THEME 1 : Smart Technology and Automation

PSID	TITLE	DESCRIPTION
HG0101	AI-Enhanced Crowd Management and Safety for Large Public Events	Develop an AI-powered system that can analyze real-time data from cameras, sensors, and social media to monitor crowd behavior, detect potential safety hazards, and provide alerts and recommendations to event organizers and authorities. This can improve public safety and crowd control at large gatherings.
HG0102	Smart Urban Waste Management System with Intelligent Route Optimization	Create a smart waste management system that uses sensors to monitor waste levels in bins across a city. The system should predict optimal waste collection routes and schedules, reducing fuel consumption and improving efficiency.
HG0103	Advanced Driver Assistance System (ADAS) for Indian Roads	Develop an ADAS specifically tailored for the chaotic and diverse conditions of Indian roads. The system should include features like collision avoidance, lane departure warnings, and pedestrian detection, leveraging AI and machine learning to adapt to various driving scenarios.
HG0104	Predictive Maintenance for Public Transportation	Design a predictive maintenance system for public buses and trains (using IoT sensors optional) and machine learning. The system should monitor vehicle components in real-time, predict failures before they occur, and schedule maintenance to avoid service disruptions.
HG0105	AI-Enhanced Logistics Optimization	Develop a logistics optimization platform that uses AI to streamline supply chain operations. The system should predict demand, optimize inventory levels, and automate warehouse management, improving efficiency and reducing costs.
HG0106	Smart Parking Solution	Create a smart parking system that uses IoT sensors to detect available parking spaces and guide drivers to them via a mobile app. The system should also enable digital payments and provide real-time updates on parking availability.
HG0107	AI-Powered Content Generation Platform	Design a software platform that leverages AI and natural language processing to assist with content creation. The platform should offer features like: * Automatic generation of different content formats (text, social media posts, email) based on input keywords and style preferences. * Summarization of complex information into concise and engaging content. * Content plagiarism detection and originality verification.
HG0108	Intelligent Building Management System	Design an intelligent building management system that uses IoT devices and AI to optimize energy usage, enhance security, and improve the comfort of occupants. Features should include smart lighting, HVAC control, and real-time monitoring of building systems.
HG0109	AI-Powered Citizen Engagement Platform for Smart Governance	Develop a software platform that leverages AI and citizen feedback mechanisms to improve citizen engagement and decision-making in smart cities. The platform should allow citizens to submit ideas, participate in polls and surveys, and provide real-time feedback on city services and initiatives. The system should use AI to analyze citizen input and identify trends, enabling city officials to make data-driven decisions that better reflect the needs of the community.
HG0110	AI-Powered Conversational AI Platform for Businesses	Create a software platform that simplifies the development and deployment of AI-powered conversational interfaces (chatbots, virtual assistants) for customer service. The platform should allow businesses to build chatbots with

		natural language processing capabilities, train them on customer data, and integrate them into various communication channels, improving customer service accessibility and reducing support costs.
HG0111	AI-Powered Intelligent Transportation System for Multimodal Mobility Integration	Create an AI-driven system that integrates various modes of transportation (e.g., public transit, ride-sharing, micro-mobility) and provides intelligent routing, scheduling, and trip planning services to users. This can promote seamless multimodal mobility, reduce traffic congestion, and improve accessibility.
HG0112	AI-Powered Energy Optimization Platform for Buildings	Create a software platform that integrates with building management systems to optimize energy consumption through AI. The platform should analyze real-time data and adjust settings automatically to reduce energy waste.
HG0113	Hyperlocal Traffic Management with AI and Crowdsourcing	Design a software solution that leverages AI and crowdsourcing to manage traffic flow in urban areas. The system should analyze real-time data and suggest alternative routes, improving traffic efficiency.
HG0114	AI-Driven Smart Grid Management System	Develop a software platform that uses AI to optimize the operation of smart grids, integrating renewable energy sources and managing energy distribution efficiently.
HG0115	Autonomous Public Transportation Scheduling and Optimization	Create a software solution that utilizes AI and Big Data to optimize public transportation schedules, ensuring efficient route planning, dynamic bus stop arrival predictions, and improved accessibility.
HG0116	AI-Powered Urban Noise Pollution Control Platform	Create a software platform that leverages AI, real-time noise sensor data, and dynamic traffic management tools to control noise pollution in urban environments. The system should analyze noise levels in different areas, identify noise sources (e.g., traffic, construction), and suggest dynamic traffic routing adjustments, temporary noise restrictions, or automated alerts to noise ordinance violators. This can help improve urban soundscapes, promote public health, and enhance citizen well-being.
HG0117	AI-Driven Predictive Maintenance for Smart City Street Lighting Infrastructure	Design an AI system that can analyze data from smart street lighting systems (e.g., energy consumption, sensor readings) to predict maintenance needs, detect faults, and optimize lighting schedules. This can improve energy efficiency, reduce maintenance costs, and enhance public safety.
HG0118	AI-Powered Smart Water Network Management Platform	Design a software platform that leverages AI and real-time sensor data to optimize water distribution and minimize water loss in smart cities. The system should analyze water pressure levels, identify potential leaks in the network through acoustic sensors, and recommend targeted maintenance actions to reduce water waste and ensure efficient water delivery to citizens.
HG0119	AI-Based Predictive Maintenance for Smart Cities Infrastructure	Develop a software application that uses AI and sensor data to predict maintenance needs for critical infrastructure in smart cities, ensuring city services continuity.
HG0120	AI-Powered Demand Forecasting for Smart Retail	Create a software platform that uses AI to analyze customer behavior and market trends to forecast demand for retail products, leading to increased sales and improved customer satisfaction.

THEME 2 : Health and Well-Being

PSID	TITLE	DESCRIPTION
HG0201	AI-Driven Personal Health Assistant	Develop an AI-driven personal health assistant that provides users with personalized health recommendations based on their medical history, lifestyle, and real-time health data from wearable devices. The assistant should also schedule appointments and manage medication reminders.
HG0202	Telemedicine Platform for Rural Areas	Create a telemedicine platform specifically designed for rural areas in India. The platform should provide video consultations, remote diagnostics, and digital prescriptions, bridging the gap between rural populations and healthcare professionals.
HG0203	AI-Powered Fitness Coach	Develop an AI-powered fitness coach that creates personalized workout plans, tracks progress, and provides real-time feedback. The coach should integrate with wearable devices to monitor vital signs and adjust workouts accordingly.
HG0204	Smart Diabetes Management System	Create a smart diabetes management system that uses continuous glucose monitoring sensors and AI to predict glucose levels, provide dietary recommendations, and alert users to potential health risks in real-time.
HG0205	Mental Health Monitoring and Support App	Develop a mobile app that uses AI and machine learning to monitor users' mental health through their interactions and behavior patterns. The app should provide mental health resources, daily mood tracking, and connect users with mental health professionals when needed.
HG0206	AI-Enhanced Medical Imaging Analysis	Design an AI system to assist radiologists by automatically analyzing medical images (X-rays, MRIs, CT scans) for anomalies. The system should highlight areas of concern, provide diagnostic suggestions, and reduce the time required for image analysis.
HG0207	Wearable Health Monitoring Device	Create a wearable device that continuously monitors vital health metrics (heart rate, blood pressure, oxygen levels) and uses AI to detect abnormalities. The device should alert users and healthcare providers of potential health issues in real-time.
HG0208	Blockchain for Secure Health Records	Develop a blockchain-based system for secure and interoperable electronic health records (EHRs). The system should ensure data privacy, facilitate seamless sharing of medical records across different healthcare providers, and enhance patient control over their data.
HG0209	Virtual Reality Therapy for Rehabilitation, Phobia and Anxiety Disorders	Create a VR-based therapy platform for physical and mental rehabilitation. The platform should provide immersive environments for exercises and therapy sessions, helping patients recover from injuries or mental health issues more effectively.
HG0210	AI-Based Nutritional Advisor	Develop an AI-based nutritional advisor that provides personalized diet plans based on users' health data, dietary preferences, and nutritional goals. The advisor should also track food intake and provide insights to improve dietary habits.

HG0211	**AI-Powered Nutrition Deficiency Detection and Management**	**Develop a mobile app that analyzes dietary intake data and user demographics to identify potential nutritional deficiencies common in India (e.g., iron deficiency anemia). The app should recommend personalized meal plans and connect users with nutritionists for further guidance.**
HG0212	**Culturally-Sensitive Mental Health Support Platform**	**Create a mobile platform offering mental health support through text-based conversations and culturally appropriate content. The platform should address mental health stigma prevalent in India and provide access to mental health resources tailored to the local context.**
HG0213	**Telehealth Platform for Maternal and Child Health in Rural Areas**	**Design a telemedicine platform focused on maternal and child health, specifically targeting remote areas in India. The platform should allow pregnant women and mothers to connect with doctors for prenatal care, child development consultations, and post-partum support.**
HG0214	**AI-Powered Early Detection of Vector-Borne Diseases**	**Develop a software solution using AI to analyze drone-captured aerial imagery and weather data. The system could predict outbreaks of mosquito-borne diseases like Dengue fever, common in India, allowing for preventative measures and resource allocation.**
HG0215	**Fake Medicine Detection App with Local Pharmacy Integration**	**Create a mobile app that allows users to scan barcodes of medication and verify their authenticity. The app should integrate with local pharmacies to enhance user trust and combat the problem of counterfeit drugs in India.**
HG0216	**Air Quality Monitoring and Personalized Health Advisories**	**Develop a mobile app that provides real-time air quality data specific to users' locations in India. The app should offer personalized health advisories based on air quality conditions and user health profiles (e.g., asthma or respiratory issues)**
HG0217	**AI-Powered Early Diagnosis of Diabetes with Speech Recognition**	**Design a mobile app utilizing AI and speech recognition to analyze speech patterns for early detection of diabetes risk factors. The app, particularly useful in rural India with limited access to traditional screening methods, could identify potential diabetic speech patterns associated with underlying conditions.**
HG0218	**Yoga Therapy App for Musculoskeletal Disorders**	**Create a mobile app offering personalized yoga therapy routines designed to address common musculoskeletal disorders prevalent in India, like back pain and arthritis. The app should provide video demonstrations, guided instructions, and progress tracking.**
HG0219	**AI-Powered Mental Health Chatbot with Suicide Prevention Support**	**Develop a multilingual chatbot platform offering mental health support with a focus on suicide prevention. The platform should utilize AI to identify users at risk and connect them with crisis hotlines and mental health professionals, addressing the high suicide rate in India.**
HG0220	**Affordable Tele-ophthalmology Platform for Vision Screening**	**Design a tele-ophthalmology platform that allows eye care professionals to remotely conduct vision screenings in underserved areas of India. The platform should use affordable mobile equipment and AI-assisted analysis to improve access to basic eye care.**

THEME 3 : Culture, Education, and Tourism

PSID	TITLE	DESCRIPTION
HG0301	Limited access and potential loss of cultural artifacts	Develop a digital platform that utilizes AI and advanced imaging technology to * Digitally preserve cultural artifacts and historical sites. * Enable wider access for the public and researchers. * Facilitate long-term conservation efforts.
HG0302	Lack of data on tourism's impact	Create an AI-powered tool that assesses the * Environmental * Social * Economic impacts of tourism on local communities and ecosystems. * Help in developing sustainable tourism practices.
HG0303	Limited understanding of diverse cultures	Design an interactive online course leveraging AI to * Raise awareness of diverse cultures, languages, and traditions. * Promote understanding and respect among global citizens. * Foster inclusivity.
HG0304	Difficulty connecting with people from different cultures	Establish a virtual exchange program that connects students through * AI-facilitated video conferencing. * Collaborative projects. * Promote cross-cultural understanding and friendship.
HG0305	Lack of information for travelers with disabilities	Develop an AI-driven platform that offers * Customized travel recommendations. * Accessibility information for tourists with disabilities. * Ensure inclusive and enjoyable travel experiences for all.
HG0306	Threats to cultural heritage sites	Build a predictive analytics tool powered by AI to * Assess risks to cultural heritage sites from natural disasters, climate change, and human activities. * Mitigate these risks and safeguard our shared cultural legacy.
HG0307	Loss of endangered languages	Create an AI-powered mobile app for * Revitalizing endangered languages. * Interactive lessons. * Speech recognition technology. * Facilitate community engagement initiatives to preserve linguistic diversity.
HG0308	Lack of cultural sensitivity among tourism professionals	Develop an online training program utilizing AI simulations to educate tourism professionals on * Cultural sensitivity. * Communication strategies. * Respectful behavior towards diverse travelers.
HG0309	Limited access to archaeological experiences	Design a virtual reality simulation that allows users to * Experience the process of archaeological excavation firsthand. * Use AI algorithms to analyze artifacts and reconstruct historical contexts.
HG0310	Difficulty identifying sustainable tourism options	Establish a certification program supported by AI analytics to recognize * Tourism businesses and destinations committed to sustainable practices. * Cultural preservation. * Community engagement.

HG0311	**AI/VR-Powered Virtual Museum Tours**	**Develop and simulate an AI/VR-powered platform that offers virtual tours of museums and cultural sites. The platform should provide interactive and immersive experiences, with AI narrators offering detailed information about exhibits and artifacts.**
HG0312	**Smart Heritage Preservation**	**Create a software solution that uses AI and machine learning to monitor and preserve heritage sites. The system should analyze environmental factors, predict potential damages, and suggest preventive measures to protect cultural heritage.**
HG0313	**Personalized Educational Content Delivery**	**Develop a platform that uses AI to deliver personalized educational content to students based on their learning styles, progress, and areas of interest. The platform should include interactive lessons, quizzes, and real-time feedback.**
HG0314	**Tourism Recommendation Engine**	**Create an AI-based recommendation engine that provides personalized travel itineraries and recommendations based on user preferences, past travel history, and current trends. The engine should also suggest off-the-beaten-path destinations to promote lesser-known tourist spots.**
HG0315	**Smart Classroom Management System**	**Develop a smart classroom management system that uses AI to monitor student engagement, track attendance, and provide real-time feedback to teachers. The system should also recommend personalized learning paths for students.**
HG0316	**Interactive Language Learning App**	**Create an AI-driven language learning app that offers interactive lessons, real-time pronunciation feedback, and cultural context to help users learn new languages effectively. The app should adapt to users' learning pace and provide personalized practice exercises.**
HG0317	**Virtual Reality Cultural Experiences**	**Develop a VR platform that offers immersive cultural experiences, allowing users to explore different cultures, traditions, and historical events through virtual reality. The platform should include interactive elements and educational content.**
HG0318	**AI-Based Historical Data Analysis**	**Create a software solution that uses AI to analyze historical data and uncover patterns, trends, and insights. The system should help historians and researchers gain a deeper understanding of historical events and their impacts.**
HG0319	**Smart Tour Guide App**	**Develop a smart tour guide app that uses AI to provide personalized tour experiences. The app should use GPS to guide tourists, offer historical information, and suggest nearby attractions based on user preferences and location.**
HG0320	**Educational Gamification Platform**	**Create a platform that gamifies educational content to make learning more engaging and interactive. The platform should include game-based lessons, quizzes, and competitions, encouraging students to learn through play.**

THEME 4 : Agriculture and Sustainability

PSID	TITLE	DESCRIPTION
HG0401	Optimizing Water Distribution Networks	Develop a comprehensive inspection system for water supply distribution lines to detect leaks, pilferage, damage, and other issues. Integrate cloud-based dashboards for data analytics, visualization, and report generation to enhance service delivery, repair efficiency, and pipeline condition assessment.
HG0402	AI-Driven Springshed Management	Create a GIS-based mapping system for springsheds that includes predictive models for water availability, decision-support systems, and automated alert systems. Utilize high-resolution LiDAR, water quality sensors, stream flow gauges, and weather stations for accurate monitoring and management.
HG0403	Water Harvesting Structures for Economic Activities	Develop a software solution to compute incomes generated by families involved in the use of Water Harvesting Structures (WHS) for activities like fisheries and aquatic vegetable cultivation. The solution should help assess the economic impact and benefits of WHS on the project community.
HG0404	Algorithm for Measuring FPO Income Increase	Design a program to measure the increase in income of Farmer Producer Organizations (FPOs) due to project interventions. Include features for computing incomes from demand-based services, operation of Custom Hiring Centres, and marketing of agricultural produce.
HG0405	Pro Planet Person App	Develop a mobile application that tracks users' activities and nudges them toward sustainable alternatives in real-time. The app should offer suggestions on reducing environmental impact and promote eco-friendly behaviors across various activities like food delivery and online ordering.
HG0406	Vegetation Measurement Using Satellite Imagery	Create a solution for identifying vegetation height below transmission conductors using satellite imagery and machine learning. The system should predict tree growth patterns and raise alarms for necessary lopping to maintain safe clearance distances.
HG0407	ESG Intervention in Higher Education	Develop a platform for planning, executing, and monitoring Environmental, Social, and Governance (ESG) initiatives in higher education institutions. The solution should include dynamic dashboards, collaborative tools, and best practices to promote sustainability on campuses.
HG0408	AI-Assisted Telemedicine Kiosk for Rural India	Implement an AI-assisted telemedicine kiosk for rural areas that enables easy access to expert doctors. Integrate biometric scanners, online consultations, and local healthcare worker support to improve healthcare delivery in villages.
HG0409	Air and Water Quality Index Monitoring	Develop a comprehensive system for continuous monitoring and reporting of air and water quality. The solution should include tools for calculating Air Quality Index (AQI) and Water Quality Index (WQI), enabling clear communication of environmental health.
HG0410	Domestic Waste Management Solutions	Create innovative solutions for promoting responsible waste disposal in residential communities. Include educational campaigns, behavioral change strategies, community engagement activities, and technology-driven waste management tools.

HG0411	**Analytics Based on Government Land Information System (GLIS) Data**	**Develop analytics solutions leveraging GLIS data for urban planning, infrastructure development, environmental conservation, land management, and socio-economic analysis. The tools should support evidence-based decision-making and sustainable development.**
HG0412	**AI-Based Generative Design of Hydro Power Plants**	**Create systems for AI-based generative design of hydro power plants, including civil structures, hydro-mechanical, and electro-mechanical equipment. The solution should optimize design processes for efficiency and sustainability.**
HG0413	**AI-Enabled Water Well Predictor**	**Develop a web-based system that predicts water well suitability at user-selected locations using NAQUIM data. Provide information on water-bearing zones, expected discharge, suitable drilling techniques, and water quality.**
HG0414	**Digital Technology for Non-Revenue Water (NRW) Management**	**Create a digital system to trace and manage non-revenue water in distribution networks. The solution should use data analytics and smart technologies to identify water loss sources, improve utility performance, and convert NRW to revenue water.**
HG0415	**Calculating Water Footprints Using Digital Technology**	**Develop an app or website to calculate the water footprints of daily use items using AI, Big Data, and Blockchain. The tool should provide insights into water usage, promote efficiency, and support conservation efforts.**
HG0416	**AI-Driven Crop Management System**	**Develop an AI-driven crop management system that integrates real-time data to monitor soil conditions, weather patterns, and crop health. Provide actionable insights to optimize irrigation, fertilization, and pest control practices.**
HG0417	**Climate-Resilient Crop Advisory System**	**Create an AI-based advisory system recommending climate-resilient crop varieties based on historical weather data, climate projections, and soil characteristics. Assist farmers in selecting crops suited to climate variability and extreme weather events.**
HG0418	**AI-Based Pest Detection and Control System**	**Design an AI-based system utilizing image recognition and weather data to detect pests, identify pest types, predict outbreaks, and recommend targeted control measures. Minimize the use of harmful pesticides and promote eco-friendly pest management**
HG0419	**Difficulty planning and implementing urban agriculture practices**	**Create a planner tool that uses AI to support sustainable urban agriculture initiatives based on * Urban planning data * Climate information * Resource availability. * Recommend suitable crops and growing techniques. * Provide guidance on resource-efficient and space-effective urban farming practices for local food production and community resilience.**
HG0420	**Challenges in managing CSA initiatives**	**Design a management system that leverages AI to support Community Supported Agriculture (CSA) initiatives based on * Member preferences * Crop availability * Farm productivity data. * Facilitate communication between farmers and members. * Optimize share distribution. * Promote sustainable farming practices and community engagement.**

THEME 5 : Cybersecurity, Blockchain and Financial Inclusion

PSID	TITLE	DESCRIPTION
HG0501	AI-Powered Threat Detection System	Develop an AI-based cybersecurity solution that detects and mitigates threats in real-time. The system should analyze network traffic, user behavior, and system logs to identify potential cyberattacks, data breaches, and malicious activities.
HG0502	Secure IoT Network Management	Create a secure IoT network management platform that uses AI to monitor and protect IoT devices from cyber threats. The system should detect vulnerabilities, identify unauthorized access attempts, and automatically implement security measures to safeguard connected devices.
HG0503	Blockchain-Based Data Privacy Solution	Develop a blockchain-based solution that ensures data privacy and security. Blockchain technology provides a tamper-proof and decentralized ledger for storing data, allowing users to control access and share data securely with authorized parties.
HG0504	AI-Enhanced Identity Verification	Create an AI-based identity verification system that uses biometric data (facial recognition, fingerprints) and machine learning to authenticate users. The system should ensure secure access to online services and prevent fraudulent activities.
HG0505	Cybersecurity Awareness Training Platform	Develop a platform that provides interactive cybersecurity awareness training for individuals and organizations. The platform should educate users on cybersecurity best practices, phishing scams, and social engineering tactics to help them stay safe online.
HG0506	Secure Mobile Payment Solution	Create a secure mobile payment platform that uses AI and encryption to protect financial transactions. The system should leverage AI for fraud detection and risk analysis, while ensuring secure communication and data transfer during mobile payments.
HG0507	AI-Powered Phishing Detection Tool	Develop an AI-based tool that detects phishing emails and websites. The system should analyze email content, sender addresses, and website URLs to identify suspicious elements commonly used in phishing attempts, protecting users from falling victim to scams.
HG0508	Secure Cloud Storage Solution	Create a secure cloud storage platform that uses encryption and AI to protect data. The system should employ robust encryption techniques to safeguard sensitive information and leverage AI for anomaly detection and intrusion prevention within the cloud storage environment.
HG0509	AI-Driven Data Anonymization	Develop an AI-based system that anonymizes sensitive data to protect user privacy. The system should use techniques like tokenization and differential privacy to remove personally identifiable information from datasets while preserving their analytical value.
HG0510	Blockchain for Secure Voting System	Create a blockchain-based voting system that ensures secure, transparent, and tamper-proof elections. The system should leverage blockchain technology to encrypt votes, record them immutably on a distributed ledger, and enable secure remote voting, reducing the risk of fraud and increasing voter confidence in the electoral process.

HG0511	**Limited access to secure financial services in rural areas**	**Develop a financial inclusion platform for rural India to * Enable secure and transparent financial transactions. * Facilitate access to banking services. * Promote economic empowerment among underserved populations.**
HG0512	**Lack of transparency and efficiency in microfinance**	**Create an AI-powered microfinance management system with blockchain security to * Enhance security and transparency in lending practices. * Automate loan approvals. * Manage repayment schedules. * Ensure fair and accountable financial services for borrowers.**
HG0513	**High costs and inefficiencies in international money transfers**	**Design a secure blockchain-based remittance solution to * Streamline cross-border transactions. * Reduce costs and increase efficiency for remittance corridors involving India. * Ensure traceability and security in international money transfers.**
HG0514	**AI-Driven Personal Financial Management App for Indian Millennials**	**Develop an AI-driven personal financial management app targeted at millennials in India. The app should provide personalized financial advice, automate savings and investment strategies, and offer insights into spending habits, empowering users to make informed financial decisions and achieve their long-term financial goals.**
HG0515	**Difficulty obtaining loans for small businesses with limited credit history**	**Create an AI-powered credit scoring system for India to * Analyze alternative data sources. * Use machine learning algorithms to assess creditworthiness accurately. * Promote financial inclusion and access to loans.**
HG0516	**AI-Enhanced Threat Intelligence Platform**	**Build an AI-powered threat intelligence platform that collects and analyzes data from various sources to predict and prevent cyber threats. The platform should use machine learning to identify patterns and anomalies indicative of cyber-attacks. Expected Output: An operational AI-enhanced threat intelligence platform with real-time threat detection, analysis, and reporting capabilities.**
HG0517	**Cybersecurity Framework for Autonomous Vehicles**	**Design a cybersecurity framework to protect autonomous vehicles from cyber threats. The framework should address vulnerabilities in vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications, as well as onboard systems.**
HG0518	**Vulnerability to fraudulent activities in the banking sector**	**Create an AI-driven fraud detection and prevention system for Indian banking systems to * Analyze transactional data, user behavior, and market trends. * Identify and mitigate fraudulent activities. * Safeguard the financial interests of Indian banks and their customers.**
HG0519	**Cybersecurity Portal for Effective Management of Servers and Firewalls**	**Design a centralized and comprehensive portal for REC dedicated to managing servers, firewalls, load balancers, software licenses, user access, and other data center hardware components. The portal should address the following: ● Fragmented Infrastructure Management: Centralize the control of disparate systems and tools for managing infrastructure. ● Manual and Time-Consuming Processes: Automate provisioning, monitoring, patching, and license management to save resources. ● Limited Visibility and Control: Enhance visibility into the status, performance, and security of hardware components. ● Compliance and License Management: Track and manage software licenses and ensure compliance with licensing agreements. ● User Access Management: Define user roles and permissions, ensure secure authentication and authorization, and maintain an auditable log of user activities.**
HG0520	**AI-Powered Malware Detection and Removal Tool**	**Create an AI-based tool to detect and remove malware from computer systems. The tool should use machine learning to identify new and unknown malware variants and provide automated remediation to minimize system downtime.**

THEME 6 : Disaster Management and Space Technology

PSID	TITLE	DESCRIPTION
HG0601	Difficulty detecting heat islands and assessing disaster vulnerability	Develop a satellite-based monitoring system to * Detect urban heat islands using thermal imaging data. * Assess their impact on disaster vulnerability in densely populated areas. * Provide early warning alerts to urban planners and emergency responders.
HG0602	Challenges in accurately assessing landslide risk	Create an integrated system that combines * Satellite imagery * Machine learning algorithms * Historical landslide data to assess landslide risk in hilly and mountainous regions. * Identify high-risk areas and prioritize preventive measures.
HG0603	Inefficient flood monitoring and lack of timely warnings	Design a spaceborne radar system using synthetic aperture radar (SAR) technology to * Monitor water levels. * Detect potential flood events in river basins and coastal areas. * Provide real-time flood mapping and early warning alerts.
HG0604	Delays in detecting and warning of tsunamis	Develop a satellite-based system for early detection and warning of tsunamis that integrates data from * Seismometers * Ocean buoys * Satellite sensors to * Accurately identify seismic events. * Generate timely alerts to coastal communities.
HG0605	Difficulty in rapid assessment and response in remote locations	Create a swarm of unmanned aerial vehicles (UAVs) equipped with sensors and cameras to perform * Rapid disaster assessment. * Response missions in remote and inaccessible areas. * Facilitate search and rescue, damage assessment, and delivery of emergency supplies.
HG0606	Challenges in early detection and monitoring of forest fires	Design a satellite-based system for early detection and monitoring of forest fires using * Multispectral imaging * Thermal sensors onboard satellites to detect heat signatures associated with wildfires. * Enable prompt response and containment of fire outbreaks.
HG0607	Delays in damage assessment and recovery planning	Develop a satellite-based system for rapid assessment of earthquake damage and planning of recovery efforts that utilizes * High-resolution satellite imagery * Artificial intelligence algorithms to assess * Building damage * Infrastructure disruption * Population displacement. * Facilitate targeted relief and reconstruction efforts.
HG0608	Lack of comprehensive data on urban vulnerability to disasters	Create a remote sensing and geographic information system (GIS) platform to map * Urban resilience * Vulnerability to natural disasters. * Integrate * Satellite imagery * Demographic data * Infrastructure maps to identify * Critical infrastructure * Vulnerable populations * Disaster risk hotspots.
HG0609	Difficulty in monitoring environmental quality and managing pollution	Design a spaceborne hyperspectral imaging system to monitor * Environmental quality * Manage pollution in urban and industrial areas. * Capture spectral signatures of land cover, vegetation health, and pollutant concentrations from satellite images.
HG0610	Disrupted communication during disaster recovery	Develop a satellite-based emergency communication network to * Restore connectivity * Facilitate communication during post-disaster recovery operations. * Deploy small satellites with communication payloads to provide temporary communication links in disaster-stricken areas.
HG0611	Inefficient coordination among disaster response agencies	Design an AI-driven software platform to coordinate disaster response efforts across multiple agencies and organizations. * Integrate real-time data streams * Weather forecasts * Sensor data * Social media feeds to * Optimize resource

		allocation * Prioritize actions * Facilitate communication among response teams during emergencies.
HG0612	Lack of resources for community preparedness	Create a mobile application to empower communities with disaster preparedness and response resources, providing * Educational materials * Emergency contact information * Evacuation routes * Real-time alerts for various types of disasters.
HG0613	Limited tools for assessing flood risk and evaluating mitigation measures	Develop a web-based simulation tool for assessing flood risk and evaluating the effectiveness of flood mitigation measures that incorporates * Hydrological models * Geographic information system (GIS) data * Scenario-based simulations to analyze flood dynamics, predict inundation extents, and guide decision-making for flood management and infrastructure planning.
HG0614	Challenges in ensuring supply chain resilience during disasters	Design a blockchain-based platform to * Enhance supply chain resilience * Facilitate disaster recovery efforts. * Enable transparent and traceable supply chain transactions, secure data sharing among stakeholders, and efficient allocation of resources for post-disaster reconstruction and humanitarian aid distribution.
HG0615	Delays in damage assessment and prioritizing response efforts	Create a crowdsourced damage assessment application to collect and analyze information on * Infrastructure damage * Humanitarian needs in disaster-affected areas. * Enable users to report damage observations, upload photos or videos, and provide geospatial coordinates, facilitating rapid assessment and prioritization of response efforts by disaster management agencies and relief organizations.
HG0616	Limited visibility into global disaster events	Develop a constellation of CubeSats equipped with sensors and imaging payloads to provide real-time monitoring of global disaster events, such as * Wildfires * Floods * Earthquakes. * Enable continuous observation of disaster-prone areas, rapid detection of emerging threats, and timely dissemination of actionable information to emergency responders and decision-makers.
HG0617	Inaccurate flood risk assessment in urban areas	Design a spaceborne LiDAR (Light Detection and Ranging) system for mapping urban flood hazards and predicting flood risk * Measure surface elevation * Identify flood-prone zones * Model flood inundation extents. * Support urban planning, flood forecasting, and disaster resilience strategies in vulnerable communities.
HG0618	Challenges in early detection, tracking, and post-fire recovery planning	Create a satellite-based Earth observation platform for monitoring wildfires and assessing fire behavior that utilizes * High-resolution optical and thermal sensors * Detect fire hotspots * Track fire progression * Estimate burned area extent. * Enable early detection, rapid response, and post-fire recovery planning by forest management agencies and firefighting teams.
HG0619	Limitations in detecting landslides through cloud cover or vegetation	Design a spaceborne synthetic aperture radar (SAR) system for detecting and monitoring landslides that utilizes microwave radar imaging to * Penetrate cloud cover and vegetation * Detect ground displacement patterns indicative of landslide activity. * Provide timely alerts to communities at risk of landslides, supporting disaster preparedness and risk mitigation efforts.
HG0620	Difficulty in forecasting geomagnetic disturbances and protecting infrastructure	Develop a satellite-based monitoring system for tracking solar storms and predicting space weather phenomena that integrates data from * Solar observatories * Magnetometers * Space weather satellites to forecast * Geomagnetic disturbances * Auroral activity * Radio blackouts. * Enable mitigation measures to protect satellite assets, power grids, and GPS navigation systems from space weather-related disruptions.