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1.3.2 Sample Reports of Internships/Projects

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INTERNSHIP REPORT

Internship Program	: Python Development
Internship Duration	: May 2, 2023, to May 17, 2023
Internship Provider	: TechnoValley Software Pvt. Ltd.
Branch	: Computer Science and Engineering (CSE)
Branch	: Electronics and Communication Engineering (ECE)
Number of Students (CSE)	: 57
Number of Students (ECE)	: 2

Introduction

TechnoValley Software Pvt. Ltd. hosted a comprehensive internship program spanning from May 2, 2023, to May 17, 2023. The focus of the program was Python development, and it included 57 students from the Computer Science and Engineering (CSE) discipline, as well as 2 students from Electronics and Communication Engineering (ECE). The aim was to equip these students with practical skills and knowledge in Python, one of the most versatile and widely used programming languages.

Internship Activities

The program commenced with an in-depth exploration of Python's fundamentals, including syntax, data structures, and object-oriented programming. Interns worked on real-world application development projects, applying their knowledge to create functional and efficient Python applications. The program included training on integrating Python with databases and using it for data manipulation. Students learned about web development using Python frameworks such as Django and Flask. The program covered automation and scripting techniques using Python, a valuable skill for various industries.

All 59 interns developed a strong foundation in Python programming, enabling them to work on a variety of projects and tasks. They gained the ability to design and develop applications in Python, addressing real-world challenges. Understanding how to work with databases and use Python for data-related tasks. Students learned how to create web applications using Python frameworks. The program enhanced their skills in automating tasks and scripting, a valuable skill in many domains.




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Conclusion

The Python development internship at TechnoValley Software Pvt. Ltd. offered an invaluable learning experience for 59 students. It empowered them with practical skills and knowledge in Python, positioning them for successful careers in software development, data analysis, and more. The internship program served as a pivotal point in their academic and professional journey, providing them with the essential skills needed to excel in the dynamic field of software development and data analysis.



Internship at TechnoValley



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INTERNSHIP REPORT

Internship Provider : Industrial Support Services Company LLL
Location : Abu Dhabi, UAE
Internship Duration : 1 Month
Internship Area : Non-Destructive Testing (NDT)
Name of Student : Rajaneesh Singh

Introduction

Rajaneesh Singh embarked on a one-month internship with Industrial Support Services Company LLL in Abu Dhabi, UAE. The primary objective of this internship was to provide hands-on training and practical experience in the field of Non-Destructive Testing (NDT).

Internship Activities

The internship began with an overview of various NDT techniques, including ultrasonic testing, radiography, magnetic particle inspection, and liquid penetrant testing. Rajaneesh gained hands-on experience in handling NDT equipment and tools used for inspecting and testing materials and structures. Practical sessions involved learning and implementing NDT testing procedures for different materials and applications. Emphasis on workplace safety and adherence to safety protocols within the NDT industry. The program included practical NDT inspections and testing, allowing Rajaneesh to apply the acquired knowledge in real-world scenarios.

Rajaneesh developed a strong understanding of various NDT techniques, enabling him to perform inspections and tests competently. He gained practical experience in handling NDT equipment and tools, ensuring accurate and reliable results. The ability to perform NDT testing procedures for a range of materials and applications. Understanding and implementing safety protocols within the NDT industry to ensure a secure work environment. Engagement in practical NDT inspections and testing enhanced problem-solving and practical application skills.

Conclusion

Rajaneesh Singh's one-month internship at Industrial Support Services Company LLL in Abu Dhabi, UAE, provided him with valuable practical experience and knowledge in Non-Destructive Testing (NDT). This internship equipped him with the necessary skills to excel in the NDT industry



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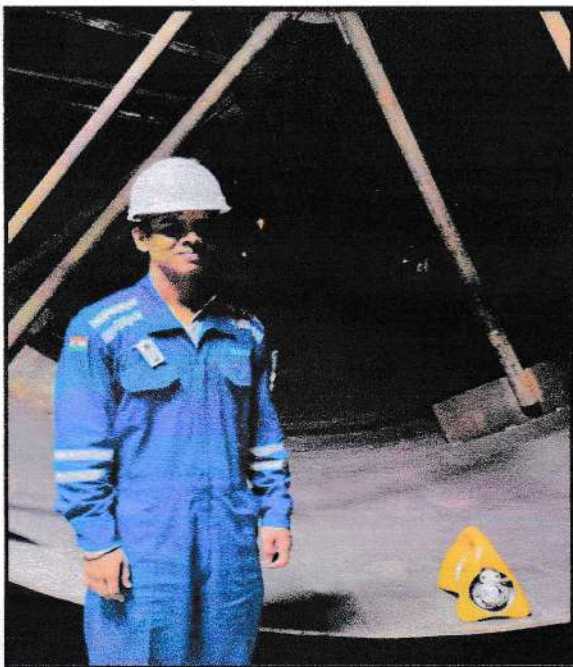
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and contribute effectively to inspections and testing of materials and structures. The program bridged the gap between theoretical knowledge and practical application, allowing Rajaneesh to apply his skills in real-world NDT scenarios. Industrial Support Services Company LLL's commitment to training and nurturing the next generation of NDT professionals is commendable, and Rajaneesh expresses his gratitude for this enriching experience.

This internship marked an essential step in his academic and professional journey, enabling him to develop the foundational skills needed to excel in the dynamic field of Non-Destructive Testing.



Internship at Industrial Support Services Company, Abu Dhabi



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INTERNSHIP REPORT

Internship Program : HVAC, Welding, NDT, and Piping
Internship Duration : 21 Days
Internship Provider : MTTC International
Branch : Mechanical Engineering
Number of Students :15

Introduction

MTTC International conducted a comprehensive 21-day internship program focused on various facets of Mechanical Engineering. This program engaged 15 students from the Mechanical Engineering discipline. The aim was to provide practical exposure and hands-on training in Heating, Ventilation, and Air Conditioning (HVAC), Welding, Non-Destructive Testing (NDT), and Piping.

Internship Activities

The program began with an in-depth exploration of HVAC systems, covering principles, design, and operation. Students received training in various welding techniques, such as MIG, TIG, and stick welding. Practical sessions in NDT methods like ultrasonic testing, radiography, and magnetic particle inspection. Introduction to piping design, including layout, materials, and safety standards. The program included hands-on projects in each area, allowing students to apply their knowledge in practical scenarios.

All 15 interns developed a strong understanding of HVAC systems, enabling them to work on HVAC design and maintenance. They gained practical experience in various welding techniques, an essential skill in mechanical engineering. Understanding and applying NDT methods for inspecting and testing materials and structures. Knowledge of piping design principles, including layout and safety standards. Engagement in hands-on projects enhanced problem-solving and practical application skills.



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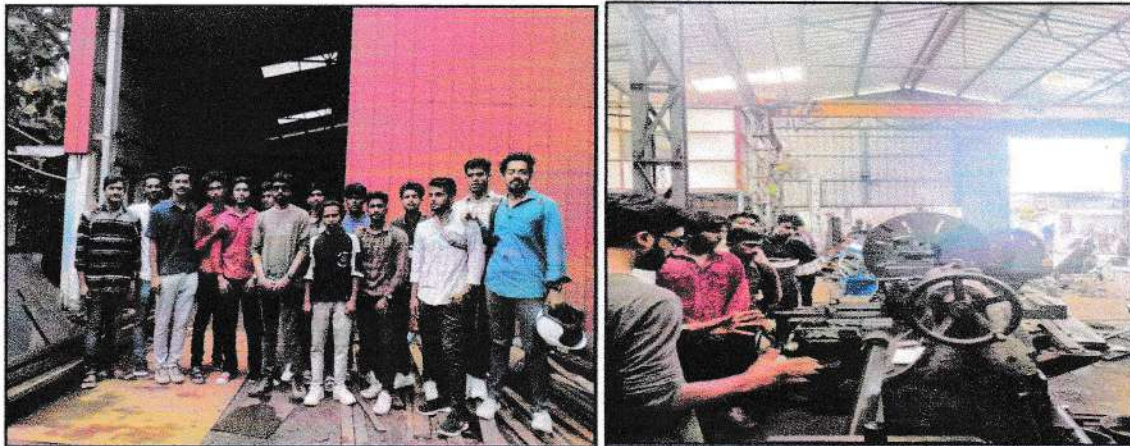
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Conclusion

The 21-day internship at MTTC International provided a valuable learning experience for the 15 Mechanical Engineering students. It equipped them with practical skills and knowledge in HVAC systems, welding techniques, NDT methods, and piping design, preparing them for careers in various mechanical engineering fields.

The internship program marked an essential step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the diverse and dynamic field of Mechanical Engineering.



Internship at MTTC LLC



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INTERNSHIP REPORT

Company : Transformers and Electricals Kerala Limited (TELK)
Location : Angamaly
Internship Duration : May 8, 2023, to May 31, 2023
Internship Topic : Implant Training
Branch : Electrical & Electronics Engineering
Number of Students : 7

Introduction

The internship at Transformers and Electricals Kerala Limited (TELK) in May 2023 provided seven students with hands-on experience and insights into the field of electrical engineering, with a focus on implant training.

Internship Activities

The interns learned about the entire transformer manufacturing process, gaining practical knowledge in design, core assembly, winding, insulation, and testing. They actively participated in quality control procedures, ensuring transformers met high-quality standards for efficiency and safety. The interns visited suppliers, understanding the importance of sourcing quality materials in transformer production. They engaged in discussions and workshops to grasp transformer design and engineering concepts. TELK emphasized workplace safety, providing interns with essential knowledge of safety protocols.

Conclusion

TELK's internship program enriched the academic and professional journey of Alby Binoy, Anand M. A, Abhijith Aji, Abhijith S, Franio Sonilal, C. J. Joji, and Ajmal Siyad. The experience equipped them with essential skills and knowledge in electrical engineering, making them well-prepared for future careers. TELK's commitment to nurturing the next generation of engineers is commendable.

This internship program served as a valuable stepping stone for the interns, preparing them for the challenges and opportunities in the electrical engineering field.



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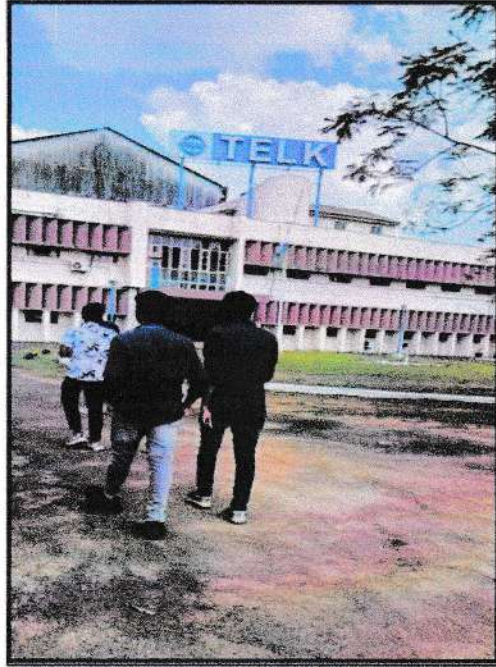
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Internship at TELK



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INTERNSHIP REPORT

Location	: Keltron Knowledge Centre, Palayam
Internship Duration	: May 2, 2023, to May 15, 2023
Internship Topic	: IoT Basics
Branch	: Electronics & Communication Engineering (ECE)
Branch	: Electrical & Electronics Engineering student (EEE)
Number of Students(ECE)	: 8
Number of Students(EEE)	: 8

Introduction

The internship program at Keltron Knowledge Centre, Palayam, from May 2, 2023, to May 15, 2023, provided an opportunity for sixteen students to gain practical knowledge in the fundamentals of the Internet of Things (IoT) across two engineering disciplines: Electronics and Communications Engineering and Electrical & Electronics Engineering.

Internship Activities

The interns received comprehensive training on the basics of IoT, including its applications, architecture, and components. Students learned about various sensors and data acquisition methods used in IoT applications. The program covered IoT communication protocols, such as MQTT and CoAP, and practical exercises on their implementation. Interns had hands-on experience with IoT development boards and microcontrollers, understanding their role in IoT projects. Students were exposed to real-world IoT projects, enabling them to apply their knowledge to practical scenarios.

Conclusion

The internship program at Keltron Knowledge Centre, Palayam, was a valuable opportunity for these students to acquire in-depth knowledge of IoT fundamentals and practical experience. It equipped them with essential skills to thrive in the field of Electronics and Communications Engineering and Electrical & Electronics Engineering, particularly in IoT-related projects.



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The knowledge and expertise gained during this program will undoubtedly contribute to the students' academic and professional growth, and they now possess a strong foundation in IoT, making them well-prepared for future challenges in the field. The commitment of Keltron Knowledge Centre to nurturing the next generation of engineers is commendable, and the students express their gratitude for this enriching experience.



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INTERNSHIP REPORT

Location	: Keltron, Pala
Internship Duration	: May 2, 2023, to May 16, 2023
Internship Topic	: Embedded Systems
Branch	: Electronics & Communication Engineering (ECE)
Branch	: Electrical & Electronics Engineering student (EEE)
Number of Students(ECE)	: 9
Number of Students(EEE)	: 1

Introduction

The internship program at Keltron, Pala, conducted from May 2, 2023, to May 16, 2023, provided a unique learning opportunity for ten students pursuing Electronics & Communication Engineering and Electrical & Electronics Engineering. The program focused on developing expertise in Embedded Systems.

Internship Activities

The interns received comprehensive training on the principles, components, and applications of embedded systems. They learned to program microcontrollers, gaining hands-on experience with real-world applications. Students were introduced to various sensors and actuators commonly used in embedded systems and learned to interface them. The program included designing and implementing embedded systems for specific applications. Interns were involved in practical projects, gaining experience in solving real-world challenges using embedded systems. The interns acquired a strong foundation in embedded systems, enabling them to work on real-world projects.

They developed practical skills in programming microcontrollers for various applications. Understanding how to interface sensors and actuators in embedded systems. Participation in real-world projects enhanced problem-solving and project management skills.



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Conclusion

The internship program at Keltron, Pala, was a valuable opportunity for these students to gain expertise in Embedded Systems. The program equipped them with practical skills and knowledge, making them well-prepared for their future careers in Electronics & Communication Engineering and Electrical & Electronics Engineering.

The experience gained during this internship will undoubtedly contribute to their academic and professional growth. Keltron's commitment to nurturing the next generation of engineers is commendable, and the students express their gratitude for this enriching experience.

This internship program has served as a stepping stone in their academic and professional journey, allowing them to bridge the gap between theory and practical application in the dynamic field of Embedded Systems.



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INTERNSHIP REPORT

Location : Keltron, Kozhikode
Internship Duration : May 2, 2023, to May 15, 2023
Internship Topic : MCB Fabrication
Branch : Electronics & Communication Engineering
Number of Students : 2

Introduction

The internship program at Keltron, Kozhikode, conducted from May 2, 2023, to May 15, 2023, provided a unique opportunity for two students pursuing Electronics & Communication Engineering. The focus of the internship was on MCB (Miniature Circuit Breaker) fabrication.

Internship Activities

The interns received hands-on training in the manufacturing process of MCBs, from component assembly to testing. They actively participated in quality control procedures, ensuring that the MCBs met high standards for safety and reliability. Students learned about the procurement of raw materials, understanding the importance of sourcing high-quality components. Keltron emphasized workplace safety, providing interns with essential knowledge of safety protocols.

The interns gained practical experience in the manufacturing process of MCBs. They learned the importance of maintaining high-quality standards in electrical component manufacturing. Understanding the significance of sourcing quality materials for electrical components. Exposure to safety protocols and procedures in the manufacturing environment.

Conclusion

The internship program at Keltron, Kozhikode, was a valuable opportunity for these two students to gain practical knowledge in MCB fabrication, an essential aspect of the electronics industry. The program equipped them with hands-on skills and knowledge, making them well-prepared for their future careers in Electronics & Communication Engineering. The experience gained during this internship will undoubtedly contribute to their academic and




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professional growth. Keltron's commitment to nurturing the next generation of engineers is commendable, and the students express their gratitude for this enriching experience.

This internship program served as a stepping stone in their academic and professional journey, allowing them to bridge the gap between theory and practical application in the dynamic field of MCB fabrication within the electronics industry.



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INTERNSHIP REPORT

Internship Program : HTML, Basics of CSS, and Dreamweaver
Internship Duration : May 2, 2023, to May 8, 2023
Internship Provider : Keltron Knowledge Centre, Kannur
Branch : Computer Science and Engineering
Number of Students : 4

Introduction

From May 2, 2023, to May 8, 2023, Keltron Knowledge Centre in Kannur hosted a week-long internship program focused on web development technologies. This program was attended by four students from the Computer Science and Engineering (CSE) discipline. The primary objective was to provide hands-on training in HTML, the basics of CSS, and Dreamweaver to equip students with fundamental web development skills.

Internship Activities

The internship commenced with a comprehensive introduction to HTML, the fundamental markup language for creating web pages. Students learned the basics of CSS (Cascading Style Sheets) for enhancing the design and layout of web pages. Interns gained practical experience in using Dreamweaver, a popular web development application, for creating and editing web content. The program included hands-on projects where students implemented what they learned in a practical setting, designing and coding web pages.

All four interns developed a strong understanding of HTML, allowing them to create web content effectively. They learned the foundational principles of CSS for styling web pages and improving user experience. Practical experience in using Dreamweaver for web development and content management. Students acquired the skills to design and code web pages, a valuable asset for web development and design roles.

Conclusion

The week-long internship program at Keltron Knowledge Centre, Kannur, provided an invaluable learning experience for the four CSE students. It equipped them with practical skills and knowledge in web development, particularly in HTML, CSS, and Dreamweaver. These skills will be beneficial for pursuing careers in web development, design, and related fields.




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The program served as a bridge between theoretical knowledge and hands-on practical experience, empowering the interns to apply their skills in real-world web development scenarios. Keltron Knowledge Centre's commitment to nurturing future web developers and designers is commendable, and the students express their gratitude for this enriching experience.

This internship program marked an essential step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in web development and design.



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INTERNSHIP REPORT

Internship Duration : 15 Days

Internship Providers : Binesh Sukumar Architects and Planners & Trissur Builders Pvt. Ltd.

Branch : Civil Engineering

Number of Students : 2

Introduction

Devika Santhos and Jerin M, two students from the Civil Engineering discipline, successfully completed a 15-day internship. Devika interned at Binesh Sukumar Architects and Planners, while Jerin M interned at Trissur Builders Pvt. Ltd. The internships allowed them to gain practical experience on various construction and architectural projects.

Internship Activities

Devika Santhosh (Binesh Sukumar Architects and Planners)

Devika had the opportunity to assist in architectural design processes, including creating blueprints and layouts for residential and commercial projects. She participated in site visits to understand the practical implementation of architectural designs. Devika learned about client interactions and project coordination from an architectural perspective. She was involved in project documentation, which included preparing project reports and specifications.


Jerin M (Trissur Builders Pvt. Ltd.)

Jerin was exposed to various aspects of construction management, including project planning, scheduling, and resource allocation. He actively engaged in site supervision, ensuring that construction work adhered to plans and quality standards. Jerin learned about quality control measures to maintain construction quality. He was involved in the execution phase, collaborating with contractors and workers to ensure project progress.

Conclusion

Devika Santhos and Jerin M's 15-day internships at Binesh Sukumar Architects and Planners and Trissur Builders Pvt. Ltd., respectively, provided valuable practical experience in civil engineering




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and architecture. These internships equipped them with the skills and insights needed to excel in their respective fields.

The internships not only bridged the gap between theoretical knowledge and practical application but also allowed them to apply their skills in real-world architectural and construction scenarios. The commitment of their respective internship providers to educating and training the next generation of civil engineers and architects is commendable, and the interns express their gratitude for this enriching experience.

These internships mark significant steps in their academic and professional journeys, enabling them to develop the foundational skills needed to excel in the dynamic fields of civil engineering and architecture.



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INTERNSHIP REPORT

Internship Provider : Build Own Developers Pvt. Ltd.
Internship Duration : 15 Days
Branch : Civil Engineering
Number of Students : 8

Introduction

Eight students from the Civil Engineering discipline engaged in a 15-day internship with Build Own Developers Pvt. Ltd. The focus of this internship was to provide practical exposure to different aspects of the "Cloud Ville" project undertaken by the organization.

Internship Activities

The internship began with an extensive overview of the "Cloud Ville" project, including its goals, scope, and design. Interns had the opportunity to visit the project site, gaining insights into the real-world application of civil engineering concepts. Practical experience in design and planning processes, including blueprints, structural calculations, and architectural considerations. Learning about construction techniques, materials, and best practices used in the project. Exposure to project management, including scheduling, budgeting, and resource allocation. Understanding the environmental impact and sustainability aspects of the project. Emphasis on workplace safety and adherence to safety regulations within the construction industry.

The interns gained a comprehensive understanding of the "Cloud Ville" project, its scope, and design. Practical exposure to a live construction site, observing real-world civil engineering in action. Knowledge and skills related to design, planning, and architectural considerations. Understanding construction techniques, materials, and best practices. Exposure to project management practices, including scheduling and budgeting. Knowledge of environmental impact and sustainability aspects in civil engineering projects. Understanding and practicing safety protocols within the construction industry.



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Conclusion

The 15-day internship at Build Own Developers Pvt. Ltd. provided a valuable learning experience for the eight students of Civil Engineering. It equipped them with practical skills and insights into the various aspects of the "Cloud Ville" project, preparing them for careers in civil engineering and construction. This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in real-world construction and civil engineering scenarios. Build Own Developers Pvt. Ltd.'s commitment to nurturing the next generation of civil engineers is commendable, and the students express their gratitude for this enriching experience.

This internship marked a significant step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the dynamic field of Civil Engineering, particularly in the context of large-scale construction projects like "Cloud Ville."



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INTERNSHIP REPORT

Internship Provider : Costford
Internship Duration : May 5, 2023, to May 15, 2023
Branch : Civil Engineering
Number of Students : 7

Introduction

Seven students from the Civil Engineering discipline participated in a ten-day internship at Costford, which focused on cost and energy-efficient construction technologies. The primary goal was to provide these students with practical exposure to innovative construction techniques and sustainable practices.

Internship Activities

The internship began with an introduction to energy-efficient construction methods, materials, and design principles. Interns had the opportunity to visit ongoing projects to observe and learn about sustainable and efficient construction practices in action. Practical experience in design and planning for energy-efficient buildings, including architectural considerations and blueprints. Understanding the selection of sustainable and eco-friendly construction materials. Learning about cost-efficient construction practices and budgeting. Exposure to various sustainable technologies used in construction, such as rainwater harvesting and passive solar design.

The interns gained a comprehensive understanding of energy-efficient construction methods and practices. Site visits provided practical insights into real-world applications of sustainable construction techniques. Knowledge and skills related to energy-efficient design and planning. Understanding the selection of eco-friendly construction materials. Knowledge of cost-efficient construction practices and budgeting. Exposure to various sustainable technologies used in construction.

Conclusion

The ten-day internship at Costford provided valuable hands-on experience and knowledge to the seven students of Civil Engineering. It equipped them with practical skills and insights into cost-effective and energy-efficient construction technologies, preparing them for careers in



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sustainable construction and civil engineering. This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in real-world construction scenarios. Costford's commitment to educating and training the next generation of civil engineers in sustainable practices is commendable, and the students express their gratitude for this enriching experience.

This internship marked a significant step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the dynamic field of Civil Engineering, particularly in the context of cost and energy-efficient construction technologies.



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INTERNSHIP REPORT

Internship Provider : HOCL (Hindustan Organic Chemicals Limited)
Location : Kochi
Internship Duration : May 2, 2023, to May 16, 2023
Branch : Mechanical Engineering
Number of Students : 7

Introduction

Seven students pursuing Mechanical Engineering participated in a two-week internship at HOCL (Hindustan Organic Chemicals Limited) located in Kochi, India. This internship provided the students with an opportunity to gain practical experience in various aspects of mechanical engineering within an industrial setting.

Internship Activities

The internship began with an introduction to the mechanical systems, machinery, and processes used within the organization. Interns gained hands-on experience operating and maintaining mechanical equipment, such as pumps, turbines, and compressors. Emphasis was placed on safety procedures and protocols within an industrial environment to ensure the well-being of employees and the protection of assets. The interns were exposed to maintenance practices, including preventive and corrective maintenance of mechanical systems and machinery. The program included practical projects related to mechanical engineering, where the students applied their knowledge to solve real-world challenges.

The interns gained a deeper understanding of industrial mechanical systems and operations. Practical experience in operating and maintaining mechanical equipment, ensuring safe and efficient functioning. Understanding the importance of safety protocols in an industrial setting. Exposure to maintenance practices that are crucial for the upkeep of mechanical systems. Engagement in real-world projects enhanced problem-solving skills and practical application.



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Conclusion

The two-week internship at HOCL in Kochi provided valuable hands-on experience and knowledge to the seven students of Mechanical Engineering. This internship equipped them with practical skills and insights into the industrial application of mechanical engineering.

The program served as a bridge between theoretical knowledge and practical application, allowing the students to apply their skills in real-world industrial scenarios. HOCL's commitment to nurturing and educating the next generation of mechanical engineers is commendable, and the students express their gratitude for this enriching experience.

This internship marked an important step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the dynamic field of Mechanical Engineering within an industrial context.



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INTERNSHIP REPORT

Internship Provider : IBS Software Private Limited
Internship Duration : 22 Days
Branch : Computer Science & Engineering
Number of Student : 1

Introduction

Jevin K Mathew from the Computer Science and Engineering discipline completed an internship at IBS Software Pvt. Ltd. focusing on the Corporate HR Team's functioning for a duration of one month.

Internship Activities

The internship commenced with an overview of HR operations within a corporate setting, including recruitment, onboarding, employee engagement, and performance management. Engaging in team activities and understanding the dynamics of a corporate HR team, including interactions with team members and managers. Learning about the recruitment lifecycle, from sourcing candidates to conducting interviews and making hiring decisions. Participation in employee engagement programs and understanding the importance of fostering a positive work environment. Exposure to performance evaluation processes and methodologies used to assess employee performance.

Gained insights into various aspects of HR operations within a corporate environment. Understanding the importance of teamwork and collaboration within a corporate HR team setting. Learning the intricacies of the recruitment process, from candidate sourcing to selection. Exposure to employee engagement initiatives and strategies to enhance workplace satisfaction. Understanding the methodologies used in evaluating employee performance and contributions.



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Conclusion

The one-month internship at IBS Software Pvt. Ltd. provided valuable exposure to the functioning of a corporate HR team for the Computer Science and Engineering student. The internship equipped the student with essential knowledge and practical insights into HR operations within a corporate setting.

This internship facilitated the application of theoretical knowledge to practical scenarios, enabling the intern to gain a comprehensive understanding of HR functions within a corporate environment. IBS Software Pvt. Ltd.'s commitment to providing a learning opportunity in corporate HR operations is commendable, and the intern expresses gratitude for this enriching experience. This internship marks a significant step in the academic and professional journey of the student, providing them with insights into HR functions and dynamics within the corporate realm, complementing their Computer Science and Engineering background.



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INTERNSHIP REPORT

Internship Provider : National Builders
Internship Duration : May 4, 2023, to May 16, 2023
Branch : Civil Engineering
Number of Students : 4

Introduction

Four students from the Civil Engineering discipline participated in a 13-day internship with National Builders, focusing on a high-rise residential apartment project. The primary objective of this internship was to provide hands-on experience and practical insights into the planning, design, and execution of high-rise building projects.

Internship Activities

The internship began with an extensive overview of the high-rise residential apartment project, including its objectives, architectural design, and structural considerations. Interns had the opportunity to visit the construction site to observe and learn about the ongoing project's progress, safety measures, and construction techniques. Practical experience in architectural design and structural planning for high-rise buildings, including blueprint analysis. Learning about specialized construction techniques and methodologies used in high-rise construction, such as formwork systems and concrete pouring. Understanding quality control and assurance practices in high-rise construction to ensure structural integrity. Emphasis on workplace safety, including safety regulations and precautions within the construction industry.

The interns gained a comprehensive understanding of high-rise residential apartment projects, including design, planning, and construction. Practical insights into the real-world application of civil engineering concepts in a high-rise construction setting. Knowledge and skills related to architectural design, structural planning, and blueprint analysis. Understanding specialized construction techniques and methodologies for high-rise buildings. Knowledge of quality control and assurance practices to ensure structural integrity. Understanding and implementing safety protocols within the high-rise construction industry.




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Conclusion

The 13-day internship at National Builders provided valuable hands-on experience and knowledge to the four students of Civil Engineering. It equipped them with practical skills and insights into the intricacies of high-rise residential apartment construction, preparing them for careers in structural engineering, project management, and construction.

This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in real-world high-rise construction scenarios. National Builders' commitment to educating and training the next generation of civil engineers in complex construction projects is commendable, and the students express their gratitude for this enriching experience.

This internship marked an important step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the dynamic field of Civil Engineering, particularly in the context of high-rise residential apartment projects.



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INTERNSHIP REPORT

Internship Provider : RUBCO, Kottayam
Internship Duration : 10 Days
Branch : Mechanical Engineering
Number of Students : 2

Introduction

Two students pursuing Mechanical Engineering completed an internship at RUBCO, specifically focusing on the Rubberised Coir Mattress division, spanning ten days.

Internship Activities

The internship commenced with an overview of the production process of rubberised coir mattresses, from raw material selection to the final product assembly. Understanding the materials used in coir mattresses and getting acquainted with the machinery and equipment involved in the manufacturing process. Learning about quality control measures and processes implemented to ensure the durability and comfort of the mattresses. Engaging in practical sessions involving the manufacturing stages, from coir treatment to rubberizing and finishing. Emphasis on workplace safety measures and adherence to safety protocols within the manufacturing unit.

Gained insights into the complete production cycle of rubberised coir mattresses. Acquired knowledge about the materials used and the machinery involved in the manufacturing process. Learned about quality control measures and their significance in ensuring product quality. Engaged in hands-on training, gaining practical exposure to the manufacturing stages. Understanding and implementing safety protocols within a manufacturing unit.



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Conclusion

The ten-day internship at RUBCO's Rubberised Coir Mattress division provided valuable hands-on experience and knowledge to the two students of Mechanical Engineering. This internship equipped them with practical skills and insights into the production process of rubberised coir mattresses. The program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to witness and engage in the manufacturing processes. RUBCO's commitment to educating and training the next generation of mechanical engineers in the field of mattress production is commendable, and the interns express their gratitude for this enriching experience.

This internship marked an important step in their academic and professional journey, enabling them to develop foundational skills needed to excel in the manufacturing sector within the realm of Mechanical Engineering, specifically in the rubberised coir mattress division.



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INTERNSHIP REPORT

Internship Provider : Server Foster Technologies
Internship Duration : 30 Days
Branch : Computer Science & Engineering
Number of Student : 1

Introduction

Jacob Ninan Raju from the Computer Science and Engineering discipline completed an internship at Server Fosters Technologies for a duration of one month. The focus of the internship was on acquiring practical skills in web development and designing.

Internship Activities


The internship began with an overview of web development fundamentals, including HTML, CSS, and JavaScript. Learning about design principles and user interface (UI) considerations for web applications. Practical training in frontend development, including creating responsive and visually appealing web pages. Introduction to backend development concepts, databases, and server-side scripting languages. Engaging in hands-on projects to apply acquired skills in web development and design.

Acquired practical skills in frontend and backend web development. Understanding design principles and UI considerations for creating user-friendly web interfaces. Learning scripting languages and database fundamentals for web applications. Applying theoretical knowledge to real-world projects, enhancing problem-solving abilities. Gained insight into the workflow and requirements of a professional web development environment.

Conclusion

The one-month internship at Server Fosters Technologies provided valuable practical exposure to the field of web development and design for the Computer Science and Engineering student. The internship equipped the student with essential skills and knowledge required in the industry.




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This internship facilitated the application of theoretical knowledge to practical scenarios, enabling the intern to develop a strong foundation in web development and design. Server Fosters Technologies' commitment to providing a conducive learning environment for aspiring web developers and designers is commendable, and the intern expresses gratitude for this enriching experience. This internship marks a significant step in the academic and professional journey of the student, empowering them with practical skills essential for a career in web development and design within the realm of Computer Science and Engineering.



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INTERNSHIP REPORT

Internship Program : PCB Fabrication
Internship Duration : May 2, 2023, to May 22, 2023
Internship Provider : SINRO Robotics
Branch : Electronics and Communication Engineering
Number of Students : 2

Introduction

SINRO Robotics hosted an internship program in PCB (Printed Circuit Board) fabrication, which took place from May 2, 2023, to May 22, 2023. This program engaged two students from the Electronics and Communication Engineering (ECE) discipline. The primary objective was to provide hands-on training and practical experience in PCB fabrication.

Internship Activities

The program commenced with an in-depth exploration of PCBs, covering the principles, design, and manufacturing processes. Students learned to use PCB design software to create electronic schematics and PCB layouts. Practical experience in sourcing electronic components required for PCB assembly. Hands-on training in the PCB fabrication process, including etching, soldering, and quality control. The program included hands-on PCB fabrication projects, allowing students to apply their knowledge in real-world scenarios.

Both interns developed a strong understanding of PCB fabrication, enabling them to design and create functional PCBs. They gained practical experience in using PCB design software for creating electronic schematics and layouts. Understanding how to source electronic components and materials for PCB assembly. Hands-on experience in PCB fabrication processes such as etching and soldering. Engagement in PCB fabrication projects enhanced problem-solving and practical application skills.

Conclusion

The PCB Fabrication internship at SINRO Robotics provided a valuable learning experience for the two ECE students. It equipped them with practical skills and knowledge in PCB fabrication, preparing them for careers in electronics manufacturing, hardware design, and related fields.



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This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in real-world PCB fabrication scenarios. SINRO Robotics' commitment to nurturing the next generation of electronics experts is commendable, and the students express their gratitude for this enriching experience.

The internship program marked an essential step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the field of PCB fabrication and electronics manufacturing.



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INTERNSHIP REPORT

Internship Duration : May 3, 2023, to May 15, 2023

Internship Provider : Sisira Motors

Branch : Mechanical Engineering

Number of Students : 2

Introduction

Sisira Motors hosted a two-week internship program from May 3, 2023, to May 15, 2023. This program involved two students from the Mechanical Engineering discipline. The primary objective was to provide these students with hands-on training and practical experience in the field of Mechanical Engineering, with a focus on automotive systems and maintenance.

Internship Activities

The program began with an overview of automotive systems, including engines, transmissions, suspension, and brakes. Students received training in basic automotive maintenance and repair procedures. Practical sessions involved inspecting vehicles, identifying issues, and recommending appropriate repairs. Emphasis on workplace safety and adherence to safety protocols within the automotive industry. The program included hands-on projects related to automotive maintenance and repair.

Both interns developed a fundamental understanding of automotive systems and maintenance. They gained practical experience in basic automotive maintenance and repair tasks. The ability to inspect vehicles, diagnose issues, and recommend appropriate solutions. Understanding and practicing safety protocols within the automotive industry. Engagement in hands-on automotive projects enhanced problem-solving and practical application skills.

Conclusion

The two-week internship at Sisira Motors provided a valuable learning experience for the two students of Mechanical Engineering. It equipped them with practical skills and knowledge in automotive systems and maintenance, preparing them for careers in the automotive industry.



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This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in real-world automotive maintenance scenarios. Sisira Motors' commitment to nurturing the next generation of mechanical engineers in the automotive field is commendable, and the students express their gratitude for this enriching experience.

The internship program marked an essential step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the dynamic field of Mechanical Engineering, particularly in the context of automotive systems and maintenance.



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INTERNSHIP REPORT

Internship Program : AI & Robotics
Internship Duration : May 3, 2023, to May 17, 2023
Internship Provider : SRAI Smart Solutions Pvt. Ltd.
Branch : Computer Science and Engineering
Number of Students : 3

Introduction

SRAI Smart Solutions Pvt. Ltd. hosted a two-week internship program focused on Artificial Intelligence (AI) and Robotics from May 3, 2023, to May 17, 2023. This program engaged three students from the Computer Science and Engineering (CSE) discipline. The primary objective was to provide hands-on training and practical experience in the fields of AI and robotics.

Internship Activities

The program commenced with an in-depth exploration of AI, covering topics such as machine learning, deep learning, and natural language processing. Students received an introduction to robotics, including robot design, control systems, and programming. Practical sessions involved building and programming robots, gaining valuable experience in robotics. The interns learned about machine learning algorithms and their application in various AI and robotic projects. The program included hands-on projects in both AI and robotics, allowing students to apply their knowledge in real-world scenarios.

All three interns developed a strong understanding of AI and robotics, enabling them to work on projects involving both fields. They gained practical experience in designing and programming robots. Understanding machine learning algorithms and their application in AI and robotic projects. Engagement in AI and robotics projects enhanced problem-solving and practical application skills.



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Conclusion

The AI & Robotics internship at SRAI Smart Solutions Pvt. Ltd. provided an invaluable learning experience for the three CSE students. It equipped them with practical skills and knowledge in AI and robotics, preparing them for careers in fields such as automation, AI development, and robotics engineering.

This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in real-world AI and robotics projects. SRAI Smart Solutions' commitment to nurturing the next generation of AI and robotics experts is commendable, and the students express their gratitude for this enriching experience.

The internship program marked an essential step in their academic and professional journey, enabling them to develop the foundational skills needed to excel in the dynamic and rapidly evolving fields of AI and robotics.



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INTERNSHIP REPORT

Internship Program : Data Science
Internship Duration : May 3, 2023, to May 22, 2023
Internship Provider : Srishti Innovative, Trivandrum
Branch : Computer Science and Engineering
Number of Students : 2

Introduction

Srishti Innovative, located in Trivandrum, hosted an internship program in Data Science from May 3, 2023, to May 22, 2023. Two students from the Computer Science and Engineering (CSE) discipline participated in this program. The focus of the internship was on gaining practical experience in data science techniques and methodologies.

Internship Activities

The program started with a comprehensive introduction to data science, covering topics like data analysis, machine learning, and data visualization. Students were introduced to popular data analysis tools and libraries such as Python. The interns learned about machine learning algorithms, model training, and evaluation. Practical sessions on data visualization using tools like Matplotlib and Seaborn were conducted. The program included hands-on data science projects, allowing students to apply their knowledge in real-world scenarios.

Both interns developed a strong foundation in data science, enabling them to work with data, build models, and derive insights. They gained skills in data cleaning, manipulation, and analysis using data science libraries. Understanding machine learning algorithms, model development, and evaluation techniques. Practical experience in creating meaningful data visualizations for effective data communication. Engagement in data science projects enhanced problem-solving and practical application skills.

Conclusion

The Data Science internship at Srishti Innovative, Trivandrum, offered a valuable learning experience for the two CSE students. It equipped them with practical skills and knowledge in data science, preparing them for careers in data analysis, machine learning, and related fields.



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This internship program bridged the gap between theoretical knowledge and practical application, allowing the interns to apply their skills in real-world data science scenarios. Srishti Innovative commitment to nurturing the next generation of data scientists is commendable, and the students express their gratitude for this enriching experience. The internship program marked an essential step in their academic and professional journey, providing them with the foundational skills needed to excel in the dynamic field of data science.



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INTERNSHIP REPORT

Internship Program : Flutter Development
Internship Duration : May 2, 2023, to May 16, 2023
Internship Provider : WeCode Life
Branch : Computer Science and Engineering
Number of Students : 42

Introduction

WeCode Life hosted a 15-day internship program from May 2, 2023, to May 16, 2023, focusing on Flutter development. Forty-two Computer Science and Engineering students participated in this intensive program. The aim was to equip these students with practical skills and knowledge in Flutter, a popular framework for developing cross-platform mobile applications.

Internship Activities

The program began with in-depth training on the fundamentals of Flutter, including widgets, UI design, and the Dart programming language. Interns worked on real-world app development projects, applying their knowledge to create functional, cross-platform mobile applications. A significant portion of the program was dedicated to understanding and implementing effective UI/UX design principles in Flutter applications. Students learned how to integrate various Flutter packages and plugins to enhance app functionality. The program emphasized testing and debugging techniques to ensure the quality and reliability of the applications developed.

All 42 interns developed a strong foundation in Flutter development, gaining practical experience in creating cross-platform mobile applications. They acquired the ability to design and develop mobile applications with a focus on user-friendly interfaces. The program enhanced their problem-solving skills, crucial for debugging and troubleshooting in app development. Working on real-world projects encouraged collaboration and teamwork among the interns.



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Conclusion

The 15-day Flutter development internship at WeCode Life provided a valuable learning experience for 42 Computer Science and Engineering students. By gaining practical skills and knowledge in Flutter, they are now well-prepared for careers in mobile application development. This program not only bridged the gap between theoretical knowledge and practical application but also allowed the interns to apply their skills in a real-world context. WeCode Life's commitment to nurturing the next generation of developers is commendable, and the students express their gratitude for this enriching experience. The internship program served as a pivotal point in their academic and professional journey, equipping them with the essential skills needed to excel in the ever-evolving field of mobile application development.



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**DEMS:
DISTRICT EMERGENCY MANAGEMENT SYSTEM**

PROJECT REPORT

Submitted by

ANUGRAHA MATHEW (VIT19CS002)

DEON SANI (VIT19CS003)

JENATT P K (VIT19CS004)

VINDUJA S NAIR (VIT19CS013)

To

The APJ Abdul Kalam Technological University, Thiruvananthapuram in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering.



Department Of Computer Science and Engineering

VISAT ENGINEERING COLLEGE

ELANJI- 686665

June, 2023



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ABSTRACT

“District Emergency Management System (DEMS)” is a web application which allows the users to seek help during emergency situation. Disaster management seeks to minimize possible harm from disasters, provide victims with prompt and appropriate aid and achieve effective and quick recovery. Following such calamities, a planned and successful rescue operation is necessary to achieve these goals.

Therefore, several forms of information on the disaster effects are needed to design an efficient and quick relief effort. The criteria for preparing a rescue operation for such natural disasters are examined in this research which also suggests an application-based solution. DEMS is a comprehensive and user-friendly platform created to improve community efforts for disaster preparedness, response, and recovery.

This web application acts as a central node, bringing together people, groups, and governmental organizations to promote effective coordination and collaboration in emergency situations. The web application has tools for preparing and engaging the community. Users can join in and take part in interactive training sessions, workshops, and simulations to advance their knowledge and resilience in the face of disasters. The online program acts as a primary communication hub during a real disaster, allowing first responders, volunteers, and impacted people to quickly organize relief activities.



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CHAPTER 1

INTRODUCTION

Disasters cannot be foretold but the least that can be done is to be ready for them when compared to help distributions carried out by government agencies under normal circumstances. Relief operations following a disaster are very different and difficult, however given the scope and severity of natural catastrophes training through simulations of disaster circumstances is all but impossible. Although it has its own drawbacks technology can help in planning, managing and analyzing the consequences of relief activities for long-term disaster management.

While skilled personnel may be used in crisis management, they must also be given essential information in a timely manner. To ensure proper and effective use reduced response times for relief operations are crucial hence this is necessary. The prompt delivery of aid from in accordance with the medical teams schedules distribution facilities are connected to hospitals. Also, a crucial task in the management of disasters, as a result it is demand that appropriate planning be done in a framework relevant to each country and incorporating various parties involved in a successful and efficient catastrophe management.

In order to manage and assist one another in the event of natural disasters society must be trained government organizations spend money on advertising and other forms of public awareness-raising. Yet they frequently go unnoticed by the public so there is still room for improving government efforts. If suggestions from other facets of society are collected and properly incorporated into planning for preparedness and relief operations. The criteria for preparing a rescue operation for such natural disasters are examined in this research which also suggests an application-based solution.



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CHAPTER 12

FUTURE SCOPE

Efficient communication amongst emergency responders should be made possible by the system, allowing for smooth coordination and information sharing across the many agencies and responders involved in an emergency response operation.

Utilization of resources effectively and efficiently is made possible by the district emergency management system's coordinated response, which can help ensure that resources are employed effectively and appropriately to deal with the incident. Increased safety for the public: The ultimate purpose of the emergency management system is to protect the safety and well-being of the people. By having a system in place, emergency responders can work to minimize the impact of an emergency and keep the public safe. Can create a long-time contact with all these volunteers and can share information about various awareness programs. Provide an easy rescue and support for the victims of the disaster.



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CHAPTER 13

CONCLUSION

A District Emergency Management System should foster cooperation among many stakeholders, including governmental organizations, emergency services, healthcare providers, community organizations, and individuals, in order to successfully accomplish this goal. Clearly defined plans and protocols for emergency response, including communication tactics, evacuation guidelines, and resource allocation, should be in place. To make sure that all stakeholders are ready to respond in an emergency, regular training and drills should be held. The system should also incorporate methods for ongoing improvement, such as feedback and evaluation procedures, in order to pinpoint problem areas and implement the required adjustments to increase the efficiency of the system. The proposed NDRF alert system is effective to society. It helps us to inform about extra help during disaster crisis, so it takes less time in completion of rescue operation. The project will promote the public to contact fast. It is a widespread effect on the economy and ecommerce. It will be keeping together all NSS and NCC volunteers in a single source. And helps people in need. Also, common people can access it and they can contact when they need help at the time of disaster.



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ONLINE SERVICE MANAGEMENT SYSTEM (SKILL KENDRA)

PROJECT REPORT

Submitted by

SANDRA COHEN (VIT19CS009)

SONIL K S (VIT19CS010)

SOUBHAG K (VIT19CS011)

To

The APJ Abdul Kalam Technological University, Thiruvananthapuram in partial fulfillment of the requirements for the award of degree of Bachelor of Technology in Computer Science and Engineering.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISAT ENGINEERING COLLEGE

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JUNE, 2023



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ABSTRACT

Online Service management system called “**SKILL KENDRA**” is a multi-purpose online service provider. The system focused on improving user experience by offering best services such as plumber, electrician, doctor, mason etc. With well-skilled and fully trained labors, we can provide quality services with excellent packages that are designed to offer you great savings.

In this system, everyone can register themselves with their professional skill in which they are expert and can connect everyone with each other, so that they can work from home through this App. In this App everyone can connect. For example – electrician, plumber, vegetable seller, doctors, nurses, technician, pharmacy, businessperson, hotels, vehicle hire, etc. The main motive of this App is to make the local business and local skill person self-dependent. So, that they can create more jobs for neighbor and local people

Our system proposes that if any customer require any services, they can login through our website/application and demand a service. The skilled labors who are related to that and registered in our website is assigned that job. The complete details of the work can be updated through our application. In the end based on work time and utility items provided by us the total fare is calculated. This amount should be paid through our website/application. Our system has a feature for rating of the labor based on his previous work and behavior.



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CHAPTER 1

INTRODUCTION

Online Service management system called “SKILL KENDRA” is a multi-purpose online service provider. The system focused on improving user experience by offering best services such as plumber, electrician, doctor, mason etc. With well-skilled and fully trained labors, we can provide quality services. The main motive of this project is to make the local business and local skill person self-dependent. So, that they can create more jobs for neighbor and local people.



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CHAPTER 11 FUTURE SCOPE

Looking ahead, 'Skill Kendra' aims to expand its horizons by incorporating cutting-edge technologies such as AI-driven service matching, IoT integration for real-time updates, and geographic expansion to reach a wider audience. Additionally, we envision partnerships with government initiatives and vocational training programs to further empower local skill development and employment opportunities. Our future endeavors include the incorporation of more diverse services, personalized user experiences, and an emphasis on sustainability and eco-friendly practices. Through continuous innovation and adaptation, 'Skill Kendra' aspires to become a global platform, enriching lives by fostering entrepreneurship, facilitating access to reliable services, and supporting local economies worldwide.



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CHAPTER 12

CONCLUSION

'Skill Kendra' emerges as a versatile and empowering online service management system, connecting skilled professionals with service seekers in a seamless, user-friendly environment. By leveraging technology, it not only enhances user experience but also facilitates a platform where individuals can showcase their expertise and talents. Through this innovative app, we aspire to foster self-dependence among local businesses and skilled individuals, promoting job creation and economic growth within communities. With a commitment to quality services, fair pricing, and a transparent rating system, 'Skill Kendra' stands as a catalyst in bridging the gap between service providers and customers, ultimately contributing to the socio-economic development of localities.



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VISAT ENGINEERING COLLEGE
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**THE GREEN STORE –HERBAL RECOMMENDATION AND SHOPPING
SITE**

PROJECT REPORT

Submitted

By

JOHN MILAN K J(VIT19CE005)

NANDU PARVATHY T.S (VIT19CS007)

NAVYA K.S(VIT19CS008)

In partial fulfilment for the award of the degree

Of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE ENGINEERING

Est. 2011

VISAT



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(Approved by AICTE & affiliated to APJ Abdul Kalam Technological University)

MUTHOLAPURAM P.O, ELANJI, PIRAVOM

JUNE 2023



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ABSTRACT

Herbal medicine is the use of plants to treat disease and enhance general health and wellbeing. It focuses on creating a fit and healthy life style.

The project, we are proposing a website solely dedicated to herbal medicine where a user can buy herbs or consult an herbalist for personalized recommendations. The user will be able to buy herbs of their choice or based on the remedies suggested by the herbalist.

The Herbal Recommendation and Shopping Site is an innovative online platform designed to cater to the growing demand for natural health products and personalized herbal recommendations.

Through an interactive interface, users communicate with the herbalist and specify their requirements, such as desired effects, existing health conditions, and personal preferences. We provide detailed descriptions, ingredient lists, and user reviews to empower our users to make informed decisions.

Beyond recommendations, our platform also serves as an online marketplace, where they can purchase different category of products like live herbs, herbal products, dry herbs etc. We ensure the authenticity and quality of the items available for purchase. Our site offers a seamless shopping experience, allowing users to conveniently browse, compare, and purchase herbal remedies, supplements, teas, essential oils, and more.

By combining expert guidance, personalized recommendations, and a seamless shopping experience, the Herbal Recommendation and Shopping Site aims to empower individuals in their journey towards natural wellness. Whether seeking solutions for specific health concerns or embracing a holistic lifestyle, this platform serves as a comprehensive resource for those interested in exploring the benefits of herbal remedies and products.

Keywords: herbal recommendation, natural wellness, personalized recommendations, online shopping, holistic approach, artificial intelligence, herbal knowledge, health products, community engagement, transparency, sustainability.



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CHAPTER 1

INTRODUCTION

In recent years, there has been a notable resurgence in the interest and use of herbal medicine as people seek alternative and natural approaches to health and wellness. The goal is to find safe and effective natural remedies that complement conventional approaches to health and well-being.

The Green Store is an herbal shopping and recommendation offers a vast selection of high-quality herbs and herbal products.

In a world where natural remedies and holistic approaches to wellness are gaining popularity, we aim to provide a comprehensive platform for individuals seeking herbal solutions. Our project combines the power of technology with the wisdom of traditional herbal medicine to offer personalized recommendations and a seamless shopping experience.

In today's fast-paced society, people often find it challenging to navigate the vast array of herbal products available in the market. Whether you're looking to boost your immune system, alleviate stress, or improve your sleep, our Herbal Recommendation and Shopping Site will guide you towards the most suitable herbal remedies.

Through an interactive interface, users communicate with the herbalist and specify their requirements, such as desired effects, existing health conditions, and personal preferences. We provide detailed descriptions, ingredient lists, and user reviews to empower our users to make informed decisions.

Beyond recommendations, our platform also serves as an online marketplace, where they can purchase different category of products like live herbs, herbal products, dry herbs etc. We ensure the authenticity and quality of the items available for purchase. Our site offers a seamless shopping experience, allowing users to conveniently browse, compare, and purchase herbal remedies, supplements, teas, essential oils, and more.

We are committed to promoting the responsible use of herbal remedies and ensuring the safety of our users. We strongly encourage users to consult with healthcare professionals before incorporating herbal products into their wellness routines.



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CHAPTER 6

FUTURE SCOPE

There is a lot of potential for herbal recommendation and online shopping sites in the future. Some ideas for the future development of such a site could include:

- Personalization: Use machine learning techniques to recommend herbal products to users based on their individual needs and preferences.
- Integration with wearable technology: Allow users to track their herbal product usage and monitor their health using wearable devices.
- Educational content: Provide users with educational content about herbs and their uses, so that they can make informed decisions about which products to purchase.
- Social features: Allow users to connect with each other and share information and experiences related to herbal products.
- Virtual consultations: Offer virtual consultations with herbalists or other healthcare professionals to help users choose the right products.
- Augmented reality: Use augmented reality technology to allow users to visualize how different herbal products would look in their home or on their body.



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CHAPTER 7 CONCLUSION

The proposed herbal recommendation and shopping site will be effective to the society. Currently the system is web based giving all required services, information and user functions. The project will promote user to purchase and shop fast. It is a widespread effect on the economy and ecommerce. Various future enhancement such as easy ordering, easy payment method and also it is very easy to manage data since it is stored in a online database. With new technologies come better way of doing things



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YATHRA: ONLINE CONCESSION CARD SYSTEM

Submitted by

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VIT19CS001

MATHEWKUTTY SAJI

VIT19CS006

SYAMILY DIVAKARAN

VIT19CS012

To

The APJ Abdul Kalam Technological University, in partial fulfilment of the requirements for the award of degree of Bachelor of Computer Science and Engineering.

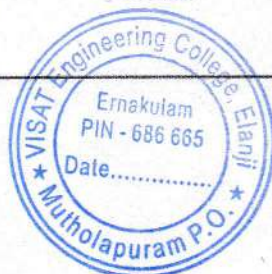


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ABSTRACT

The Kerala State Commission for Child Rights has said that all students who have identity cards from their respective institutions receive student discounts on buses, even if they are not wearing uniforms. Students are having difficulty with the typical time-consuming procedure of registering and renewing bus concession cards. The student must arrive at a certain location and time under the manual method; otherwise, the renewal cannot be accomplished. The online bus concession card registration application is launched in response to the limitations of the manual approach. Students must first register with the application by filling out an online form. The administrator will verify the information provided by the candidate and, if satisfied, will authorize the bus concession card. The applicant can login with their username and password and renews their membership. The money is paid for the renewal using a credit/debit card.



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CHAPTER 1

INTRODUCTION

KSRTC is the lifeline of people, and students are no exceptions. Education without travelling is a rarely seen case. Students can use the bus services by using the concession cards for going to educational institutes. Students have to wait for hours in a queue to get the concerned application form. The procedures in renewing bus concession have put students in a tough spot. So, We are here trying to implement a bus concession system so that a student can apply for new concession card through online. He can also renew his card through this system.

The online concession system is an application that has automated the manual process which has many flaws. The perfection of data that is online concession card system provides to the institute and the government cannot be achieved with the manual proceedings. It aims at making the process efficient, quick and easy going. Every user who takes a pass for the second time needs to fill extra details relating to their respective last pass, this demand can now be satisfied. Many details of the students are retrieved from the college provided database. In case any change required, the student has to notify the college. Thus, the college database kept up-to date.

This system also has limitations such as it requires active internet connection and also the user need to put correct data or else it behaves abnormally.



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CHAPTER 11

FUTURE SCOPE AND CONCLUSION

9.1 FUTURE SCOPE

The online concession card initiative has the ability to present a number of advantages and chances in the future. Some aspects of the project's probable future scope include:

Extension to other modes of transportation: To provide commuters with a smooth travel experience across various transit systems, the online concession card project can be extended to incorporate other forms of public transportation, such as trains and metros.

Integration with other payment systems: The online concession card system may be connected with other payment systems, including mobile wallets or payment gateways, expanding the possibilities for payment for passengers and improving the user experience overall.

Customization and loyalty programs may be added to the system to provide students incentives and discounts depending on their usage and travel habits.

Features of augmented reality: The system may be improved with augmented reality elements, such virtual maps and route planners, giving students a more engaging and dynamic travel experience.

Real-time tracking: By integrating the system with real-time tracking technology, students will be able to follow the whereabouts and arrival timings of buses in real-time, giving them more precise and current information.

Improved data analytics: The system may be improved to offer more thorough data analytics, assisting the depot in examining passenger behavior, travel trends, and demand in order to make knowledgeable judgements about service provision and route planning.

Integration with smart city efforts: To help optimize routes, ease traffic, and boost the general effectiveness of public transportation, the system can be connected with smart city initiatives such as traffic control systems.

In conclusion, the online concession card project has the potential to develop into a thorough and integrated public transportation system that provides students with greater convenience, flexibility, and dependability while also promoting the effective and sustainable management of public transportation resources.

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9.2 CONCLUSION

ONLINE CONCESSION CARD SYSTEM (YATHRA) is mainly helpful for the student who are facing problem with the current manual work of concession card registration and generate as well as getting concession card online and renew online without any manual process. User can find all the concession card generation related information online without going to the bus station. The project allows users to register and generate or update bus pass through application/website and communicate online to manage or create account to perform online transaction. This main project provides a website for students to create an account. Through this website students can apply for a new concession card or they can renew the card before it gets expired. This allows automate this process and reduces the work for both students and KSRTC officers in this process. Also, it improves the transparency and efficiency of this process. The whole process is online and we can prevent or reduce the scams and complaints related to this process.

The limitation of the proposed technique is that an internet connection is required since it is a website and the concession card is granted if the student provides accurate data.



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IoT Based Self Charging E-Rickshaw for Differently Abled Persons

A Project Report

*Submitted to the APJ Abdul Kalam Technological University
in partial fulfillment of requirements for the award of degree*

Bachelor of Technology

In

Electronics and Communication Engineering

by

Sonu Sunil (VIT19EC001)



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VISAT ENGINEERING COLLEGE, ERNAKULAM

KERALA

June 2023



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ABSTRACT

'Solar E-Rickshaw' is a vehicle that makes use of energy produced by sunlight to run and it also hovers on an electric charging port if the condition arises to be not suitable for the solar energy to be consumed. We have designed the roof of the E-Rickshaw in such a way that it is 27° - 30° slanted so as to increase the efficiency of solar power generation and in the trunk part of the Vehicle we designed it to be in a form of curve design to expand the boot space of the E-Rickshaw for battery storage as well as a backup plant for battery. When the sun's rays hit the photovoltaic cell, the electrons get excited and start to flow. It generates an electric current. In here we also did placed Motor just above the tires so as to increase the efficiency of power utilization that is proven by our Euler calculations. Solar E-Rickshaw we make sure that most renewable energy sources are consumed effectively and abundantly making it to run as a clean E-Rickshaw without leaving a blueprint of pollution on our planet Earth. In three Wheel Vehicle Automatic dim and down side Light Technology and led light are kept at both sides of vehicle to increase safety. The Vehicle Add Automatic Stopping System. The Vehicle Controls on and Off using Mobile Application.




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CHAPTER 1

INTRODUCTION

In India 75% vehicle is manufacture by using fossil fuel technology and 20% of vehicle is manufacture by using electrical source of energy. The Main Disadvantage of Fossil Fuel Vehicle is More Air Pollution will be Provide and the daily Recharging cost will very high to compare Normal Electrical Vehicle. The main Limitation of Electrical Source of Normal EV Vehicle is Low Safety to Compare Fossil Fuel Vehicle. I will be illustrating in here a clean and renewable energy run vehicle that's a Solar E-Rickshaw. This is a new technology. Normal electric vehicle costs much more. But if we bring solar hybrid electric vehicle, we can reduce the cost. Air pollution due to fossil fuel can be reduced to some extent. There are also many Electric vehicles around us but the problem surrounding it is overheating resulting in destruction. Therefore, to stop this we have implemented cooling fan technology and fire detection sensor and thus we could prevent any big damage that may happen. And also, the E-Rickshaw won't start if the passenger didn't put their seat belt also, we implemented dim and dawn technology within it to be used at night. Solar E- Rickshaw we make sure that most renewable energy sources are consumed effectively and abundantly making it to run as a clean E-Rickshaw without leaving a blueprint of pollution on our planet Earth. In three Wheel Vehicle Automatic dim and down side Light Technology and led light are kept at both sides of vehicle to increase safety. The Vehicle Add Automatic Stopping System. The Vehicle on and off using Mobile Application.

In this Project we will be discussing the development and advancement EV that is implemented by due diligence of efficiently dealing with the Solar car charging System by executing Solar cells in the roofing system and body framework to charge the source which utilizes Solar network. Solar PV panels are transcending to more effective and are currently effective enough to charge car batteries in a sensible quantity of time. And therefore, we have an effective network of sustainable and tidy power resources. In the modern age, humans have hastened to cling themselves over looking for renewable sources of Energy for day-to-day Life as it is Clean, Virtuous and Cheap. In this paper we will be inclining more on Development of Engineered Solar Vehicle. In this proposed design for a car, we would hover on being dependent on Solar Energy to rotate the motor for generating Electricity as the main source. We have also added many add-up improvements to our Vehicle design like Overheat detection Sensor, Dim and Down Interface,

CHAPTER 5

CONCLUSION

The Ultimate Conclusion we can formulate from this Project is that of the vast expanding Opportunity for harvesting renewable Sources of Energy for everyday usecase implementation just like this project of Solar E-Rickshaw. We must realize the Potential change we could make throughout the world by small implementation of clean, cost effective, Pollution free Solar E-Rickshaw like this one. A one step towards a greater future may lie on Solar E-Rickshaw throughout the World as it Proven to be effective, competitive alternative to Traditional methodologies.



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DESIGN AND FABRICATION OF A SILAGE MAKING MACHINE

A PROJECT REPORT

Submitted by,

ABHIJITH K.G. - VIT19ME001

PRANAV P. - VIT19ME004

SREERAJ C.R. - VIT19ME006

to

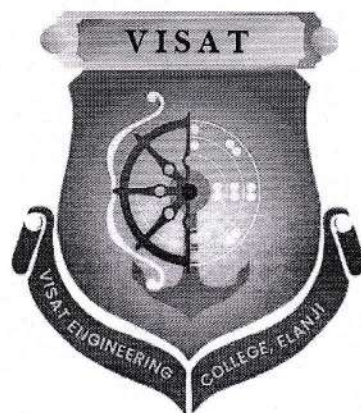
*The APJ Abdul Kalam Technological University
in partial fulfillment of the requirements for the award of the Degree in*

BACHELOR OF TECHNOLOGY

in

MECHANICAL ENGINEERING

Est. 2011



Department of Mechanical Engineering

VISAT ENGINEERING COLLEGE, ELANJI

JUNE 2023



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ABSTRACT

Forged Plants such as Corn (maize), Legumes and Grasses that have been Chopped, Wrapped and Preserved is called silage. This silage Manufacturing Machine targeted for small scale cattle Farmers those who have 5 or 6 cattles. Nowadays silage manufacturing is done in a large scale using expensive machineries, which cannot be afforded by normal indian farmers. It was observed that the bulk silage weight is around 50kg 100kg. The validity of a bulk silage packet is about 1 year. The Entire process is turns into a machine is the project. The average weight of a single silage packet is reduced to 3 kg. A pack of silage can be stored up to 1 year. The technology used in this machine is pneumatic system (A system that uses compressed air as working fluid). A quality check on silage found that silage provides 100% better quality than straw. Straw is dried stalks of grains, used especially as a fodder it is a by product of grains therefore it have less protein content. It was found that there is a shortage of grasses during summer season, to overcome this problem silage is a better option.

Keywords: Silage, Straw, Pneumatic system.




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CHAPTER 1

INTRODUCTION

Cattle farming involves the rearing and management of two types of animals one group for food requirements like milk and another for labour purposes like ploughing, irrigation, etc. Animals which provide milk are called milch/dairy animals. For Example goats, buffalo, cows etc. Silage is pasture grass that has been 'pickled'. It is a method used to preserve the pasture for cows and sheep to eat later when natural pasture isn't good, like in the dry season. The grasses are cut and then fermented to keep as much of the nutrients (such as sugars and proteins) as possible. The fermentation is carried out by microscopic organisms living in the grass. The process must be carried out under acidic conditions (around pH 4-5) in order to keep nutrients and provide a form of food that cows and sheep will like to eat. Fermentation at higher pH results in silage that has a bad taste, and lower amounts of sugars and proteins.

First, the pasture must be cut when the grasses contain their highest nutrient levels. This is usually just before they are fully mature. This is important because all forms of preserved grass, such as hay and silage, will have lower amounts of nutrients than fresh pasture, so everything must be done to make the end product be as nutritious as possible. Removing and keeping out oxygen is a key part of making silage. This is because fermentation has to happen under anaerobic (oxygen-free) conditions, or the correct type of microorganisms won't grow. While oxygen remains, plant enzymes and other bacteria and microorganisms react with the plant sugars and proteins to make energy, reducing the amounts of these nutrients in the grass. If the pH isn't low enough, a different kind of bacteria will start fermenting the silage, producing by-products (like ammonia) that taste bad to cows and sheep.




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CHAPTER 12

CONCLUSION AND FUTURE SCOPE OF THE PROJECT

The silage making machine can be made according to the production availability. Use of friction less oil free compressor can increase the compression. Adjustments in box makes huge change in the volume of silage. Use of Automation and programming can be done in future to reduce manual feeding and packing.

The silage making machine in the present study is easy to build and requires only semi-skilled labour and limited manufacturing facilities to fabricate. The machine can be easily operated and less maintenance is required. The application of electricity for compressor is also provided which makes it easy to work during any conditions. The portability of the machine is such that it can be easily moved due to its less weight.




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DESIGN AND FABRICATION OF VORTEX TUBE CABIN FOR HOUSE HOLD PURPOSES

A PROJECT PRELIMINARY REPORT
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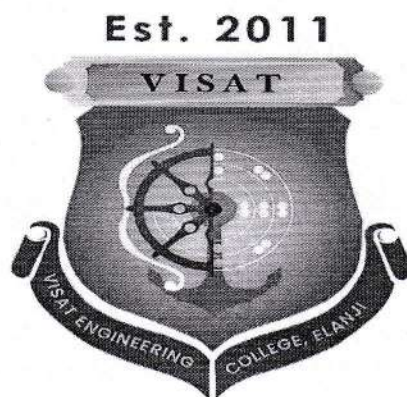
To

*The APJ Abdul Kalam Technological University
in partial fulfillment of the requirements for the award of the Degree in*

BACHELOR OF TECHNOLOGY

in


MECHANICAL ENGINEERING



**Department of Mechanical Engineering
VISAT ENGINEERING COLLEGE
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DECEMBER 2022




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ABSTRACT

Refrigeration is the process of removing heat from an enclosed space or from a substance for the purpose of lowering the temperature. Conventional refrigeration systems uses toxic refrigerants which are harmful for environment. It causes ozone depletion and highly toxic if it is leaked. Refrigeration can be used for household purposes, industrial purposes as well as medical purposes. We are introducing a new technique using vortex tube. A vortex tube is capable of creating a cooling and heating effect at a time with less mechanical moving parts. In this project we are making two cabin setup, hot cabin and cold cabin for household and medical purposes.




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CHAPTER-01

INTRODUCTION

Refrigerator works on the second law of thermodynamics. In this process of refrigeration, unwanted heat is taken from one place and discharged into another. The common refrigerators use refrigerants for his process. A refrigerant is substance used in a heat cycle to transfer heat from one area, and remove it to another. A refrigerant when passed through the food kept in the refrigerator, it absorbs heat from these items and transfers the absorbed heat to the surrounding with less temperature. Hot cabin is a cabinet used for drying purposes.

Refrigeration is an essential thing in our day to day life for preserving food items, medicines etc. But the refrigerants that is used in normal refrigerators are highly toxic and causes ozone depletion. Refrigerants are highly flammable too which can cause explosion.




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CHAPTER 12

CONCLUSION AND FUTURE SCOPE OF THE PROJECT

Vortex tube cabin can be made according to the size of user. By changing the parameters like compressor, cabin size, vortex tube material, cabin material etc. can get the expected results. The main heart of the project is compressor. When the capacity of the compressor is increased it can result in huge change in output. Copper is highly expensive. By changing that material with some design we can make it more cost effective.

Day by day use of gasses like CFC are increasing, which create an ozone layer depletion. Our country has started to follow the trend of green energy. So many number of people have started using electric vehicles day by day. So by a new technique in refrigeration process, it will be a great advancement in future.




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EXPERIMENTAL INVESTIGATION ON SUPER PERFORMANCE

INTERLOCKING PAVER TILES

PROJECT REPORT

Submitted

By

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ABSTRACT

Interlocking tiles are one in which edge of one tile fits under the groove along an edge in the next tile in the same method. The main constituent materials of paving units are cement, sand, coarse aggregate, and water. The main disadvantages of interlocking tiles are sinking of block, fading of colour, cracking of units under heavy loads, unevenness and instability. The major reasons for these disadvantages are impermeability and lack of strength of particular block. To overcome this, we are using aluminium powder for making the concrete porous and also we are using PVC fibres and stainless steel scraps in order to increase the strength of paver unit. Also natural sand is fully replacing with fine recycled aggregate. Through this project we are going to make a number of paver interlocking tiles with different mix proportions. Then we will test or compression, tension and water absorption and abrasion. Also will conduct SEM analysis for finding the microstructural and mineralogical properties of concrete with PVC fibre as a future research perspective. The scope of our project includes, avoiding fading of colour by altering the composition of coatings, reduced runoff interlocking pathways and unsinkable paver surface by removing the gap and by using stabilized sub base aggregates.

Keywords: Interlocking tiles, PVC fibres, Fine recycled aggregates



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CHAPTER 1

INTRODUCTION

1.1 GENERAL

Interlocking tiles are one in which the edge of one tile fits under the groove along an edge in the next tile in the same method. The normally used conventional interlocking concrete paver blocks composed of cement, sand, coarse aggregate, and water. In some case pigments and admixtures are used as per the manufacturer wish. There are some disadvantages in interlocking pavers. That are sinking of block, fading of colour, cracking of units under heavy loads, unevenness and instability. The major reasons for these disadvantages are impermeability and lack of strength of particular block. Here we are using aluminium powder. It will form hydrogen bubbles on the reaction with cement. There by the concrete block become porous and also we are using PVC fibres and stainless steel scraps in order to increase the strength of paver units. Also natural sand is fully replacing with fine recycled aggregate. In this project we are going to make a number of paver interlocking tiles with different mix proportions. Then compression test will carry out by using a universal compression testing machine and tensile strength test will also conduct. Water absorption and abrasion tests are help to find how much the tiles are permeable and resistance to abrasion. Also will conduct SEM analysis for finding the microstructural and mineralogical properties of concrete with PVC fibre as a future research perspective. The scope of our project includes, avoiding fading of colour by altering the composition of coatings, reduced runoff interlocking pathways and unsinkable paver surface by removing the gap and by using stabilized sub base aggregates.

1.2 INTERLOCKING TILES

Interlocking tiles are those whose edges fit in the same way under the grooves on the edges of the following tiles. Interlocking concrete paver blocks are typically made of cement, sand, coarse aggregate, and water.



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1.2.1 History

The word "pavement" is derived from the Latin word "pavimentum," which means "a floor battered or slammed down." It was first used in Old French. Before the word entered English, the meaning of a worn-out floor was no longer relevant.

Even before anatomically modern people appeared, hammered gravel was used as pavement. Romans frequently walked on pavement that was set out in mosaic-like patterns. Prior to being built of concrete, pavers were either composed of clay or genuine stone. In 1973, Canada produced the first concrete pavers in North America. As a result of their success, paving stone manufacturing facilities started to pop up all across the United States, moving westward from the East. The original concrete pavers were known as Holland Stones and measured 4" by 8" (10 cm × 20 cm), exactly like a brick. These devices proved to be extremely sturdy and cost-effective to make.

1.2.2 Types

There are two types of paver blocks:

- a) Concrete Paving Block
- b) Clay Paving Blocks

1.2.2.1 Concrete Paving Block

Standard sizes are used in the mass production of concrete blocks. As a result, they are interchangeable. The two surfaces of a standard concrete block are smooth on one and rough on the other. The concrete paving blocks are best suited for heavy-duty applications since they can withstand braking and shearing pressures and support enormous loads. Different colours can be found in the concrete blocks. Metallic oxides are usually responsible for the colours. The most popular option for laying pavements, driveways, etc. is concrete paving blocks.

1.2.2.2 Clay Paving Blocks

Bricks or cobbles are other names for clay paving blocks. The common shape of these blocks is that of a rectangular brick. Nevertheless, special shapes can be created for particular needs.



A handwritten signature in blue ink, likely of the Principal, located above the printed name.

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Clay pavement blocks can be used on either side, unlike concrete paving blocks. As a result, both sides can be switched. Clay blocks are only offered in their natural colour. Usually, walls or pillars are constructed with these blocks.

1.2.3 Shapes

There are four generic shapes of paver blocks corresponding to the four types of blocks:

- Type A: Paver blocks with plain vertical faces, which do not interlock into each other when paved in any pattern,
- Type B: Paver blocks with alternating plain and curved/corrugated vertical faces, which lock into each other along the curve/corrugated faces, when paved in any pattern,
- Type C: Paver blocks having all faces curved or corrugated, which lock into each other along with all the vertical faces when paved in any pattern and
- Type D: 'L' and 'X' shaped paver blocks that have all faces curved or corrugated and which lock into each other along with all the vertical faces when paved in any pattern.

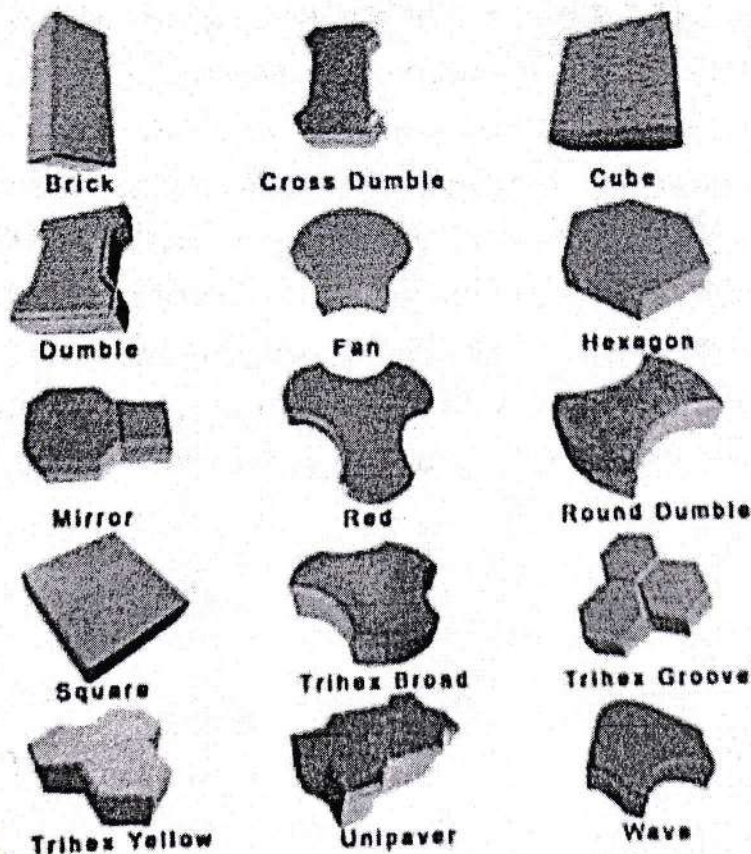


Fig 1.1 Different shapes of interlocking paver tiles



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1.2.4 Advantages

As opposed to concrete or asphalt surfaces, paver blocks do not require specific care. The blocks can be kept clean and vibrant with a quick water wash. Because paver bricks are so strong and well-interlocked, they can easily last for 20 years. Heavy vehicle loads can be supported by paver blocks as well. Paver bricks are particularly adaptable because they come in a variety of sizes, shapes, and colours. These blocks can be utilised in both residential and commercial settings. Slip- and skid-resistant paver bricks are available. Any weather situation can be employed with paver blocks. These paver bricks are incredibly simple to install and do not require any additional tools. The fact that paver blocks are versatile is their main benefit. The most important advantage of paver blocks is that they can be easily replaced. If one of the blocks gets damaged, it can be easily removed and replaced with another one.

1.2.5 Disadvantages

Because interlocking is a distinctive feature of block paving, weed and moss may develop between the spaces between the blocks and quickly spread to the entire area if they are not correctly linked. The right drainage system must be in place before installing interlocking pavers. Sand in the surface joint minimises water infiltration through the joint. Because of this, paver blocks prevent water from draining via their system. Therefore, the homeowner must efficiently direct precipitation that would otherwise fall on the road surface into gutters or drainage channels. A sturdy base is always required for interlocking paver blocks. Block paving may sink as a result of regular traffic loads on inadequate and improperly prepared sub-bases. As a result of being exposed to UV light from the sun, the colour of interlocking. The colour of interlocking paver blocks may deteriorate over time as a result of exposure to UV light (Sunrays). Blocks shift or become unstable as a result of faulty installation techniques or inferior materials.




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1.8 SCOPE

Future scope of the super performance interlocking tiles are as follows

- Being more durable this interlocking paver tiles can be used under moderate traffic roads
- Roads with water logging problem can be made with super performance interlocking tiles where water will penetrate down
- Crack free paver surfaces.
- Unsinkable interlocking roads



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CHAPTER 6

CONCLUSION

This investigation presents various material testing, mix design, experimental study of M50 grade super performance interlocking tile. The percentages of FRCA, aluminium powder and stain less steel scrap are selected by conducting various tests with varying proportions. Partial replacement of construction waste with M sand (50% by the weight of M Sand), PVC fibre 0.8% by the volume of concrete, Aluminium powder 0.35 % by the weight of cement, stainless steel scrap 0.75 % by the volume of concrete posses improved mechanical and physical properties. By the addition of steel scrap and pvc fibres to the mix the compressive strength and split tensile strength of aluminium treated, construction waste replaced block is improved from 45 N/mm² to 51 N/mm² and 9.5 N/mm² to 10 N/mm². 420 martensite steel is good for making super performance interlocking tile which have high Chromium content, since this steel have high corrosion resistance property if there is any chance of galvanic corrosion. The introduction of a gas-forming material from aluminium powder (AP) reacts with the Ca(OH)₂ formed on the hydration of Portland cement to obtained hydrogen gas and a final result to produce micro pores on the concrete. Through which we can penetrate the water through the body of concrete structure and can reduce thermal problems arising in different temperature conditions in concrete by absorbing 50% water. The water absorption test result shows that the tile have a water absorption capacity about 50%. Therefore we can avoid the gap in between the edges of paver units in interlocking pathways by absorbing water. There by we can rectify the rate of moss growth through the gaps and can increase the durability and decrease fading of colour of interlocking path ways. The micro pores are uniformly distributed through out the structure. There by can ensure the even distribution of water and will avoid unequal settlement sinking of pavers, unevenness and instability of path way surface can be reduce by taking these in consideration.

The micro structural and mineralogical properties are identified through SEM analysis. There is a pozzolanic effect exists. The pozzolanic activity of material is the ability to react with calcium hydroxide. Pozzolanic additives increase the density and as a consequence increase the chemical durability of concrete to sulphate ion containing solution.




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Pozzolans are materials with an amorphous siliceous or siliceous and aluminous content that react with calcium hydroxide in the presence of water to form cementitious hydration products (calcium silicate hydrates and calcium silicate aluminate hydrates). By which we can say that there is good strength to satisfy the specific requirements of paver tiles. The SEM images are in different resolution. The recycled construction waste particle is present in the powdered mix which is in the same particle size of fine aggregate. The various range sized particles are contribute to make the structure is layered which have good bonding properties. Thus the micro cracking can be avoided. There is a presence of CH and CSH. This help to achieve specific properties of concrete.

Through the partial replacement of M sand with construction waste can reduce the consumption of natural aggregate and there by can preserve natural resources. All over this super performance interlocking paver tile is a relevant solution for present day scenarios existing in the field interlocking pathway construction and maintenance.



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**DESIGN AND CONSTRUCTION OF WATER SOAKING ROAD USING
PERMEABLE CONCRETE**

PROJECT REPORT

Submitted

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ABSTRACT

The majority of rural road networks are made up of gravel or earthen roads. The issue with gravel roads is that they frequently degrade quickly, particularly during the rainy season, disrupting transportation services and restricting access to markets and health facilities at crucial times. The main issues with rural roads are the short expected lifespan owing to erosion and wear and improper stormwater management. It affects the pavement condition of the road and leads to both structural and pavement defects. In a bid to proffer solutions to the harmful effects of stormwater and reduce the cost of pavement construction in track with sustainability we are proposing an economic full depth permeable concrete pavement.

Previous studies indicate that pervious concrete has lower compressive strength capabilities than conventional concrete and will only support light traffic loadings. This project aims to design a full depth permeable pavement on an earthen road which faces flooding problems. A common permeable pavement consists of three layers: subgrade layer, subbase layer and finally the pervious concrete layer. This project focuses on partially replacing the stone subbase reservoir layer by treated ceramic tile waste which makes the project economic. The effectiveness of our proposed road is examined through various tests. The ceramic tile waste is durable, hard and highly resistant to biological, chemical and physical degradation forces. The properties of these materials make them a good and sustainable choice. Adding a geotextile layer at the top to trap the pollutant in stormwater which only allows water to penetrate. Most of the water penetrates into the bottom subgrade soil and infiltrates into the groundwater. The excess water can be removed by providing underdrainage.

Key Words : Stormwater management, Full depth permeable concrete pavement, subbase layer, ceramic tile waste



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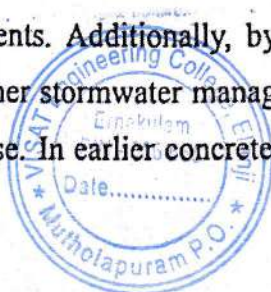
CHAPTER 1

INTRODUCTION

1.1 GENERAL

The majority of rural road networks are made up of gravel or earthen roads. The issue with gravel roads is that they frequently degrade quickly, particularly during the rainy season, disrupting transportation services and restricting access to markets and health facilities at crucial times. The main issues with rural roads are the short expected lifespan owing to erosion and wear, the lack of drainage and watercourse crossings, the harm that dust causes to people's health and the productivity of agriculture, and the harm that rough roads cause to vehicles and the people who use them. The expectation of governments to build and keep roads in a state that allows for all-weather access and regular transportation services has increased among the rural poor. Gravel roads undergo periodic reconstruction or rehabilitation, frequently with little in the way of long-term improvement. The financial resources still aren't enough to cover the constantly rising upkeep as road networks grow, despite the creation of Road Funds that have bolstered funding for road maintenance. Roads that offer year-round unrestricted access and increased options for improved mobility are in demand from rural areas. Practitioners in the road sector have significant difficulty as a result of this.

One existing technique, permeable pavement, can be used in parking lots and light traffic to enhance stormwater management. Rainwater and runoff can pass through porous pavement to the storage layer below and eventually soak into the underlying soil. Because it may lower air temperatures on hot days, treat stormwater quality, restore groundwater supplies, and reduce stormwater volume, permeable pavement is good for the environment. In contrast to traditional surfaces, the increased vacancy ratio allows water to pass through the surface, infiltrate, and evaporate. As a result, a porous pavement surface becomes involved in the hydrological cycle because rain and snowmelt are transferred back into the groundwater through the soil. Furthermore, by removing the need for paving, this pavement technique promotes more efficient land use. The volume of runoff could perhaps be reduced using these pavements. Additionally, by doing away with the requirement for retention ponds, swales, and other stormwater management tools, this pavement technology facilitates more effective land use. In earlier concrete, a paste that forms a thick coating around aggregate particles is



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made by carefully regulating the proportions of water and cementitious ingredients. There is a significant amount of vacuum space in a pervious concrete mixture since it includes little or no sand. It is also referred to as No Fines Concrete for this reason. When the aggregate particles are sufficiently coated and bound together with paste, a network of swiftly draining, extremely permeable gaps is formed. Water permeability is the primary specification criteria for porous concrete rather than strength and continuity of the open pores is the main issue during manufacture. So the porous concrete is more environment friendly due to its high water permeability. Because they decrease runoff volume, permeable pavements are frequently referred to as open-graded friction courses (OGFC).

As an alternative low impact development (LID) and best management practice (BMP) design for the management of stormwater, people today choose their use. The permeable pavement's quality is determined by the design criteria, the tools used during construction, and the upkeep procedures. For the proper operation of the pavement, structural and hydrological study is required during the design and construction of permeable pavements for various types of surface. The pavement's structural design considers the thickness of each layer of the structure as well as how much traffic it can support. The hydrological analysis shows that the goals for stormwater management are achieved since runoff water can be filtered by infiltrating through pavement.

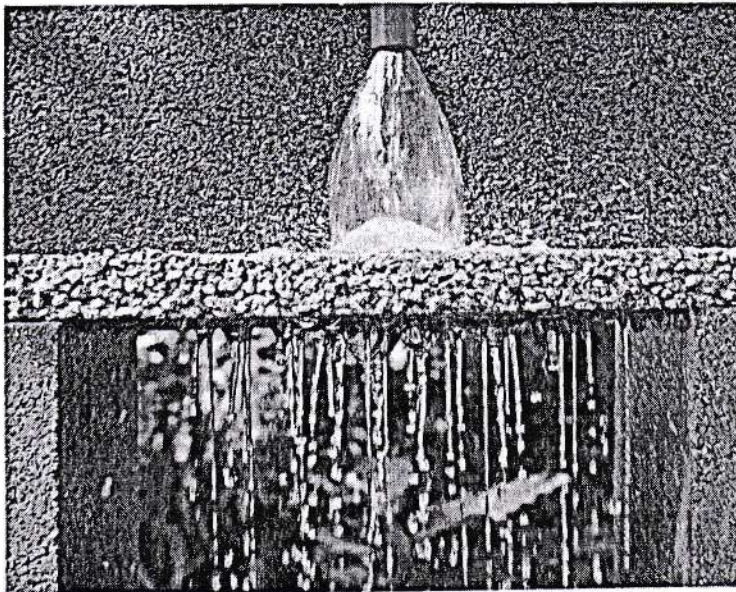


Fig 1.1 Permeable concrete



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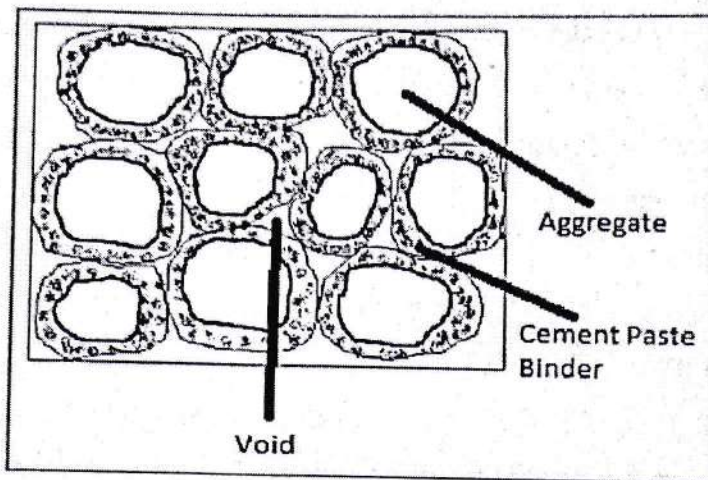


Fig 1.2 Schematic diagram of permeable pavement

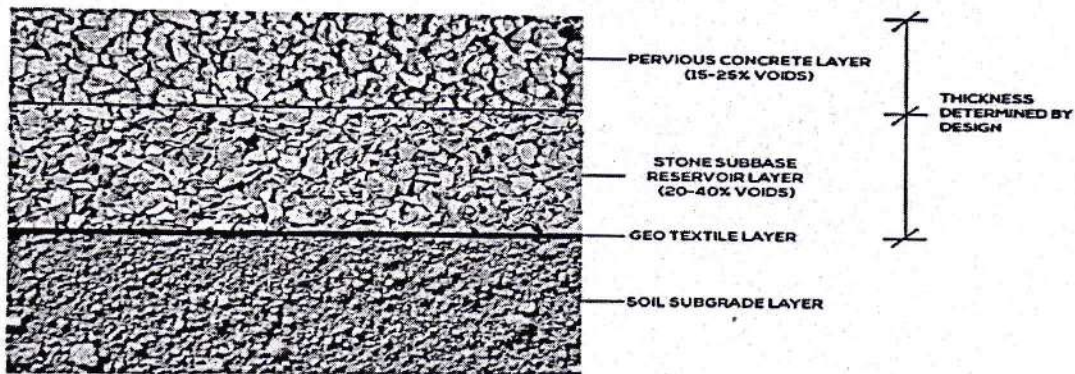


Fig 1.3 Typical section of a pervious concrete pavement

1.2 OBJECTIVES

The primary objective of this project is to analyse and design a permeable pavement by partially replacing the subbase reservoir layer with ceramic tile wastes.

- To perform tests and analyse and compare the performance of both aggregates and ceramic tile wastes as a subbase layer
- To analyse the properties of permeable concrete
- To study the storm water runoff reduction capability of permeable concrete pavement
- To design a full depth permeable concrete pavement for our area



1.3 SCOPE

The future scopes of the permeable pavement are listed below:

- Pervious concrete can be used for many numbers of applications, but its primary usage is in Pavement industry. It is very useful for rural pavements and has a wide scope for further research, which will be a promising roadway material in future to recharge ground water
- Pervious concrete presence in the concrete industry is going to continue to grow. Factors such as the Green Building movement, the Clean Water Act, and the rising price and changes in the asphalt industry will help push its growth, In fact, he believes pervious concrete will eventually become the pavement of choice.
- Prevent clogging of Pavement Surface with Sediment, can acquire a life span of 20 years. Effectively constructed and maintained permeable pavements reduce Urban heat Island effects.



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CHAPTER 6

CONCLUSION

The report presents various material tests, design and experimental verification of the PCP. Through various material tests conducted, it is concluded that this subbase layer should be placed with half aggregates and half ceramic tile waste which gives about 45% porosity and the surface layer should have 6mm aggregates which provides 21% porosity. During the construction process the subgrade layer should be compacted to 90% of its dry density.

The design results show that 150mm thick pavement slab and 340mm subbase performs well in case of low volume traffic and runoff capacity. Also through the field test we can conclude that the infiltration rate of pavement is greater than that of the subgrade layer. Since we can adopt this PCP for the water logged areas in this locality.

This work also demonstrated the step by step process of construction of pervious concrete stretch. The construction methods demonstrated in this project work were labour intensive, which small developers can comfortably use to implement without relying on any mechanically sophisticated machinery or tools. The strength gained in laboratory studies encouraged the application of this material in the waterlogged area for draining out water from the pavement immediately. The mix design for concreting is entirely based on porosity and compressive strength which is as per IRC:44-2017.

Due to improper bonding of cement matrix and aggregates, some sort of ravelling is found on the surface of the pavement. Proper inspection and maintenance should be done to prevent clogging of the pavement and to enhance its life. The clogging of the PCP can be avoided by vacuum cleaning the pavement at specific intervals. But it is not very appropriate for rural roads. Research is going on to fill this gap.

In general the hydraulic performance and durability of PCP are both determined by its mix design, construction practice, service environment and maintenance activities. Knowledge gaps in many of these aspects need to be narrowed so as to concurrently optimize both hydraulic performance and durability of the PCP. New technologies are expected to be further developed in enhancing the environmental benefits of PCPs without significantly increasing its maintenance requirements or sacrificing its durability or mechanical properties.



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**EXPERIMENTAL INVESTIGATION ON PROPERTIES OF MODIFIED
LATERITE CEMENT BRICKS**

PROJECT REPORT

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ABSTRACT

Laterite-cement bricks are used in construction because of its cooling nature and mechanical stability. Laterite soils are mostly available in tropical regions and can be used for manufacturing of durable bricks. Laterite content improves cooling nature and maintains its bonding. Conversion of solid block into hollow brick which helps to reduce the self-weight of brick and provides easiness in construction. Light weight bricks can be used for any types of construction which requires partition. The content of cement and fly ash in bricks can improve the compressive strength compared to conventional bricks. Water absorption of laterite cement bricks are lower than normal bricks. This study mainly focuses on modifying laterite- cement bricks by partial replacement of cement with fly ash and the solid block converted to hollow brick. The mechanical, durability and thermal properties of bricks with varying proportion of laterite soil, cement and fly ash content need to be evaluated for getting optimum mix. This will result in effective utilization of natural resources leading to sustainability and human comfort.

Key Words: Laterite cement hollow bricks, thermal efficiency, light weight bricks.



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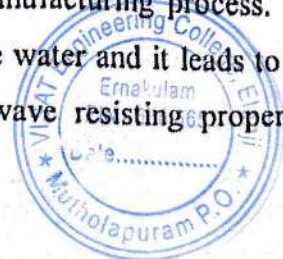
CHAPTER 1

INTRODUCTION

1.1 GENERAL

Laterite is both a soil and a rock type rich in iron and aluminium and is commonly considered to have formed in hot and wet tropical areas. Nearly all laterites are of rusty-red coloration, because of high iron oxide content. They develop by intensive and prolonged weathering of the underlying parent rock. Historically, laterite was cut into brick-like shapes and used in monument-building. It is widely used as the laterite stones are easy to mine. But the problem is that it becomes harder once drier in the air. The strength of laterite brick is about 5 to 10 times lesser than that of concrete bricks. We can't use laterite to create high rise buildings or building more than 3 stories. Laterite homes are easily destroyed when earthquakes happen. Also, they have inferior interlocking and prone to breakage while comparing with concrete bricks. Laterite bricks can't be reinforced by steel while concrete bricks can be. All these make concrete constructions much more earthquake-proof than laterite constructions. The laterite stones have high absorption when it comes to water. Laterite stones are also highly acidic in nature and are susceptible to leaching. This leads to corrosion of other building materials such as paint and needs. Hence, we should handle with care. Lack of availability; these bricks are not available in desert regions. Therefore, you have to import these bricks from elsewhere which increases the cost of these bricks. Also, be aware that the finish of the walls with laterites is ancient and rugged. This may not be aesthetically pleasing for everyone.

Cement bricks is a mixture of cement and aggregate, usually sand, formed in moulds and cured. Certain mineral colours are added to produce a concrete brick resembling clay. Concrete bricks are economical and the raw materials for the manufacturing are easily available. Concrete blocks are hard and durable than laterite bricks. Different orientations and sizes give different surface textures. Concrete blocks produces less environmental pollution during manufacturing process. But it also have some disadvantages, like the bricks absorbs more water and it leads to decrease in tensile strength. The brick was not better in seismic wave resisting property. Cement content brick absorbs heat from



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temperature and the expansion and shrinkage process occurs. The shrinkage property which develops cracks on the walls. Durability of cement bricks in high hardened condition is much lesser than conventional brick due to this shrinkage in bricks.

Here we are modifying the manufacturing brick into hollow bricks without varying the property of the same brick. Manufacturing bricks are constructed by compressing the mixture of cement and laterite soil in certain proportions. The laterite content in manufacturing brick provides cooled surface condition and cement content which provide high strength in brick. The compression force of 35 N/mm² decreases the void space inside the brick and also the water absorption rate.

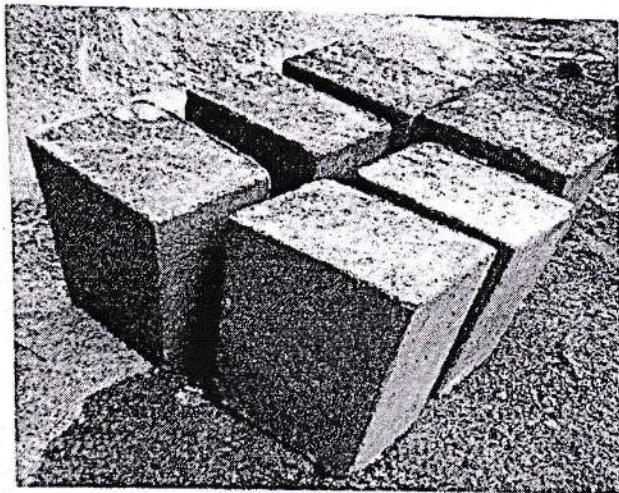


Fig.1 Manufacturing bricks

Manufacturing bricks are showed in figure 1 and the same brick is converting into hollow bricks in our project. It has higher compressive strength and sharp edges with high durability. Reddish brown in colour appears in surfaces and smooth surfaces achieves perfect finishing. The brick has available in two different sizes (300x190x190mm) and (300x190x150mm). Dead weight of the brick has higher because of the compression and lesser void ratio. Therefore it is not easy to work on it and it consumes more time in construction.

Modifying the manufacturing brick into hollow brick for reducing the self-weight, improving thermal efficiency and easiness in construction. Utilise local materials and helping society to sustainable outcomes. Admixtures added to the raw mixture on construction time to improve its property and expecting a high quality brick with self-cooling nature, light weight and sustainable.



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1.2 OBJECTIVES

The primary objective of this project is to modifying and invention of new venture in construction.

- To study the effect of flyash on modified hollow block.
- To study the strength parameters of modified hollow block.
- To study the effective hollow size in block and better outcome.
- To study the scope of filling thermal insulating material on cavities of block.

1.3 SCOPE

The future scopes of the laterite cement hollow bricks are listed below:

- Launching new approaches in manufacturing non fired bricks
- From the economical point of view, manufacturing cost will be less than that of conventional bricks. Low cost and light weight property has been helpful to common society and used in partition of multistoreyed buildings.
- It has smooth finish surface, therefore plastering cost can be reduced and it provides cooling atmosphere.
- Reduce the construction time of work by easiness in handling. Maintains thermal comfort and reduce energy consumption in hardened climatic conditions



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CHAPTER 5

CONCLUSION

In this present study with the stipulated time and laboratory setup an innovative modified hollow block has been developed successfully with flyash as partial replacement of cement which minimize the use of cement. It was concluded that, the result which came after carrying out the test found successful. The effect of replacement of flyash for cement in proportion such as 5%, 10% and 15% are valuated.

From the test results, it is proved that replacement of flyash about 5% is effective and further more addition of flyash percentage considerably decreases the strength parameters. This project is substantial because, by flyash as a partial replacement of cement. It could minimize the usage of cement and thereby reduce the cost of manufacturing. It resolves arising issues of waste disposal, which is the major factor behind public health problems.

Moreover it will improve the durability of laterite block which can be helpful for construction of partition wall and light load bearing structures. Light weight property of modified hollow block improves easiness in construction. Thermal insulating material incorporated in cavities which helps to improve the thermal insulation properties. Also it reduces the energy consumption in buildings.

Common peoples can afford the price of product because of low cost. Modified hollow block are able to adapt the intense heat of atmosphere to some extent by the use of laterite soil as major component.



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