SCRIPT NG PINAS

**AQUARIUM**

Good morning, everyone. We are (PANGALAN NATIN) and today, we are here to present our research titled **'Advanced Aquarium Care: A Mini-Computer Device Driven Solution for Real-Time pH Temperature Monitoring and Automated Feeding**.' This project was conducted in collaboration with my co-researchers under the guidance of our research adviser, Sir Ricardo Agustin.

**Introduction**

Let's begin with the introduction. Managing an aquarium is often labor-intensive, requiring constant monitoring of environmental conditions such as pH levels and temperature, as well as consistent feeding schedules. These manual processes are not only time-consuming but also prone to errors, leading to suboptimal conditions for aquatic life. My research aims to address these issues through a comprehensive system utilizing Raspberry Pi technology to automate and streamline aquarium management.

**Statement of the Problem**

The main problem our research addresses is the lack of an integrated automated system for monitoring and managing aquarium parameters. Current manual methods are inconsistent, prone to human error, and can delay necessary interventions, impacting the health of aquatic organisms. Specifically, traditional methods struggle with inconsistent data collection, inefficient response to parameter deviations, and challenges in automated feeding. Our proposed solution integrates real-time monitoring and automation to resolve these issues.

**Objectives of the Study**

The general objective of this study is to develop a Raspberry Pi-based system for real-time monitoring and automation of key aquarium parameters like pH levels, temperature, and feeding schedules.

Our specific objectives include:

1. Implementing real-time monitoring with continuous data collection and real-time alerts.
2. Automating environmental controls, such as adjusting pH and temperature.
3. Establishing an automated feeding system.
4. Enhancing data management through logging and analysis.
5. Designing a unified, user-friendly interface for system management.

**Scope and Limitations**

The scope of this study covers the development, implementation, and evaluation of our system for general aquarium care.

Limitations include:

* Sensor accuracy and the need for regular calibration.
* Initial setup costs and potential complexity in system integration.
* Environmental variability and control precision, which may require further refinement for specific aquarium conditions.

**Significance of the Study**

The significance of this study lies in its potential to revolutionize aquarium management by automating critical processes, improving accuracy, and reducing manual labor. This system not only enhances the care and welfare of aquatic life but also offers a scalable model for environmental management solutions using mini-computer devices like the Raspberry Pi.

**Methodology**

Our research methodology involves the design and implementation of a system that integrates high-precision sensors with a Raspberry Pi for real-time data collection. The system automates feeding schedules and environmental controls based on the monitored data. We conducted multiple trials to evaluate the system's performance in maintaining optimal conditions for various aquatic species.

**Conclusion and Recommendations**

In conclusion, our research demonstrates that a Raspberry Pi-based system can significantly improve the management of aquarium parameters, reducing manual intervention and enhancing the health of aquatic life. We recommend further studies to refine sensor calibration and explore additional automation features, such as water filtration control.

**QR**

Good morning, everyone. I am [PANGALAN NATIN], and today we will be presenting our research titled '**Secure Boot Authentication: Implementing a QR-Based Access Control System for Computer Startup**.'

**Introduction**

In today’s digital age, securing computer systems from unauthorized access is critical. Traditional security methods, such as Secure Boot, protect the system only after it has started. However, there is a significant gap in security before the operating system boots up. Our research addresses this issue by introducing a QR code-based pre-boot authentication system that ensures the computer will not power on until a valid QR code is authenticated. This method provides an additional layer of security by preventing any unauthorized access right from the startup.

**Statement of the Problem**

The main problem our research tackles is the lack of pre-boot authentication mechanisms. Traditional methods allow the computer to power on without verifying the user’s identity, which poses a security risk. Our proposed solution introduces a QR-based authentication system that requires user verification before the system boots, thereby preventing unauthorized users from accessing or tampering with the computer even before the operating system loads.

**Objectives of the Study**

Our general objective is to enhance computer security by implementing a QR code-based pre-boot authentication system. This system ensures that only users with valid QR codes can initiate the computer's startup process.

The specific objectives are:

1. To design and implement a QR code-based authentication system integrated with the computer’s hardware and startup process.
2. To evaluate the effectiveness of this system in preventing unauthorized access.
3. To assess the impact of this authentication system on user experience and identify potential improvements.

**Scope and Limitation**

The scope of this study covers the design, implementation, and evaluation of the QR code-based pre-boot authentication system. We will focus on integrating the system with the computer’s hardware and firmware to ensure secure access control.

Limitations include:

* Hardware Compatibility: The system’s effectiveness depends on compatibility with various hardware configurations, which may limit its applicability across different devices.
* Security Testing Scope: The study will be conducted in a controlled environment, which may not fully reflect real-world scenarios.
* User Experience Variability: The user experience evaluation is based on a limited sample and may not cover all possible user interactions.

**Significance of the Study**

This study is significant because it introduces a new approach to pre-boot authentication, filling a crucial gap in current security protocols. By requiring QR code verification before the computer powers on, we can greatly reduce the risk of unauthorized access and potential security breaches. This system is particularly beneficial for environments with high-security requirements, contributing to overall system integrity and data protection.

**Methodology**

Our methodology involves designing and implementing a QR code-based authentication system that integrates with the computer’s startup process. We tested the system’s effectiveness in preventing unauthorized access and evaluated its impact on user experience. The results show a significant improvement in pre-boot security compared to traditional methods.

**Conclusion and Recommendations**

In conclusion, our research demonstrates that a QR code-based pre-boot authentication system effectively enhances computer security by preventing unauthorized access right from the startup. We recommend further research to address hardware compatibility and explore additional security features, such as integrating biometric authentication for even greater security.

**ROBOT**

Good morning, I am [NAME NATIN], and today we will be presenting our research titled **'Innovative Underwater Recovery: A Mini-Computer Powered Submersible Robot for Locating and Retrieving Lost Objects.**'

**Introduction**

Recovering lost objects from underwater environments is a challenging task due to the complexities of aquatic conditions and the limitations of traditional methods. Existing approaches often involve large, expensive equipment or human divers who face hazards and limitations in depth and visibility. Our research aims to address these challenges by developing a mini-computer powered submersible robot that integrates advanced navigation and retrieval capabilities. This robot is designed to enhance safety, reduce costs, and improve the efficiency of underwater recovery operations.

**Statement of the Problem**

The main problem we aim to solve is the inefficiency and high risk associated with traditional underwater recovery methods. Large equipment can be cumbersome and costly, while human divers are limited by physical constraints and safety risks. Our proposed solution is a compact and effective submersible robot that can autonomously locate and retrieve lost objects, overcoming these limitations and providing a safer, more efficient alternative.

**Objectives of the Study**

Our general objective is to develop a mini-computer powered submersible robot that enhances underwater recovery operations by providing precise navigation and efficient retrieval capabilities.

The specific objectives are:

1. To design and develop a robot capable of precise navigation and autonomous operation in underwater environments.
2. To evaluate the robot’s performance in various underwater conditions and compare its effectiveness with traditional methods.
3. To analyze the safety and cost efficiency of the robot compared to conventional recovery techniques.

**Scope and Limitation**

The scope of this study includes the design, development, and evaluation of the submersible robot, focusing on its integration with mini-computer technology to improve navigation, object detection, and retrieval capabilities. The research will test the robot’s performance in different underwater environments and compare it with traditional recovery methods.

Limitations include:

* Environmental Conditions: Testing will be conducted in controlled or specific environments that may not fully represent all real-world conditions, such as extreme depths or varying water qualities.
* Hardware Constraints: The performance of the robot may be limited by the capabilities of the mini-computer and other hardware components used in its construction.
* User Testing Scope: Evaluation of user experience and operational safety will involve a limited number of test operators, potentially affecting the generalizability of findings.

**Significance of the Study**

This study is significant as it introduces a novel approach to underwater recovery using a mini-computer powered submersible robot. By improving precision, safety, and cost-effectiveness, this robot has the potential to transform current recovery practices. The findings of this research could benefit various sectors such as salvage operations, environmental monitoring, and search and rescue missions, providing a more reliable and accessible tool for underwater recovery.

**Methodology**

Our research methodology involves designing and developing a submersible robot equipped with a mini-computer for precise navigation and object retrieval. The robot is tested in various underwater conditions to assess its performance. We then compare its effectiveness with traditional recovery methods in terms of accuracy, safety, and cost efficiency.

**Conclusion and Recommendations**

In conclusion, our research demonstrates that a mini-computer powered submersible robot can significantly enhance underwater recovery operations by offering a safer and more efficient alternative to traditional methods. We recommend further research to explore enhancements such as deeper operational capabilities and integration with other advanced technologies like sonar for improved object detection.

**LUMINOL**

Good morning, everyone. My name is [PANGALAN NATEN], and today we will be presenting our research titled **'P.L.A.N.E.T.: Portable Luminol Analysis for Navigating Evidence Trails.'**

**Introduction**

Crime scene investigations play a crucial role in the criminal justice system, where the timely and accurate detection of biological evidence such as blood can significantly impact case outcomes. While luminol is a well-known reagent for detecting hidden traces of blood, its traditional application requires specialized equipment and training, making it inaccessible in many situations. Our project, **P.L.A.N.E.T.**, aims to address these limitations by developing a portable luminol testing tool that enables law enforcement officers to conduct on-site luminol tests quickly and effectively, improving the efficiency of crime scene investigations.

**Statement of the Problem**

The **main problem** this research addresses is the lack of accessible, efficient, and user-friendly tools for conducting luminol tests in the field. Traditional methods require extensive training and complex equipment, often resulting in delays in evidence detection and analysis. This issue is especially pronounced in rural or underserved areas where access to advanced forensic technology is limited. Our solution, P.L.A.N.E.T., aims to simplify and expedite the luminol testing process, ensuring that critical evidence is detected and preserved at the scene.

**Objectives of the Study**

The **general objective** of this study is to create a portable luminol analysis tool that empowers law enforcement officers to quickly and effectively detect biological evidence during crime scene investigations.

Our **specific objectives** are:

1. To design and develop a compact, user-friendly luminol testing device with real-time data analysis capabilities.
2. To provide training materials and support to ensure effective use of the device by law enforcement personnel.
3. To conduct field tests to evaluate the tool's effectiveness under various conditions and gather feedback for improvement.
4. To implement a data collection system for logging luminol test results, environmental conditions, and user feedback.

**Scope and Limitation**

The **scope** of this study includes the design, development, and evaluation of the P.L.A.N.E.T. tool, targeting its use by law enforcement officers and first responders. It covers the tool's functionality for applying luminol, capturing results, and logging data.

**Limitations** include:

* **Chemical Limitations:** The effectiveness of luminol can be influenced by environmental factors such as light, surface materials, and the age of the evidence.
* **Training Requirements:** Basic training will still be necessary to ensure proper use and interpretation of the tool.
* **Technology Constraints:** The tool's performance may be affected by the limitations of the Raspberry Pi and other hardware components, particularly in challenging field conditions.

**Significance of the Study**

This study is significant as it addresses the need for accessible forensic tools, particularly in rural and underserved areas. The P.L.A.N.E.T. tool enhances the capability of law enforcement to detect biological evidence accurately and efficiently in the field, contributing to more effective investigations. The project's impact extends beyond immediate use; by providing comprehensive training materials and a user-friendly design, it empowers officers with advanced forensic methods, ultimately supporting more successful case resolutions and a stronger criminal justice system.

**Methodology**

Our methodology involves designing and developing a portable luminol testing tool integrated with user-friendly controls and real-time data analysis capabilities. The tool will be tested in various crime scene scenarios to assess its effectiveness. Feedback from law enforcement officers will be collected to refine the tool’s design and usability.

**Conclusion and Recommendations**

In **conclusion,** our research demonstrates that P.L.A.N.E.T. can significantly improve the efficiency and accessibility of luminol testing in crime scene investigations. We recommend further research to explore the tool's application under extreme conditions and to integrate additional forensic functionalities, such as digital imaging and environmental sensors.

**IMAGE**

Good morning, everyone. My name is [PANGALAN], and today we will be presenting our research titled **'I.M.A.G.E.: Intelligent Medical Analysis and Guidance Engine.**'

**Introduction**

In the rapidly evolving field of healthcare, technology plays a crucial role in enhancing diagnostic accuracy and improving patient outcomes. However, the sheer volume of medical images generated daily can overwhelm healthcare providers. The I.M.A.G.E. project aims to address this challenge by developing an intelligent system that uses artificial intelligence and machine learning to assist healthcare professionals in analyzing medical images. This tool not only streamlines the diagnostic process but also helps identify patterns and abnormalities that may be overlooked, ultimately supporting better decision-making in clinical settings.

**Statement of the Problem**

The main problem our research addresses is the inefficiency and potential inaccuracies in interpreting medical images due to the overwhelming volume of data and complexity of analysis. This can lead to delayed diagnoses, inconsistent patient care, and increased workloads for healthcare professionals. There is a pressing need for an intelligent system that can aid in analyzing medical images efficiently and accurately, helping healthcare providers make timely and informed decisions.

**Objectives of the Study**

Our general objective is to develop an intelligent medical imaging analysis tool, I.M.A.G.E., which leverages AI and machine learning to enhance diagnostic accuracy and patient outcomes.

Our specific objectives are:

1. To design and implement machine learning algorithms capable of analyzing various types of medical images such as X-rays, MRIs, and CT scans.
2. To create a user-friendly interface that allows healthcare professionals to interact with the system and receive actionable insights.
3. To integrate the I.M.A.G.E. system into existing clinical workflows seamlessly.
4. To validate and test the system's accuracy and reliability against expert interpretations.
5. To provide training and educational resources for healthcare professionals to effectively utilize the tool.

**Scope and Limitation**

The scope of this study includes the development and evaluation of the I.M.A.G.E. system, focusing on its application for analyzing a range of medical images. The project aims to support healthcare professionals, particularly radiologists and clinicians, in interpreting complex imaging data.

Limitations include:

* Data Quality: The accuracy of the system depends on the quality of the input images, with poor-quality images potentially leading to incorrect analyses.
* Algorithm Generalization: Extensive training on diverse datasets is required to ensure the system's effectiveness across different patient populations and conditions.
* Integration Challenges: Implementing the system into existing clinical workflows may encounter resistance and require user adaptation.
* Regulatory Compliance: The project must comply with healthcare regulations, which may complicate deployment and implementation.

**Significance of the Study**

This study is significant as it introduces an intelligent tool to support healthcare professionals in analyzing medical images, thereby improving diagnostic accuracy and efficiency. By reducing the cognitive load on clinicians and providing timely insights, the I.M.A.G.E. system can enhance patient care and streamline clinical workflows. Additionally, this tool can be particularly beneficial in resource-limited settings, offering advanced diagnostic support where it is most needed. The project also contributes to the broader adoption of AI in healthcare, paving the way for future advancements in medical technology.

**Methodology**

Our methodology involves designing and developing a machine learning-based system for medical image analysis. We will train the system on a diverse dataset of medical images and evaluate its performance against expert interpretations. We will also gather feedback from healthcare professionals to refine the user interface and ensure seamless integration into clinical workflows.

**Conclusion and Recommendations**

In conclusion, our research demonstrates that the I.M.A.G.E. system has the potential to significantly improve the efficiency and accuracy of medical image analysis, supporting better diagnostic outcomes. We recommend further research to refine the algorithms and explore additional features, such as integrating electronic health records for a more comprehensive diagnostic tool.