

Coding Senior Category

(14 - 19 Years Old)



(Smart Home Security App)

The Premium Supporters/Partners of STEM Festival Port Harcourt 2024



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Summary for Smart Home Security App: Coding Senior Category Competition

This document outlines the competition rules for the STEM Festival Senior Category, focusing on the development of a **"Smart Home Security App."** Participants in this category, aged 14-19 years, are tasked with designing and implementing a mobile or web application that enables users to remotely monitor and control their home security systems, receive real-time alerts, and integrate with smart home devices. The competition provides an opportunity for young innovators to showcase their programming skills and creativity in addressing real-world challenges related to home security and automation.

Key Points:

- Participants must develop a mobile or web app for remote home security monitoring and control.
- The app should offer features such as real-time alerts, remote device management, and integration with smart home devices.
- Creativity, functionality, and user experience will be key criteria for judging.

We wish all participants the best of luck in developing innovative solutions for Smart Home Security Apps.

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 Senior Category (14-19 years old)

Category Focus: **Smart Home Security App**

Introduction:

Welcome to the Coding Senior Category of the STEM Festival, where young developers have the opportunity to create innovative solutions for enhancing home security and automation. In this category, participants will leverage their programming skills to design a Smart Home Security App that empowers users to monitor and manage their home security systems from anywhere, at any time.

Mission:

The mission for participants in the Coding Senior Category is to develop a comprehensive **Smart Home Security App** that provides users with seamless control over their home security devices and systems. The app should offer features for remote monitoring, real-time alerts, and integration with various smart home devices to enhance overall security and convenience.

Tasks:

1. App Design and User Interface:

- Design a user-friendly interface for the Smart Home Security App, ensuring ease of navigation and accessibility for users of all ages.
- Implement intuitive controls and visual feedback to facilitate seamless interaction with home security devices and features.

2. Real-Time Monitoring and Alerts:

- Develop functionality for real-time monitoring of home security devices, including cameras, sensors, and alarms.
- Implement push notifications and alerts to notify users of any detected security events or anomalies in their home environment.

3. Remote Device Management:

- Enable users to remotely control and manage their home security devices from the app interface.

- Implement features for arming/disarming security systems, adjusting device settings, and viewing live video feeds.

4. **Smart Home Integration:**

- Integrate the Smart Home Security App with other smart home devices and platforms to create a unified home automation experience.
- Enable seamless communication and interoperability between the security app and devices such as smart locks, lights, and thermostats.



Design Tools/Programming Software (Your Free Choice):

- ❖ Participants can choose from a range of programming languages and frameworks for app development, such as:
 - MIT App Inventor
 - JavaScript (React Native)
 - Swift (iOS), Kotlin (Android)
 - Or web technologies (HTML/CSS/JavaScript)

Earning Points/Scoring:

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

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

Section 2: Real-Time Monitoring and Alerts (20 points)

Criteria	Description	Points Awarded (Max)
Data Accuracy and Timeliness	Accuracy and timeliness of real-time data monitoring, ensuring users receive prompt notifications and updates.	20

Section 3: Remote Device Management (20 points)

Criteria	Description	Points Awarded (Max)
Functionality and Performance	Effectiveness and reliability of remote device management features, allowing users to control devices seamlessly.	20

Section 4: Smart Home Integration (20 points)

Criteria	Description	Points Awarded (Max)
Compatibility and Interoperability	Seamless integration with smart home devices, ensuring compatibility and interoperability across different platforms.	20

Section 5: Overall Functionality (15 points)

Criteria	Description	Points Awarded (Max)
Creativity and Innovation	Overall functionality, creativity, and innovation demonstrated in the app 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 Smart Home Security App designs. Additionally, considering the needs of homeowners and addressing real-world security challenges will be essential for creating impactful solutions.

Best of luck to all participants in developing their **Smart Home Security Apps!**