

Coding Junior Category

(11- 15 Years Old)



(Smart Traffic Management App)

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Summary for Smart Traffic Management App: Coding Junior Category Competition

This document outlines the competition rules for the STEM Festival Coding Junior Category with a focus on creating a "Smart Traffic Management App." Participants in this category, aged 11-15 years old, are tasked with designing and developing a mobile or web app that helps citizens plan their journeys by providing real-time traffic information, suggesting alternate routes, and promoting safe driving practices.

Key Points:

- These rules serve as guidelines for the STEM Festival Coding Junior Category competition.
- The missions are adaptable for different skill levels, making it suitable for participants with varying levels of experience.
- Participants should focus on creating apps that showcase their coding abilities, problem-solving skills, and creativity.
- While completing all tasks is not mandatory, participants should strive for innovation and effectiveness in their solutions.
- Presentations should clearly demonstrate the app's functionalities and design decisions to the judges.

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.
- Our coach can teach us things and guide us. We can only learn if we try things ourselves.

STEM Festival Team

Safe Cities

Coding Junior Category (11 - 15 years old)

Category Focus: **Smart Traffic Management Web or Mobile App**

Introduction:

Welcome to Port Harcourt City, a dynamic urban center known for its technological advancements. As participants in the Coding Junior Category of the STEM Festival, you are encouraged to innovate and create solutions for real-world challenges. In this competition, you will tackle the pressing issue of traffic management by designing a smart app that enhances transportation efficiency and promotes road safety.

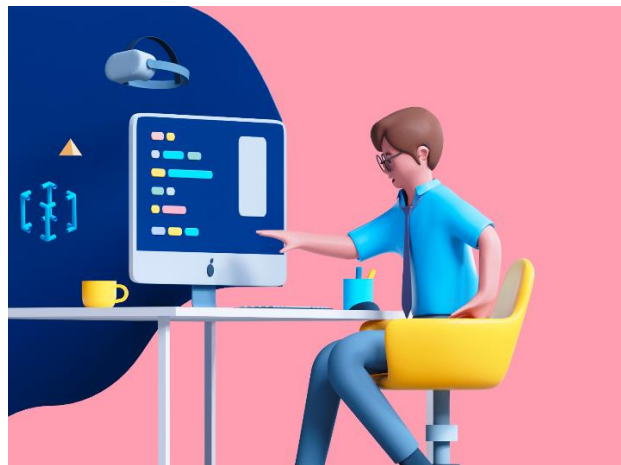
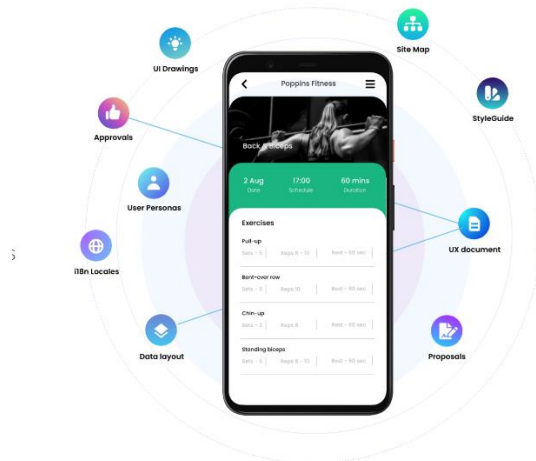
Mission:

The mission for participants in the Coding Junior Category is to develop a **Mobile or Web app** that provides users with valuable tools to navigate traffic congestion, plan efficient routes, and adopt safe driving practices. Through innovative technology and user-friendly interfaces, participants will contribute to building smarter and safer cities.

Tasks:

1. **Real-Time Traffic Information:** Develop a feature that provides users with up-to-date information on traffic conditions, including congestion levels, accidents, road closures, and construction zones.
2. **Route Suggestions:** Implement algorithms that analyze traffic data and suggest alternative routes to help users avoid traffic jams and reach their destinations faster.
3. **Safe Driving Practices:** Incorporate educational content and interactive features aimed at promoting safe driving behaviors, such as obeying speed limits, avoiding distractions, and yielding to pedestrians.
4. **User Interface Design:** Design an intuitive and visually appealing interface that enhances user experience and encourages engagement with the app's features.

Sample Image



Design Tools/Programming Software (Your Free Choice):

❖ Front-End Development:

- Choose programming languages like HTML, CSS, and JavaScript for building interactive web interfaces.
- **Wix or WordPress:** Easy-to-use website builders for creating web-based applications with intuitive drag-and-drop interfaces.

❖ Mobile App Development:

- **App Inventor:** A simple drag-and-drop platform for building mobile apps without prior coding experience. Explore frameworks like MIT App Inventor.
- **Flutter & Dart:** For cross-platform mobile app development.
- **Google Maps API:** Access real-time traffic data and integrate it into your app for route planning.

Earning Points/Scoring:

Section 1: User Interface Design (25 points)

Criteria	Description	Points Awarded (Max)
Clarity and Ease of Use	Intuitiveness and visual appeal of the app interface for accessing traffic information.	25

Section 2: Real-Time Traffic Updates (20 points)

Criteria	Description	Points Awarded (Max)
Data Accuracy and Timeliness	Reliability and accuracy of real-time traffic updates sourced from reliable data providers.	20

Section 3: Route Suggestions (20 points)

Criteria	Description	Points Awarded (Max)
Optimization and Efficiency	Effectiveness of route recommendations based on traffic conditions and user preferences.	20

Section 4: Safe Driving Promotion (20 points)

Criteria	Description	Points Awarded (Max)
Safety Awareness and Engagement	Incorporation of features promoting safe driving behaviors and encouraging responsible driving.	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:

Remember to prioritize simplicity and user-friendliness in your app design. Judges may award bonus points for innovative solutions and creative features that enhance the user experience.

We wish you the best of luck in creating a life-saving Smart Traffic Management App for Port Harcourt City!