# College Hackathon Problem Statements

This document provides suggested themes and problem statements for a college hackathon. Participants are encouraged to address the listed problem statements, but they also have the flexibility to propose their own innovative ideas within the provided themes.

## Healthcare

* Remote Health Monitoring System: Develop a mobile app that allows patients to log their health metrics and symptoms daily. The app should provide alerts to both patients and doctors when irregular patterns are detected, and offer preventive care tips.
* Mental Health Support and Resource Platform: Design an AI-driven platform that offers mental health resources and support. It should include self-assessment tools, personalized content, and a chatbot for immediate assistance.

## Education

* Adaptive Learning Platform: Create a personalized learning application that adapts to the student’s skill level in real time, using AI to provide tailored challenges, quizzes, and content in areas where improvement is needed.
* Virtual Labs for Science Education: Develop a virtual lab simulation where students can conduct interactive science experiments in physics, chemistry, and biology, with safety measures and guided steps.

## Agriculture

* Smart Crop Recommendation App: Build a crop recommendation app that uses soil data, climate information, and current market demand to recommend crops that will yield high returns for farmers.
* Pest and Disease Detection: Design an app where farmers can upload images of crops, and AI will analyze for pest infestation or disease. Include information on safe, eco-friendly treatments.

## Environment

* Community Recycling Network App: Develop an app that connects community members with local recycling and waste reduction initiatives, promoting user participation and offering rewards for eco-friendly actions.
* Air Quality Monitoring and Advisory: Create an app that tracks air quality index (AQI) using open-source data and provides health advisories based on current air quality, along with daily tips to reduce pollution exposure.

## Transportation

* Smart Public Transport Tracking: Develop a tracking app for public transportation systems to provide real-time location updates, delay notifications, and alternative route suggestions.
* Traffic Congestion Prediction Tool: Build an app that uses historical data and current traffic conditions to predict congestion and recommend alternative routes to reduce travel time.

## Governance

* Citizen Feedback and Reporting System: Create an app where citizens can report issues in their locality (e.g., potholes, streetlight outages) and provide feedback on government services.
* Digital Voting Platform for Community Decisions: Design a secure platform for digital voting on community projects, with features for identity verification and transparent result displays.

## Smart Cities

* Real-time City Dashboard: Develop a dashboard that consolidates data on traffic, public transport, and air quality for citizens and city planners to monitor urban conditions.
* Smart Energy Usage Tracker: Build an app for citizens to monitor their household energy usage and receive tips to reduce consumption based on historical data.

## Women Safety

* Emergency Alert and Tracker: Design a safety app where users can send real-time location alerts to trusted contacts with a single tap in case of emergencies.
* Self-Defense Tutorial Platform: Create an app that provides self-defense tutorials and resources, focusing on various scenarios and safety measures.

## Tourism and Hospitality

* Personalized Travel Itinerary Generator: Build an app that uses AI to create customized itineraries based on user preferences, travel history, and available deals.
* Local Experience Finder: Develop a platform for travelers to discover authentic, locally-run experiences, with recommendations based on location and user reviews.

## Renewable Energy

* Green Energy Sources Finder: Create a platform to help users locate nearby green energy sources, such as solar charging stations or wind farms, with real-time availability.
* Household Carbon Footprint Calculator: Design an app where users can log daily activities to calculate their carbon footprint and receive suggestions for lowering it.

## Finance and Fintech

* Personal Finance Management App: Develop an app that helps users track expenses, manage budgets, and receive tips on financial planning based on spending patterns.
* Fraud Detection for Online Transactions: Create a tool that analyzes transaction patterns to detect potential fraud, alerting users to suspicious activities in real time.

## Disaster Management

* Emergency Resource Finder: Design an app that helps users locate nearby emergency shelters, medical facilities, and food supplies during natural disasters.
* Real-time Disaster Alert System: Build a platform to provide location-based alerts for floods, earthquakes, and other disasters, with evacuation routes and safety instructions.

## Cybersecurity

* Password Strength and Security Advisor: Develop an app that analyzes password strength, provides suggestions for improvement, and monitors online accounts for potential breaches.
* Phishing Awareness Training App: Create an interactive app that educates users on identifying phishing attempts, offering real-time simulations and tips for safe online behavior.

## Rural Development

* Rural E-Commerce Platform: Build a marketplace app that connects rural artisans and farmers directly to consumers, promoting local products and increasing economic opportunities.
* Skill Development Resource Hub: Develop an app offering training resources for rural youth in skills like digital literacy, language, and basic vocational skills.

## Accessibility

* Sign Language Translator: Create a tool that translates spoken or typed words into sign language animations, helping bridge communication gaps for the hearing-impaired.
* Accessible Navigation App: Design an app that offers detailed navigation assistance, focusing on accessibility needs like wheelchair ramps, tactile paths, and elevator access.