

Hackathon Problem Statements

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Problem: During natural disasters, communication breakdowns are common due to damaged infrastructure. Develop a decentralized communication hub using mesh networking technology to connect rescue teams, local authorities, and affected individuals without relying on the internet.

Hint: Use geospatial mapping and low-cost IoT devices for efficient deployment in rural areas.

2. AI-Powered Sustainable Farming Assistant

Problem: Indian farmers often face challenges in maintaining soil fertility and combating pests. Build an AI-powered assistant to provide real-time advice on crop health, pest control, and weather predictions, while promoting sustainable practices like organic farming.

Hint: Leverage satellite imagery, local weather data, and mobile connectivity for accessibility.

3. Real-Time River Pollution Monitoring

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Hint: Focus on key metrics like pH, dissolved oxygen, and heavy metal content. Integrate with mobile apps for public transparency.

4. Traffic Emission Reduction Model

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Hint: Combine GPS data, traffic congestion analytics, and emission calculators.

5. Affordable Assistive Tech for Dyslexia

Problem: Many children in India with learning disabilities like dyslexia remain undiagnosed. Develop a low-cost, gamified mobile app to assist children in learning reading and writing skills in multiple Indian languages.

Hint: Use NLP for interactive language learning and reward-based gamification.

6. Blockchain-Based Vaccine Distribution

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Hint: Implement smart contracts for transparency and accountability.

7. AI-Based Heritage Language Translator

Problem: Many regional languages in India are at risk of extinction. Create an AI-powered translator to document, translate, and promote the use of endangered Indian languages like Kodava or Tulu.

Hint: Use NLP trained on regional dialects and community-sourced linguistic data.

8. Elderly Health Monitoring Companion

Problem: Elderly individuals in India often lack consistent access to healthcare. Develop an affordable wearable device to monitor vitals like heart rate, blood pressure, and sugar levels, with alerts for family members and local clinics.

Hint: Integrate predictive analytics for early detection of health risks.

9. Smart Garbage Segregator

Problem: Waste segregation is still a significant issue in urban and rural India. Build a low-cost, AI-enabled dustbin that automatically segregates dry, wet, and hazardous waste.

Hint: Use image recognition and simple conveyor mechanisms to classify waste.

10. Micro-Lending Platform for Rural Artisans

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Hint: Leverage blockchain for secure transactions and storytelling to connect users with artisans' work.

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12. Gamified Skill Learning for Prisoners

Problem: Many Indian prisoners lack the skills needed for rehabilitation into society. Develop a gamified e-learning platform that trains prisoners in high-demand skills, enabling better employment opportunities post-incarceration.

Hint: Use localized content and real-time skill assessment features.

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15. Augmented Reality for Skill Training

Problem: There is a growing demand for hands-on training in sectors like construction and healthcare. Create an AR-based platform offering interactive skill training modules for technical jobs.

Hint: Develop AR overlays to simulate real-world scenarios.

16. Real-Time Election Booth Monitoring

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Hint: Include guided meditations and culturally relevant scenarios.

21. Crowdsourced Road Repair Monitoring

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Hint: Use AI to verify reports and prioritize repair work based on traffic density.

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Problem: Smallholder farmers lack affordable tech for precision farming. Build a modular IoT kit for monitoring soil moisture, crop growth, and irrigation needs, tailored to Indian crops.

Hint: Integrate with SMS alerts for non-smartphone users.

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Problem: Fire accidents in densely populated slums often go unreported until they spread. Design an IoT-based fire detection system to alert nearby residents and authorities immediately.

Hint: Use low-cost temperature and smoke sensors.

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Problem: Many rural citizens struggle to access government services. Create a customizable, touch-enabled kiosk system for services like Aadhaar, ration cards, and land records.

Hint: Focus on intuitive regional language interfaces and offline functionality.

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Problem: Many traditional tribal art forms in India are disappearing. Build an e-commerce platform that connects tribal artists with global buyers while documenting their art digitally.

Hint: Integrate storytelling elements for cultural context.

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36. Community-Driven Public Toilets Maintenance App

Problem: Public toilets in India are often unhygienic and poorly maintained. Create an app where users can rate, report issues, and find clean public toilets nearby.

Hint: Partner with local municipalities for rewards-based cleanliness programs.

37. Affordable E-Bike for Rural Transportation

Problem: Rural areas lack affordable and eco-friendly transport options. Design a low-cost electric bike suited for Indian terrains, powered by renewable energy.

Hint: Focus on easy repairability and battery swapping stations.

38. Culturally Inclusive AI for Content Moderation

Problem: Current AI systems fail to understand the cultural nuances of Indian languages. Develop an AI moderation tool that identifies harmful content while respecting regional linguistic diversity.

Hint: Train with region-specific datasets for better context recognition.

39. IoT for Efficient Cold Chain Logistics

Problem: Perishable goods like vaccines and food often get spoiled due to temperature variations. Build an IoT system to monitor and manage cold chain logistics in real time.

Hint: Integrate with GPS for location-based alerts.

40. Smart Skill Marketplace for Gig Workers

Problem: Many gig workers in India lack visibility to potential clients. Create a marketplace where workers can showcase their skills and get job opportunities based on real-time demand.

Hint: Use AI to match skills with client requirements dynamically.

41. Interactive Financial Literacy App for Teenagers

Problem: Indian teenagers lack awareness about financial management. Build an app offering interactive games and quizzes to teach personal finance concepts.

Hint: Incorporate regional case studies and relatable scenarios.

42. AI-Driven Virtual Traffic Police Assistant

Problem: Traffic rule violations often go unchecked in crowded cities. Develop an AI tool to monitor traffic violations via CCTV and issue e-challans automatically.

Hint: Use computer vision for vehicle recognition and rule enforcement.

43. Mobile Library Van for Remote Villages

Problem: Remote villages often lack access to educational resources. Design a smart library van equipped with e-books and interactive learning modules for children and adults.

Hint: Integrate solar power for charging and offline accessibility.

44. AI-Powered School Dropout Prediction System

Problem: Many students in India drop out due to undetected challenges. Develop an AI tool to predict dropout risks based on attendance, performance, and socioeconomic data.

Hint: Work with schools for pilot testing and dataset collection.

45. Regional Startup Ecosystem Dashboard

Problem: Aspiring entrepreneurs struggle to find regional support and funding. Build a dashboard that maps incubators, investors, and co-working spaces in different Indian regions.

Hint: Include success stories and mentorship opportunities.

46. Real-Time Crop Price Tracker for Farmers

Problem: Farmers often sell crops at undervalued prices due to lack of market information. Create a mobile app that provides real-time crop prices in nearby mandis.

Hint: Use SMS alerts for accessibility.

47. AI-Driven Personalized Career Counseling

Problem: Students in India often choose careers due to societal pressure rather than aptitude. Build an AI tool that provides personalized career advice based on skills and interests.

Hint: Incorporate psychometric tests and industry trend analysis.

48. IoT for Groundwater Management

Problem: Overuse of groundwater is depleting resources in India. Develop an IoT system to monitor groundwater levels and suggest sustainable usage patterns.

Hint: Use community dashboards for awareness campaigns.

49. Smart Food Donation Network

Problem: Excess food from events and hotels often goes to waste. Create a network to connect donors with NGOs and food banks in real time.

Hint: Use geotagging to match donors with the nearest recipients.

50. Interactive History Learning App

Problem: Many students find history uninteresting. Build an interactive app that gamifies Indian history lessons through quizzes, stories, and augmented reality experiences.

Hint: Incorporate region-specific historical narratives to make content relatable.