Android:

Problem 1 — 240 FPS Pro Camera App

Build an Android camera app that records at 240/120 FPS.
No live preview while recording.
The app records first, saves the video to storage, and then allows playback.
Include manual controls for shutter speed, FPS, and ISO.
Save metadata like FPS, timestamp, ISO, and shutter speed with the video

Todo:

- You have to make an app that records at 240/120 FPS (1920 * 1080 p / 720 / 640) videos and downloads them. During the playback (in the app itself or gallery), it should be 240fps. We don't need to generate a 240FPS live preview of the camera while recording live.
- Make sure to give UI controls on the app that help us manipulate the camera settings. Controls required are ISO, Shutter Speed, and FPS

Expected Output:

- We have to produce an output video which will be 240/120 FPS at 1920*1080p.
- You can load the output video in the gallery or in the app itself

Problem 2 — Frame Drop / Merge Detection

Video Temporal Error Detector

Design and implement a system that detects temporal inconsistencies in a video stream, specifically identifying:

- **Frame Drops** – when one or more frames are missing
- **Frame Merges** – when multiple frames are blended or incorrectly combined

Participants should analyze:

- Frame timestamps (to detect irregular intervals), and/or
- Motion consistency between consecutive frames

The system must automatically classify each frame as:

- Normal
- Frame Drop
- Frame Merge

Sample Videos : Frame Merge and Drop

Expected Output / Deliverables

Participants must provide:

1. A working algorithm or model that processes a video input.
2. Frame-level classification results (Normal / Drop / Merge).
3. A visual output video or report clearly highlighting detected inconsistencies.
4. A brief explanation of the approach used (e.g., motion analysis, timestamp-based detection, hybrid method).

Problem 3 — AI-Based Smart auto focus & Dynamic Subject Tracking System

Design and implement an AI-powered system that allows a user to select any subject (e.g., a player or object) in a video (.mp4 or live stream) and automatically maintain focus on it.

The system must:

- Detect the selected object when the user taps/clicks on it.
- Continuously track the selected subject across frames.
- Keep the selected subject sharp and highlighted.
- Apply background blur to all other objects.
- Instantly switch focus if the user clicks on a different object.
- Handle fast motion, multiple subjects, occlusion, and low-light conditions.
- Run on-device (Android / iOS / Web), any one of them

Expected Output / Deliverables

Participants must provide:

- A working application that processes video input (recorded or live).
- Real-time subject tracking with dynamic focus switching.
- Visual output showing the selected subject in focus while others are blurred.
- A brief explanation of the approach (e.g., detection + tracking + segmentation pipeline).

Sample Videos : AI-Based Smart Focus & Dynamic Subject Tracking System