in danger, the app will send an emergency alert to law enforcement as well as to contacts within the user's network. Overall, the Women Safety App is an valuable tool for increasing the protection of women around the world. It provides users with access to vital resources, real-time alerts, and the ability to easily notify their safety networks should an emergency occur.

Smart Dustbin Using Internet Of Things (Iot)

Kunal E. Shriwas Amisha P. Manegurudeo Dipti J. Khobragade Amit R. Rahangdale

Swachh Bharat Abhiyan (English Clean India Mission and shortened as SBA or SBM for "Swachh Bharat Mission") is a public crusade by the Government of India, covering 4,041 statutory metropolises and municipalities, to clean the thoroughfares, roads and structure of the country. The end of the charge is to cover all the pastoral and civic areas of the country to present this country as an ideal country before the world. With the proliferation of Global System for Mobile Communication (GSM) bias similar as smartphones, detectors, cameras. It's possible to collect massive quantum of scrap.

The main objective of the project is to design a smart dustbin which will help in keeping our environment clean and also eco-friendly. We are inspired from Swacha Bharat Mission. Nowadays technologies are getting smarter day-by-day so, as to clean the environment we are designing a smart dustbin by using Arduino. This smart dustbin management system is built on the microcontroller based system having ultrasonic sensors on the dustbin. If dustbin is not maintained than these can cause an unhealthy environment and can cause pollute that affect our health. In this proposed technology we have designed a smart dustbin using ARDUINO UNO, along with ultrasonic sensor, servo motor, and battery jumper wire. After all hardware and software connection, now Smart Dustbin program will be run.

My Campusweb: An Integrated Platform For Campus Management

Achal Punyapreddiwar Kanak Thool

My Campus Web is a web-based platform designed to offer a comprehensive and integrated solution for campus management. The platform provides functionalities such as academic record-keeping, student enrollment, course management, scheduling, attendance tracking, financial management, and much more.

With My Campus Web, students, faculty, and staff can access campus information and services from anywhere and on any device with an internet connection. The platform also features real-time analytics and reporting capabilities that enable the administration to monitor the campus's performance in real-time and make data-driven decisions.

My Campus Web's user-friendly interface provides an intuitive experience, making it easy for users to navigate through the platform. The platform is highly customizable, allowing institutions to tailor it to their unique needs.

In conclusion, My Campus Web offers a scalable, integrated, and user-friendly platform for campus management that can help higher education institutions optimize their operations and enhance their students' experience.

Master of Business Administration

The impact of international Business on Indian Economy: A Comprehensive Study

Shraddha A. Jambhulkar Shital Dhole

International business has become an integral part of the global economy. The globalization of markets and the growth of international trade has led to increased economic opportunities for countries around the world. India, as a developing nation, has witnessed significant growth in its international business activities in recent years. This research paper aims to analyze the impact of international business on the Indian economy. The paper provides a comprehensive analysis of the effects of international trade and investment on various aspects of the Indian economy, including GDP growth, employment, productivity, and trade balance. The study also examines the policies and initiatives adopted by the Indian government to facilitate international business activities

Strategies For Using Social Media In Marketing

Shraddha Barapatre Preshita Dhakulkar

The majority of individuals today use social media networks or new media as one of their primary means of communication. This study's goal is to examine social media marketing communication. The descriptive technique was employed in this study to paint a thorough picture of the circumstances surrounding the various situations of the variables under investigation. The findings showed that social media marketing has an impact on consumer interest in purchasing products offered through these platforms, such as marketing carried out on Instagram, the most popular social media platform in the world today. The marketing tactics used on the social media platform Instagram are discussed in this study. Due of these outcomes, social media is among the best platforms for distributing marketing communications.

Therefore, it is anticipated that this marketing strategy will aid online retailers in running their businesses. This marketing strategy offers more immediate benefits to customers, encouraging them to expand already established online firms

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