Bangladesh National AI Hackathon 2025

Sample Project Proposal

Project Title: AI-Powered Flood Prediction System for Bangladesh

⚠️ Note:

This proposal is **idea-based only**. No coding or prototype development is required. Focus on problem analysis, AI-based solution concept, and implementation plan.

Team Name: Flood Savers
Team Members:

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1. Problem Statement

Bangladesh experiences severe annual damage from flooding, leading to loss of lives and property worth approximately $1.2 billion (World Bank, 2023). Existing early warning systems provide only 24–48 hours notice with around 65% accuracy, and warnings reach rural communities much slower than urban areas. This delayed and uneven alerting system results in insufficient preparation and increased risks.

2. Proposed Solution

We propose an AI-based hybrid model combining:

- LSTM networks for analyzing river water level trends over time

- Satellite image processing (NASA MODIS data)
- Bengali NLP for sending SMS alerts in local dialects

Key features:

- 72-hour advance flood warnings
- 85%+ prediction accuracy in pilot districts
- Multi-channel alerts via SMS, mobile apps, and community loudspeakers

3. Data & Technology

- **Data sources:** Bangladesh Meteorological Department rainfall data (10 years), River water level monitoring systems, Satellite data, Local flood reports
- **Technologies:** Python (PyTorch), Apache Spark for data pipelines, React.js + Mapbox GL frontend, Twilio API for alerts

4. Implementation Roadmap

- Weeks 1–2: Data collection and preprocessing
- Weeks 3–4: Model training and validation
- Week 5: Pilot testing in selected districts
- Week 6: Integration with government agencies for alert dissemination

5. Expected Impact

- 30% reduction in flood-related deaths in pilot areas
- 15% faster emergency response times
- $200M annual agricultural loss reduction

Aligned with SDG 11 (Sustainable Cities) and SDG 13 (Climate Action).

6. Presentation Strategy

- Visual aids such as flood risk maps and accuracy graphs
- Clear, concise PDF submission explaining the idea and implementation plan