Problem Statements

SOFTWARE

No	ID	Problem Statement
1	IH3MU01	**Social Media Analyzer (By TSS)** The Social Media Analyzer is an AI-powered system designed to ethically extract publicly available data from social media platforms to create comprehensive user profiles. This tool helps analyze online activity to assess sentiment, reputation, and potential risks while ensuring data privacy and security.
2	IH3MU02	**Court Order Information Extraction and Summarization (By TSS)** The primary goal of this model should be to access and comprehend legal information within provided court orders. By automating the extraction and summarization processes, the project aims to enhance accessibility and efficiency in legal research and analysis.
3	IH3MU03	**Healthcare Analytics** Develop a predictive model using machine learning algorithms that can predict the likelihood of a patient developing a certain medical condition. The model should be trained on a large dataset of patient medical records and should be able to identify risk factors and provide recommendations for preventative care.

4	IH3MU04	**Data-Driven AI for Sustainable Farming** Develop an AI system which aims to enhance agricultural productivity through intelligent data analysis and decision-making. This system will help farmers to make informed choices about crop selection, irrigation, fertilization, and pest control, ultimately improving yield.
5	IH3MU05	**Optimizing Retail Inventory with Multi Agents** Develop a system that aims to improve stock management, reduce overstock and stockouts, and enhance decision-making in retail through intelligent agent-based systems. The system continuously learns and adapts, helping retailers respond quickly to market changes, reduce waste, and improve customer satisfaction.
6	IH3MU06	**AR/VR Visualizations for Interior Designers** This system aims to provide an immersive platform that lets designers and clients to visualize and interact with interior designs in real-time 3D environments. Using AR/VR technology, it enhances design accuracy, client engagement, and decision-making.
7	IH3MU07	**Decentralized Supply Chain Tracking System** Develop a blockchain-based system to track goods through a supply chain, ensuring transparency, authenticity, and accountability. Focus on a specific industry (e.g., food, pharmaceuticals) and demonstrate the benefits of decentralization. (Cutting-Edge Tech: Blockchain Technology, Smart Contracts, Supply Chain Management Concepts)

8	IH3MU08	**Maternal Health Monitoring App for Women's** The Maternal Health Monitoring App helps women track their pregnancy health by monitoring vital signs, providing personalized advice, reminders, and alerts. The system collects data from users and wearable devices and offers tailored advice based on medical guidelines, supporting timely care.
9	IH3MU09	**Crowdsourced Pothole & Road Hazard Reporting System** Develop a reporting system that aims to improve road safety and maintenance by enabling citizens to report potholes and hazards in real-time with locations, photos and description and alerts authorities for prompt actions.
10	IH3MU10	**AI-Driven Optimization of Urban Traffic Flow for Reduced Emissions** Create an AI system that analyzes real-time traffic data and optimizes traffic light timings and routing strategies to minimize traffic congestion and reduce vehicle emissions in urban areas. (Cutting-Edge Tech: Machine Learning (Reinforcement Learning, Traffic Flow Prediction), Real-time Data Processing, Traffic Simulation Software, Cloud-based Optimization).
11	IH3MU11	**AI-Based Sign Language Translator** Develop an AI-powered sign language translator that recognizes hand gestures and converts them into spoken language or text in real-time.

12	IH3MU12	**Seamless Event Management System** Develop a system that aims to simplify and automate the entire event lifecycle—from planning and registration to execution and feedback. The system should enable organizers to manage events effortlessly through a centralized platform, automate repetitive tasks, track participant engagement, and provide analytics for future improvement.
13	IH3MU13	**Smart Inventory Management System with QR Code Access** Develop a model such that it aims to create an efficient and accurate way to manage inventory by replacing manual tracking with a QR code-based digital solution. The system should allow users to easily add, update, locate, and manage stock items in real time.
14	IH3MU14	**AI-Risk Mitigation System** Build an AI system that identifies, evaluates, and mitigates risks in AI systems—such as bias, privacy violations, hallucinations, or adversarial vulnerabilities.
15	IH3MU15	**Virtual Herbal Garden** Create a Virtual Herbal Garden that provides an interactive, educational, and immersive experience to users, showcasing the diverse range of medicinal plants used in AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy).

HARDWARE

No	ID	Problem Statement
1	IH3MU16	**DIY Prosthetic Hand/Arm with Basic Functionality** Design and build a low-cost, open-source prosthetic hand or arm using readily available materials and components (3D printing, microcontrollers, actuators). Focus on achieving basic grasping and manipulation tasks. (Cutting-Edge Tech: 3D Printing, Actuators, Microcontrollers, Open-Source Hardware)
2	IH3MU17	**Remote Patient Monitoring System for Elderly Care** Develop a non-intrusive hardware system for remote patient monitoring of elderly individuals at home. Focus on vital signs (heart rate, respiration), fall detection, and activity tracking, transmitting data securely to caregivers or healthcare providers. (Cutting-Edge Tech: Wearable Sensors, IoT Communication, Edge Computing for data processing)
3	IH3MU18	**Smart Traffic Management System for Pedestrian Safety** Develop a hardware system to improve pedestrian safety at intersections. This could involve smart traffic lights that dynamically adjust timing based on pedestrian presence detected by sensors (cameras, LiDAR), or audible/visual alerts to drivers and pedestrians. (Cutting-Edge Tech: Computer Vision, LiDAR, Traffic Sensors, Real-time Control Systems, Edge Computing).

4	IH3MU19	**Smart Home Energy Management Device** Design a hardware device that optimizes energy consumption in a home by monitoring appliance usage, renewable energy generation (if any), and grid prices. The device should suggest energy-saving strategies and potentially automate appliance scheduling. (Cutting-Edge Tech: IoT Sensors, Smart Plugs, Microcontrollers, Energy Monitoring ICs, Home Automation Protocols)
5	IH3MU20	**Smart Irrigation System with Weather Prediction** This project automates watering based on soil moisture levels and upcoming weather forecasts to conserve water and maintain optimal soil health.
6	IH3MU21	**Target detection by Optimizing Anomaly Detection** Develop a target detection model by optimizing Anomaly Detection in Hyperspectral Image Processing using AI/ML
7	IH3MU22	**Wearable sensor for prevention of falls in elderly people** To develop a wearable sensor-based system that monitors elderly individuals' movements in real time and detects abnormal motion patterns indicative of a fall or high fall risk.
8	IH3MU23	**IoT-based Early Warning and Response System** Design and prototype an IoT-enabled Early Warning and Response System for Natural Disasters
9	IH3MU24	**Smart Proctoring System for Exam** Design a Smart AI-Powered Proctoring System to Prevent Cheating in Online and Offline Exams using Camera, Sensors, and Edge AI.
10	IH3MU25	**People Counting using UAV** Develop a UAV-Based Smart People Counting System for Crowd Monitoring and Safety Management.

INTELLIFY

Students with their own innovative ideas are also encouraged and welcome to participate in the hackathon. This event is not limited to predefined problem statements—if you have a unique solution that leverages technology to solve real-world challenges, this is the perfect platform to bring it forward. Whether it's hardware-based, software-based, or a hybrid system—you are invited to propose and develop it. Creativity, originality, and practical impact will be valued alongside technical execution

Marwadi University
Marwadi Chandarana Group