

# CodeStorm Problem Statements

## Domain 1 – AI/ML/DL

- **AI-Powered Disaster Response System**  
*Develop an AI model that can predict the severity and impact of natural disasters (earthquakes, floods, wildfires) using real-time satellite images and weather data.*
- **AI for Smart Traffic and Accident Prevention**  
*Build a deep learning model that predicts potential traffic congestion and accidents using real-time traffic camera feeds and IoT sensor data.*
- **AI-Driven Personalized Medicine Recommendation**  
*Develop an AI system that suggests precise medication and treatment plans based on a patient's genetic profile, lifestyle, and past medical history.*

## Domain 2 – Open Innovation

- **Personalized Climate Impact Tracker**  
*Create a platform that calculates an individual's or an organization's carbon footprint based on daily activities and suggests actionable ways to reduce environmental impact.*
- **Smart Packaging to Indicate Food Freshness Without Expiry Dates**  
*Design an innovative food packaging system that changes color based on real-time food freshness, reducing food wastage and improving consumer awareness.*
- **Universal Language-Free Communication System for Emergencies**  
*Create a universally understandable, pictogram-based communication system that helps people convey essential information during emergencies, regardless of language barriers.*



## Domain 3 – Cyber Security

- **Offline Password Vault with Emergency Recovery Mechanism**  
*Create an ultra-secure, fully offline password management system that enables users to store and retrieve credentials safely while allowing emergency access via a unique recovery protocol.*
- **Decentralized Self-Destructing Data Protection for High-Risk Communications**  
*Develop a system where highly sensitive data can self-destruct after a predefined time or unauthorized access attempt, preventing leaks and espionage.*
- **Invisible Malware and Steganography-Based Attack Detection System**  
*Build a cybersecurity tool that detects and neutralizes malware hidden within images, videos, or encrypted files using novel steganalysis techniques.*

## Domain 4 – Blockchain

- **Blockchain-Powered Academic Certificate Authentication**  
*Design a blockchain system that securely stores and verifies academic credentials to prevent fake degrees and ensure easy employer verification.*
- **Smart Contract-Based Transparent Government Fund Allocation and Auditing**  
*Develop a blockchain solution that tracks government fund distribution and spending using smart contracts to ensure transparency, prevent corruption, and provide real-time auditing.*
- **Tamper-Proof Supply Chain for Luxury Goods to Eliminate Counterfeiting**  
*Create a blockchain-based tracking system for luxury goods (watches, handbags, jewelry) that allows consumers to verify authenticity and ownership history.*

## Domain 5 – Development

- **Privacy-Focused, Ad-Free Social Media Alternative with No User Tracking**  
*Create a social media platform that operates without ads, tracking, or algorithms, allowing users to control their feed without data manipulation..*
- **Offline-First Emergency Communication App for Disaster-Struck Areas**  
*Develop a mobile/web app that enables communication between individuals and rescue teams in disaster zones without internet or cellular networks.*
- **Multi-Language Real-Time Code Collaboration Platform**  
*Build an online code editor where developers can collaborate in real time, supporting multiple languages and offering instant execution without external dependencies.*

## Domain 6 – IOT

- **AI-Powered Smart Energy Meter for Home Automation**  
*Develop an IoT-based smart energy meter that monitors and optimizes household electricity consumption using real-time data analytics.*
- **IoT-Based Smart Attendance System Using WiFi/Mobile Proximity**  
*Build an IoT-based attendance system that detects student presence using their mobile WiFi MAC addresses or Bluetooth without biometric scanners.*
- **IoT-Based Home Security System with Intrusion Detection**  
*Develop an IoT-powered security system that detects unauthorized movement inside a house and sends alerts to the homeowner.*

