

GFG HackOvation 2026 — Official Problem Statements & Guidelines

“Code. Create. Collaborate. Innovate.”

Welcome to the registration phase of **GFG HackOvation 2026**. Below you will find the 10 challenges for this year’s flagship event. These are real-world problems curated to test your architectural thinking, coding efficiency, and ability to adapt.

I. Round 1 Submission Guidelines

To qualify for the offline coding round (Feb 7-8), every team must submit a detailed Idea Proposal (PPT).

- **Submission Window:** Opens Feb 1, 10:00 AM | **Closes Feb 5, 11:59 PM.**
 - **Slide Count:** Minimum **5 slides**, Maximum **9 slides**.
 - **Format:** Must be exported and submitted as a **PDF**.
 - **File Naming Convention:** `TeamName_PSNumber.pdf`
 - *Example:* If team “BitByBit” chooses Problem Statement 3, the file should be: `BitByBit_PS03.pdf`.
 - **Required PPT Content:**
 1. **Title Slide:** Team Name, Chosen PS Number, and all Member Names/IDs.
 2. **Problem Context:** Your understanding of the problem and its impact.
 3. **Proposed Solution:** A high-level overview of your unique approach.
 4. **Tech Stack:** Specific tools/frameworks you plan to use (e.g., Flutter, MongoDB, Gemini API, FastAPI).
 5. **Architecture:** A simple flowchart or diagram showing how your system works.
 6. **UI/UX Wireframes:** Rough sketches or mockups of the user interface.
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II. The “Twist” Warning

The problem statements below are **Base Challenges**. Research them, plan your logic, and prepare your UI. However, on the day of the hackathon (Feb 7th), we will reveal a “**Technical Twist**” for each PS. Your final product must solve both the Base Challenge and the Twist to win.

III. Problem Statements

PS 01: Intelligent Academic Knowledge System **The Problem:** Students often find it difficult to connect concepts across different formats (hand-written notes vs. textbooks vs. recorded lectures). **The Challenge:** Build a “Second Brain” for students. The system should ingest various formats (PDFs, images of notes, audio files) and allow the user to query their entire semester’s content. It must provide synthesized answers that cite specific documents or lecture timestamps.

PS 02: Real-Time Resource & Peer Optimizer **The Problem:** Unexpected gaps in timetables lead to wasted productivity and missed opportunities for collaborative learning. **The Challenge:** Create a real-time scheduling network that syncs with campus timings. It should detect “idle time” and instantly match students with peers who have the same gap, suggesting specific activities (study groups, project work) based on live campus resource availability (labs, library slots).

PS 03: Autonomous Financial Auditor **The Problem:** Manual data entry for invoices and receipts in small businesses is prone to error and internal fraud. **The Challenge:** Develop an AI-driven agent that can extract structured data from images of invoices. The system must not only digitize the data but also autonomously validate it against business rules (tax logic, vendor verification, duplicate checking) and flag suspicious anomalies.

PS 04: Predictive Financial Life Simulator **The Problem:** Young professionals often lack a clear understanding of how today’s spending habits impact long-term financial security in the Indian context. **The Challenge:** Build a “Financial Digital Twin” simulator. Based on a user’s current income and spending patterns, the system should simulate 5-10 years of financial life, factoring in realistic life events (medical emergencies, inflation, market shifts) to visualize their future wealth trajectory.

PS 05: Offline Emergency Communication Network **The Problem:** During large-scale events or natural disasters, cellular networks often crash, leaving people unable to call for help. **The Challenge:** Build an emergency SOS system that functions completely without internet or cellular signal. It must use peer-to-peer technologies (like Bluetooth Mesh) to allow SOS signals to “hop” from one phone to another until they reach a designated responder or a device with connectivity.

PS 06: Privacy-First AI Rehab Assistant **The Problem:** Professional physiotherapy is expensive, and doing exercises at home often leads to incorrect posture and slower recovery. **The Challenge:** Create a browser-based motion-tracking tool that uses the device camera to monitor rehabilitation exercises in

real-time. It must provide instant feedback on posture and count repetitions. **Constraint:** For privacy, all image processing must happen locally on the user’s device (Edge AI).

PS 07: Perishable Goods Logistics Optimizer **The Problem:** A significant portion of donated food and medicine in India spoils due to inefficient pickup and delivery routes. **The Challenge:** Design a dynamic routing engine for a “Food/Medicine Rescue” network. The system must calculate the most efficient path for a single vehicle to perform multiple pickups from donors and deliveries to NGOs, strictly adhering to the “Time-to-Expiry” of the goods.

PS 08: Multimodal Deepfake Verification Tool **The Problem:** The rise of AI-generated media is making it nearly impossible to distinguish between real and synthetic information. **The Challenge:** Build an analysis tool that evaluates suspicious videos or audio clips for “GAN fingerprints” or biological inconsistencies (unnatural movement, audio-visual lag). It should provide a “Credibility Score” and highlight specific timestamps where the media appears tampered with.

PS 09: Offline Crop Health Diagnostic System **The Problem:** Farmers in low-connectivity areas cannot access expert advice for crop diseases, leading to significant yield loss. **The Challenge:** Build a lightweight, offline-first application that allows a farmer to photograph a plant leaf and get an instant diagnosis. The machine learning model must run entirely on the mobile device, providing remedies and suggestions in regional languages without needing the cloud.

PS 10: Voice-Activated Browser Automation **The Problem:** Complex website UIs (like government portals or booking sites) are difficult to navigate for the elderly or people with motor disabilities. **The Challenge:** Develop a Voice-to-Action agent. A user should be able to give a natural language command (e.g., “*Book a ticket from Kota to Delhi for next Friday*”), and the agent should autonomously navigate the website, fill out the forms, and prepare the final checkout page.

IV. Evaluation Criteria (Round 1)

- **Feasibility:** Can this be built in 30 hours?
- **Innovation:** Does your solution offer a fresh perspective?
- **Technical Depth:** Have you chosen the right tools for the job?
- **Clarity:** Is your architecture well-thought-out?

Prepare your Proposals. The Arena opens Feb 7th!