



**WHITE TRACK TECHNOLOGIES PVT LTD TRIVANDRUM**  
**HACKTRACK 2025**



Statement Id	Problem Statement	Description	Category
WT0101	Development of a Biodegradable Plastic Alternative Using Microbial Fermentation	Design and develop an eco-friendly, biodegradable plastic substitute produced through microbial fermentation processes. The solution should focus on sustainability, cost-effectiveness, and scalability to replace conventional petroleum-based plastics.	BioTech
WT0102	AI-Based System for Predicting Protein Folding Patterns for Drug Discovery	Develop an artificial intelligence model capable of predicting protein folding structures to accelerate the process of drug discovery and molecular design. The system should leverage bioinformatics data and machine learning techniques to provide accurate structural predictions.	BioTech
WT0103	Production of Ethanol from Fruit Waste Using Yeast Fermentation	Create a bio-based ethanol production model using fruit waste as the primary substrate through yeast fermentation. The project should aim to reduce organic waste and promote renewable energy generation through sustainable biofuel production methods.	BioTech
WT0104	Evaluation of Antibacterial Properties of Natural Products Like Honey and Turmeric	Design an experimental study or system to evaluate the antibacterial efficacy of natural substances such as honey, turmeric, or herbal extracts. The goal is to identify potential natural alternatives to synthetic antibiotics and chemical preservatives.	BioTech

WT0105	Enhancement of Plant Growth Using Biofertilizers Compared to Chemical Fertilizers	Develop and test a biofertilizer-based approach to improve plant growth, yield, and soil health compared to conventional chemical fertilizers. The project should focus on environmental impact, sustainability, and agricultural productivity.	BioTech
WT0201	Development of an Automated Smart Irrigation System for Water Conservation	Design and develop a technology-driven irrigation system that automatically adjusts water supply based on soil moisture, weather data, and crop requirements. The goal is to save water, increase crop yield, and minimize manual labour.	AgriTech
WT0202	AI and Drone-Based Early Detection System for Crop Diseases and Pest Attacks	Create an AI-powered or drone-based solution capable of detecting crop diseases and pest infestations at an early stage using image analysis and real-time monitoring, helping farmers take timely preventive actions.	AgriTech
WT0203	Affordable Digital Tool for Monitoring Soil Health and Nutrient Levels	Develop a low-cost, easy-to-use digital system that allows farmers to assess soil health parameters such as pH, moisture, and nutrient content to make data-driven decisions for fertilizer use and crop planning.	AgriTech
WT0204	Data Analytics Platform for Predicting Crop Market Prices and Sales Planning	Build a data-driven analytics platform that predicts crop prices based on historical data, demand patterns, and seasonal trends to help farmers plan their production and sales for maximum profitability.	AgriTech

WT0205	Online Marketplace Connecting Farmers Directly to Consumers or Retailers	Design an online platform or mobile app that enables direct interaction between farmers and consumers/retailers, eliminating middlemen, ensuring fair prices, and promoting transparency in agricultural trade.	AgriTech
WT0206	Smart Technology Solution to Reduce Food Waste in Harvesting, Storage, and Transport	Develop an IoT or AI-based system that monitors and optimizes post-harvest processes such as storage temperature, humidity, and transportation logistics to minimize food spoilage and waste.	AgriTech
WT0207	Blockchain-Based Transparent Food Supply Chain Management System	Create a blockchain-enabled system to track food products from farm to consumer, ensuring traceability, authenticity, and transparency across the agricultural supply chain.	AgriTech
WT0208	AI and Weather-Data-Driven System for Climate-Resilient Farming	Develop a predictive system that uses AI and real-time weather data to help farmers adapt to climate change by suggesting suitable crops, irrigation schedules, and protective measures against extreme weather conditions.	AgriTech
WT0209	Mobile App for Tracking Nutrition and Sustainability of Food Products	Design an app that enables users to scan or search food products and receive detailed information on their nutritional content, origin, and environmental sustainability, encouraging healthy and eco-friendly consumption habits.	AgriTech
WT0210	AI-Powered Chatbot for Farmer Assistance and Government Scheme Awareness	Develop an AI chatbot that provides farmers with instant access to agricultural advice, pest management tips, weather forecasts, and updates about government schemes, all through a user-friendly interface in local languages.	AgriTech
WT0301	Real-Time Route Optimization for Delivery Efficiency	Develop a real-time route optimization system that reduces traffic delays, fuel consumption, and carbon emissions using live traffic data and AI-based decision-making.	Logistics & Mobility
WT0302	Predictive Vehicle Maintenance Using IoT and AI	Design a predictive maintenance platform that uses sensor data and machine learning to identify potential vehicle issues before breakdowns occur, improving fleet reliability and reducing downtime.	Logistics & Mobility

WT0303	Smart Monitoring System for Temperature-Sensitive Goods	Create an IoT-based temperature and humidity monitoring system to ensure the safe transport of perishable or sensitive goods by providing alerts during deviations from safe conditions.	Logistics & Mobility
WT0304	Intelligent Cargo Loading and Space Optimization Assistant	Develop a smart loading assistant that uses AI and sensor data to maximize cargo space, ensure balanced weight distribution, and enhance transport safety.	Logistics & Mobility
WT0305	Autonomous Fleet Rebalancing for Shared Mobility Systems	Build an automated system that dynamically rebalances shared mobility fleets (EVs, bikes, or scooters) across locations based on real-time demand and availability.	Logistics & Mobility
WT0306	Real-Time Smart Security System for Cargo and Vehicle Protection	Design an intelligent security framework that detects cargo theft, tampering, or unauthorized access using GPS tracking, motion sensors, and AI-based anomaly detection.	Logistics & Mobility
WT0307	AI-Powered EV Charging Scheduler for Fleet Optimization	Develop an AI-driven system that intelligently schedules EV charging for logistics fleets to minimize downtime, reduce energy costs, and optimize charging station usage.	Logistics & Mobility
WT0308	Multi-Modal Route Planning System for Sustainable Logistics	Create a logistics platform that integrates road, rail, air, and water transport data to recommend routes balancing time, cost, and environmental impact.	Logistics & Mobility
WT0309	Drone-Assisted Last-Mile Delivery System	Develop a hybrid delivery model where drones and ground vehicles coordinate for efficient last-mile delivery in congested or hard-to-reach urban areas.	Logistics & Mobility
WT0310	AI and Computer Vision System for Cargo Safety and Compliance	Design a computer vision-based system that automatically detects unsafe cargo loading, overloading, or poor vehicle conditions to enhance safety and regulatory compliance.	Logistics & Mobility

WT0401	Optimization of Solar Energy Systems in Urban Environments Using Smart Technology	Develop a technology-driven solution to enhance the efficiency of solar energy systems in densely populated urban areas by optimizing panel placement, energy capture, and real-time performance monitoring through AI and IoT.	Renewable Energy
WT0402	Affordable Renewable Energy Solutions for Rural Electrification	Design innovative, cost-effective renewable energy systems—such as mini-grids, solar home kits, or bioenergy models—to help rural communities’ transition from conventional power to sustainable energy sources.	Renewable Energy
WT0403	AI and Data Analytics for Smart City Energy Consumption Optimization	Create an AI-powered energy management platform that collects and analyses consumption data in real time to identify wastage, predict energy demand, and optimize power usage in smart cities.	Renewable Energy
WT0404	Digital Tools to Promote Renewable Energy Adoption and Carbon Tracking	Develop a mobile or web-based application that encourages households to adopt renewable energy solutions while tracking their energy consumption patterns and carbon footprint reduction.	Renewable Energy
WT0405	Blockchain-Based Transparent Renewable Energy Trading System	Design a blockchain-enabled platform that facilitates peer-to-peer renewable energy trading, ensuring transparency, fairness, and traceability in decentralized energy transactions.	Renewable Energy
WT0406	Sustainable and Accessible Electric Vehicle (EV) Charging Infrastructure	Develop a smart EV charging solution that optimizes power distribution, integrates renewable sources, and enhances accessibility for users in both urban and rural regions.	Renewable Energy
WT0407	IoT-Based Energy Distribution Management from Multiple Renewable Sources	Create an IoT-integrated smart grid system that dynamically balances and distributes energy from various renewable sources such as solar, wind, and hydro to maintain grid stability and efficiency.	Renewable Energy
WT0408	Recycling and Repurposing Solutions for Solar Panels and Wind Turbine Components	Develop innovative methods or technologies to recycle, repurpose, or safely dispose of decommissioned solar panels and wind turbine materials to promote circular sustainability.	Renewable Energy
WT0409	Gamified Mobile Application to Encourage Renewable Energy Usage	Design a gamified app that motivates users to adopt renewable energy practices, reduce electricity wastage, and earn rewards or badges for sustainable behaviour.	Renewable Energy

WT0410	Community-Based Energy Sharing and Equity Model	Develop a decentralized, community-level energy sharing platform where households can exchange surplus renewable energy, ensuring equitable distribution and promoting sustainability.	Renewable Energy
WT0501	Personal Carbon Footprint Tracker	Develop a mobile or web application that calculates an individual's daily carbon emissions based on lifestyle activities and provides personalized suggestions to reduce their environmental impact through behaviour change and sustainable choices.	Environment & Disaster Management
WT0502	Smart Waste Segregation System	Design an AI-powered image recognition system capable of identifying and classifying recyclable and non-recyclable waste materials to automate waste segregation and promote effective recycling management.	Environment & Disaster Management
WT0503	Urban Heat Map and Cooling Planner	Create a web-based dashboard that leverages satellite imagery and open city data to detect urban heat island zones and recommend cooling interventions such as green cover expansion or reflective surface placement.	Environment & Disaster Management
WT0504	Renewable Energy Forecast and Optimizer	Build an AI-driven forecasting model that predicts solar or wind energy generation using real-time weather data and optimizes grid load balancing to enhance renewable energy efficiency and reliability.	Environment & Disaster Management
WT0505	Climate Awareness and Action Platform	Develop a gamified web or mobile platform that encourages users to log eco-friendly activities, earn reward points, and compete with others locally, promoting environmental awareness and collective action on climate change.	Environment & Disaster Management

WT0506	Real-Time Disaster Alert System	Create a mobile alert system that integrates weather APIs, satellite data, and geolocation to provide early warnings about natural disasters like floods or cyclones and guide users to nearby safe zones.	Environment & Disaster Management
WT0507	Crowdsourced Disaster Reporting Platform	Design a mobile or web application where citizens can report incidents such as floods, landslides, or fires in real time with GPS coordinates and image uploads, helping authorities respond faster and more accurately.	Environment & Disaster Management
WT0508	AI-Powered Flood Prediction Model	Develop a predictive AI model that analyses rainfall, river flow, and terrain data to identify flood-prone regions and alert authorities in advance to enable timely evacuation and disaster preparedness.	Environment & Disaster Management
WT0509	Post-Disaster Resource Tracking System	Build a web-based logistics platform to track and manage relief materials and resources during disaster recovery, ensuring transparent distribution and efficient coordination among government and NGOs.	Environment & Disaster Management
WT0510	Disaster Damage Assessment Using Drone or Satellite Imagery	Implement a computer vision-based system that processes aerial or satellite imagery to assess post-disaster infrastructure damage, helping authorities prioritize rescue and reconstruction operations.	Environment & Disaster Management
WT0601	Local Micro-Job Matching Platform for Skilled Youth	Develop a digital platform that connects skilled youth with micro or short-term job opportunities in their local area, enabling income generation and reducing unemployment through community-based hiring.	Education & Employability

WT0602	AI-Powered Personalized Learning System	Create an AI-driven learning solution that customizes educational content based on each student's learning pace, style, and interests to make education more adaptive and effective.	Education & Employability
WT0603	Digital Portfolio Platform for College Students	Design a platform that allows college students to showcase their practical projects, skills, and achievements to potential recruiters, bridging the gap between academic learning and employability.	Education & Employability
WT0604	Collaborative Peer-to-Peer Learning Application	Build an interactive digital tool that enables students to learn collaboratively through peer discussions, shared projects, and gamified challenges to enhance engagement and teamwork.	Education & Employability
WT0605	Rural Skill Training Impact Measurement Dashboard	Develop a data-driven system that tracks and visualizes the long-term impact of skill development programs in rural areas, helping policymakers and organizations improve outcomes.	Education & Employability
WT0606	Interactive Learning Platform for Vocational and Trade Skills	Create a technology-based solution—using AR/VR, simulations, or mobile apps—that provides practical, hands-on learning experiences for trades such as plumbing, tailoring, or mechanics.	Education & Employability
WT0607	AI Interview Practice and Feedback Application	Design an AI-based app that simulates real interview scenarios, evaluates user responses using speech and text analysis, and provides instant feedback for improvement.	Education & Employability
WT0608	Virtual Mentorship Platform Connecting Students with Industry Experts	Build an online mentorship network where students can connect with professionals and industry experts for career guidance, project advice, and skill development through one-on-one or group sessions.	Education & Employability

WT0609	Job Market-Aligned Curriculum Feedback System	Develop a platform that continuously analyses job market trends and provides actionable feedback to educational institutions for updating curricula to meet industry needs.	Education & Employability
WT0610	Skill-Based Community Project Reward System	Design a platform that rewards students for applying their skills in community-oriented projects—such as environmental work, education, or local innovation—encouraging practical learning and social responsibility.	Education & Employability
WT0701	Smart Waste Classification and Tracking System	Develop a technology-driven solution that identifies, categorizes, and tracks major types of waste—such as biodegradable, recyclable, hazardous, and electronic—using IoT sensors or AI to streamline modern waste management operations.	Waste Management
WT0702	Source-Level Waste Segregation and Awareness Platform	Design a system or mobile app that encourages and assists individuals and organizations to segregate waste at the source through smart bins, visual guidance, and reward-based awareness programs for effective recycling.	Waste Management
WT0703	Environmental and Health Risk Monitoring from Improper Waste Disposal	Create a data analytics or visualization platform that monitors and predicts the environmental and public health impacts caused by improper waste disposal, helping authorities take preventive and corrective measures.	Waste Management
WT0704	IoT and AI-Based Smart Waste Management Network	Build an integrated IoT and AI solution that optimizes waste collection routes, monitors bin fill levels, detects illegal dumping, and automates recycling processes to improve urban waste management efficiency.	Waste Management

WT0705	Community Waste Reduction and Recycling Engagement Platform	Develop a digital platform or gamified mobile app that educates and motivates individuals and communities to reduce daily waste generation, adopt recycling habits, and collectively move toward a zero-waste lifestyle.	Waste Management
WT0801	Digital Healthcare Access for Rural Communities	Create a digital healthcare platform that enhances medical access in rural areas through telemedicine, AI-based preliminary diagnosis, and portable health monitoring kits. The goal is to bridge the gap between urban and rural healthcare infrastructure.	Rural & Urban Development
WT0802	Smart Transportation and Traffic Optimization System	Design a data-driven transportation system that reduces traffic congestion using IoT, GPS, and AI analytics. Features may include real-time route optimization, intelligent traffic signal coordination, and public transport monitoring.	Rural & Urban Development
WT0803	Technology-Enabled Education for Rural Schools	Develop an e-learning solution tailored for rural schools that works efficiently even in low-bandwidth environments. The system may include interactive digital lessons, teacher-assistive tools, and AI-based student progress tracking.	Rural & Urban Development
WT0804	Smart Water Management and Conservation System	Create a technology-based solution for efficient water management in both urban and rural areas using IoT sensors, predictive analytics, and smart meters to monitor usage, detect leaks, and track water quality.	Rural & Urban Development
WT0805	Smart Urban Waste Management System	Develop an IoT and AI-based solution to improve waste collection, segregation, and recycling efficiency in urban areas. The system could include smart bins with sensors, automated waste sorting, and citizen engagement apps to promote cleaner cities and sustainability.	Rural & Urban Development
WT0901	AI Chatbot for College Queries	Develop a chatbot that answers college-related FAQs such as admission procedures, course details, and event information using NLP.	Artificial Intelligence
WT0902	Real-Time Local Language Translator	Create an AI-based translator that converts speech or text into regional languages to promote accessibility and inclusivity.	Artificial Intelligence

WT0903	Fake News Detection System	<i>Design a model that identifies and flags fake or misleading news articles using NLP and sentiment analysis.</i>	Artificial Intelligence
WT0904	Voice-Controlled Personal Assistant	<i>Build a voice-activated assistant tailored for students or professionals to manage schedules, reminders, and tasks.</i>	Artificial Intelligence
WT0905	AI Resume Screening Tool	Develop an intelligent system that analyses resumes and matches them to job descriptions using keyword extraction and ranking algorithms.	Artificial Intelligence
WT0906	Fraud Detection in Financial Transactions	Build an ML model to detect anomalies or fraudulent activities in digital payments and banking systems.	Artificial Intelligence
WT0907	Sign Language Interpreter using AI	Create a system that converts sign language gestures from images or videos into text or speech in real time.	Artificial Intelligence
WT0908	Natural Language Code Generator	Develop an AI tool that generates source code based on plain English instructions using NLP and code synthesis techniques.	Artificial Intelligence
WT0909	AI-Based Smart Traffic Management	Build a real-time traffic monitoring system using video data and ML to optimize signal timings and reduce congestion.	Artificial Intelligence
WT0910	Virtual Study Assistant	Create an AI assistant that plans personalized study schedules, tracks learning progress, and provides adaptive learning recommendations.	Artificial Intelligence
WT1001	Smart Learning Platform	Develop an ICT-based learning platform that enables students to learn effectively online, even with low or unstable internet connectivity.	InfoComm
WT1002	Digital Health Assistant	Create an app or system that connects patients in rural or remote areas with doctors through telemedicine and mobile communication tools.	InfoComm
WT1003	E-Government Access Portal	Build a user-friendly digital platform that allows citizens to easily access, track, and submit government services and applications online.	InfoComm
WT1004	Cyber Safety Awareness App	Design an interactive ICT solution (app, website, or game) that educates users on online safety, privacy protection, and digital ethics.	InfoComm
WT1005	Smart Farming System	Develop an ICT-based tool that provides farmers with real-time insights on weather, soil conditions, pest control, and crop management.	InfoComm

WT1006	Disaster Communication Network	Create a reliable ICT system that enables people to communicate and access emergency services during natural disasters or network failures.	InfoComm
WT1007	Employment Information Hub	Design a digital portal that connects job seekers with available opportunities, internships, and training programs through ICT integration.	InfoComm
WT1008	Environment Monitoring App	Build an ICT-based mobile or web app that tracks environmental parameters like air, water, or noise pollution and raises public awareness.	InfoComm
WT1009	Smart Waste Management System	Design an ICT-driven solution that optimizes waste collection routes, monitors bin levels, and supports sustainable waste management.	InfoComm
WT1010	Digital Market for Local Businesses	Develop a digital marketplace that helps small and local businesses leverage ICT tools to sell products online and expand customer reach.	InfoComm
WT1101	QR-Based Offline Payment System	Design a secure QR-based payment solution that works seamlessly in rural or low-connectivity areas, enabling offline digital transactions that sync automatically once the network is available.	FinTech
WT1102	Voice-Authenticated UPI System	Develop a voice-enabled UPI payment system to help senior citizens and visually impaired users make transactions using simple voice commands with multi-language support.	FinTech
WT1103	Smart Payment Splitter App	Build an app that automatically splits and settles shared expenses for groups — such as roommates, events, or trips — through UPI or wallet-based transactions.	FinTech
WT1104	Expense Tracker with Receipt Scanner	Develop an AI-powered mobile app that scans transaction receipts, recognizes payment details, and updates them in a personal finance or budget management dashboard.	FinTech

WT1201	Personalized Marketing Engine with Generative AI	Build a generative AI-powered marketing system that automatically creates personalized campaigns, visuals, and messages based on customer behaviour, preferences, and trends to boost engagement and conversion rates.	Enterprise Application
WT1202	AI-Powered Customer Support Agent (Voice + Chat)	Design an intelligent, empathetic AI agent capable of understanding tone, emotion, and context in both voice and text to resolve customer issues instantly — reducing support costs and improving satisfaction.	Enterprise Application
WT1203	Sentiment & Trend Analyzer for Business Growth	Create an AI system that tracks customer reviews, social media chatter, and competitor mentions to identify market trends and recommend real-time marketing strategies for brand improvement.	Enterprise Application
WT1204	Agentic AI for Workflow Automation	Develop an autonomous AI assistant that learns from daily employee activities like emails, scheduling, and reporting — automating repetitive tasks to improve productivity and operational efficiency.	Enterprise Application
WT1205	Intelligent Inventory & Supply Chain Optimizer	Build an AI solution that predicts product demand, manages inventory levels, and optimizes delivery routes using predictive analytics to reduce delays, costs, and overstock issues.	Enterprise Application
WT1206	Dynamic Pricing Engine	Create an AI-driven pricing model that adjusts product or service prices in real-time based on demand, competitor behaviour, and customer sentiment to maximize revenue and market competitiveness.	Enterprise Application
WT1207	AI-Driven Business Decision Support System	Design a unified AI dashboard that integrates data from finance, HR, marketing, and operations to generate insights and predictive recommendations for better business decision-making.	Enterprise Application

WT1208	Predictive Business Health Monitor	Build an AI system that monitors revenue, expenses, and operational KPIs to detect financial or strategic risks early — empowering businesses to act proactively instead of reactively.	Enterprise Application
WT1209	Smart Sales Agent: Autonomous Lead Conversion Assistant	Create an AI sales assistant that identifies, contacts, and follows up with leads automatically via multiple channels like email, WhatsApp, and LinkedIn to increase sales conversion rates.	Enterprise Application
WT1210	Agentic AI Recruiter	Develop an AI-based recruiting assistant that screens resumes, ranks candidates, and schedules interviews intelligently, reducing hiring time and human bias while improving candidate matching accuracy.	Enterprise Application
WT1301	Others	Showcase your creativity through any project idea of your choice.	Innovative Project

For White Track Technologies,

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