

Coding/Programming Expert Category

(25 - 35 Years Old)



(Intelligent Public Safety Surveillance System)

The Premium Supporters/Partners of STEM Festival Port Harcourt 2024



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Summary for Intelligent Public Safety Surveillance System: Coding Expert Category Competition

This document outlines the competition rules for the STEM Festival Coding Expert Category, focusing on the development of an "Intelligent Public Safety Surveillance System." Participants in this category, aged 25-35 years, are tasked with designing and implementing a sophisticated application that enhances urban safety through real-time surveillance, anomaly detection, and emergency response.

Key Points:

- Participants must develop a comprehensive surveillance system for urban safety.
- The system should utilize AI and machine learning for real-time monitoring and threat detection.
- Key features include facial recognition, anomaly detection, and emergency response coordination.
- Creativity, functionality, and user experience will be key criteria for judging.

Ethics Code for Teams:

- Participating and learning are more important than winning the prizes.
- Teams are encouraged to learn and master new skills while having fun together.
- It is not whether you win or lose, but how much you learn that counts.
- Join the global community of inventors and practical problem-solvers across Africa and the globe at STEM Festival.

STEM Festival Team

Safe Cities

Coding Expert Category (25 - 35 years old)

Category Focus: **Intelligent Public Safety Surveillance System**

Introduction:

Welcome to the Coding Expert Category of the STEM Festival, where young developers are encouraged to innovate and create solutions for real-world challenges. In this competition, participants will address the need for enhanced urban safety by designing an intelligent surveillance system that leverages cutting-edge technology to monitor public areas, detect threats, and coordinate emergency responses.

Mission:

The mission for participants in the Coding Expert Category is to develop a robust Intelligent Public Safety Surveillance System that provides real-time monitoring, threat detection, and emergency response coordination to enhance public safety in urban environments.

Tasks:

1. System Design and User Interface:

- Design a user-friendly interface for the surveillance system, ensuring ease of navigation and accessibility for security personnel.
- Implement intuitive controls and visual feedback to facilitate seamless interaction with the system's features.

2. Real-Time Monitoring and Threat Detection:

- Develop functionality for real-time monitoring using surveillance cameras and sensors.
- Implement AI-driven algorithms for facial recognition, anomaly detection, and threat assessment.

3. Emergency Response Coordination:

- Integrate features for coordinating with emergency services, including real-time alerts and communication tools.
- Develop mechanisms for automatic threat escalation and response based on detected anomalies.

4. Data Security and Privacy:

- Ensure robust data security measures to protect surveillance data.
- Implement privacy safeguards to comply with relevant laws and regulations regarding surveillance and data protection.

Sample Image



Design Tools/Programming Software (Your Free Choice):

- ✓ Participants can choose from a range of programming languages and frameworks, such as:
 - Python (with libraries like OpenCV and TensorFlow for AI and ML)
 - JavaScript (for web-based interfaces)
 - C++ (for performance-critical components)
 - Various cloud platforms (e.g., AWS, Azure) for backend services and data storage
 - Database Systems: SQL, NoSQL
 - Development Tools: Git, Docker, Kubernetes

Earning Points/Scoring:

Section 1: System Design and User Interface (25 points)

| Criteria | Description | Points Awarded (Max) |
|-----------------------------|---|----------------------|
| Usability and Visual Appeal | Intuitiveness and attractiveness of the system interface design, ensuring ease of use and engaging user experience. | 25 |

Section 2: Real-Time Monitoring and Threat Detection (25 points)

| Criteria | Description | Points Awarded (Max) |
|-----------------------------|--|----------------------|
| Accuracy and Responsiveness | Effectiveness of real-time monitoring and accuracy of threat detection algorithms. | 25 |

Section 3: Emergency Response Coordination (20 points)

| Criteria | Description | Points Awarded (Max) |
|----------------------------|--|----------------------|
| Efficiency and Integration | Effectiveness of emergency response coordination features and integration with services. | 20 |

Section 4: Data Security and Privacy (15 points)

| Criteria | Description | Points Awarded (Max) |
|-------------------------|---|----------------------|
| Security and Compliance | Robustness of data security measures and compliance with privacy regulations. | 15 |

Section 5: Overall Functionality (15 points)

| Criteria | Description | Points Awarded (Max) |
|---------------------------|---|----------------------|
| Creativity and Innovation | Overall functionality, creativity, and innovation demonstrated in the system design and features. | 15 |

Bonus Points (up to 5 points)

| Criteria | Description | Points Awarded (Max) |
|-------------------------|---|----------------------|
| Exceptional Performance | Bonus points awarded for exceptional performance, unique functionalities, or innovative solutions beyond the core requirements. | Up to 5 |

Overall Comments and Conclusion:

Participants are encouraged to prioritize user experience, functionality, and innovation in their Intelligent Public Safety Surveillance System designs. Addressing real-world challenges related to urban safety and leveraging Expert technologies will be essential for creating impactful solutions. **Best of luck to all participants in developing their Intelligent Public Safety Surveillance Systems!**