CODE to DECODE

Theme 1 : AI for Good: Enhancing School Safety and Security through Intelligent Solutions

Hackathon Problem Statement: Detection and Notification of untoward/ unacceptable Events on School Premises Using Multiple Camera Feeds.

1. Objective: Develop a comprehensive system that utilizes single/multiple camera feeds to detect and notify school authorities of untoward/ unacceptable events occurring on school premises, enhancing safety and security through real-time monitoring and alerting

2. Participants: This challenge is open for all Plaksha undergraduate students. The participation can be in a team of 3-5 students

3. Challenges:

a. Developing Robust Trespass Detection algorithms: Create algorithms to accurately detect trespassing incidents during the non-operating hours of the school, using computer vision
b. Developing a Notification System: System to notify or alarm about any of these events to specified users e.g. Head Teacher, Cluster Coordinator and Community member nearby to school premises (It should be customizable) – Notification method can be Email, Whatsapp or Push Notification For visual detection system, if training data is visual, students may create dummy characters or use videos on internet showing students. Use ethical and correct sources for training AI in discussion with your professors.

Note: To consider resource constraints for all the above challenges.
   o As these solutions need to be deployed in many schools across Punjab, UP, Haryana, Rajasthan
   o solutions that can run on very limited resources having 6 to 8 offline cameras with one offline DVR recording system & 2 MP 720P/1080P camera where we have lack of cloud access/low internet connectivity.
   o This consideration will be a point of evaluation at every stage of the competition.

4. Structure:
Phase 1: <u>Research and Proposal & Prototype Development</u>

Participants: Teams of 3-5 Plaksha undergraduate students.

Confirmation: Ethical use of software, training data and any other tools /resources used & undertaking signed by all the students who are participating.

Deliverables: Detailed project algorithms addressing all the challenges and Functional prototypes demonstrating key features and testing at college campus

Evaluation: Based on innovation, feasibility, impact, resource utilization, accuracy, usability, resource utilization, and robustness and ethical considerations

Phase 2: <u>Testing and Refinement & Final Presentation and awards</u>

Participants: Top-performing 5 teams from Phase 1

Deliverables: Testing in real school environment and submitting refined prototypes with improved features and feedback integration.

Evaluation: Based on improvement, user and jury feedback incorporation, resource utilization, and overall performance.
Deliverables: Final system demonstration and presentation to a panel of judges.

Awards: Prizes for Best Overall System (Top 2), which solves the above-mentioned problems and maximum use cases, Most Innovative approach, should work with resource constraints and best results from the pilot.

4. **Process with Timelines:**
   1) Last date to submit is 9 Jan'25
   2) First shortlist and announcement of qualifying top 3 entries
   3) **Testing of porotypes in school environment from 9 Jan'25 to 25th Jan'24**
   4) The final selection & Announcement of winners (Top 2) by Jury members of Plaksha & by Bharti Airtel Foundation by 31st Jan'25
   5) Facilitation Ceremony by Feb'25

5. **Prize**
   First Prize will receive a cash prize of Rs. 25,000
   Second prize – Rs. 15,000
   Third prize – Rs. 10,000

   Each team to consist of three to five members