



X हिंदुस्थान
ड्रायफ़्रूट सेंटर

presents

TSEC HACKS 25

Problem Statements



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Web / App Domain



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QuickVeg

Don has a keen interest in improving the way people shop for vegetables, especially in local markets, where prices fluctuate, and the process can often be time-consuming. One day, while visiting a vegetable market, Don had noticed how vendors set their prices, and how customers had to search through various vendors to find the best deals. He realized, “What if there was an app that could connect customers to vendors, helping them save time, find the best prices, and streamline their shopping experience and to navigate the local markets more efficiently?” Can you help Don to design such a web/app?

Potential Features:

- Create a seamless search functionality that allows users to quickly locate vendors or desired vegetables nearby.
- Implement notifications for price drops and a wishlist feature to help users track their preferred items.
- Develop a system for vendors to list vegetables with real-time price updates to ensure transparency and accuracy.
- Add a prebooking option with reminders to minimize cancellations and improve user convenience.
- Build personalized suggestions for seasonal and healthy options based on user preferences.
- Develop a vendor dashboard offering sales insights, feedback, and trending item analysis.
- Provide real-time updates on market crowd density to help users plan visits effectively.
- Create a vendor rating system to encourage quality and fair pricing, adjusting visibility for poorly rated vendors.
- Introduce a feature for vendors to report unsold items for pickup to reduce waste and promote sustainability.



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Reunite

Missing persons and children pose a significant societal challenge. Despite efforts by law enforcement agencies and NGOs, the lack of a centralized system to track and identify individuals in real-time has led to inefficiencies. There is a need for a platform which streamlines the identification, tracking, and recovery of missing persons and children by utilizing Aadhaar's robust biometric authentication system to enhance the efficiency of search and rescue operations.

Potential Features:

- Integrate with Aadhaar for secure identity verification and searching. (Teams can create an API with sample data to demonstrate this feature.)
- Develop a portal for families to register missing persons with detailed profiles.
- Allow users to report missing persons or sightings directly through the platform.
- Allow integration with police, NGOs, and other organizations for coordinated efforts.
- Implement facial recognition and biometric comparison to match missing persons with sightings.
- Enable to track last-known locations or sightings via GPS.
- Implement end-to-end encryption for storing personal and biometric data.
- Provide updates on matches, search progress, and other relevant information sent to registered users.

Bonus Point:

- Make the web/app accessible in multiple Indian languages for diverse users.



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Threads of Harmony

There is a need for a platform (preferably a SaaS platform) that helps social media managers efficiently manage their clients and content across multiple platforms. Such a platform should address the growing demand for organized, timely, and professional social media management. As businesses increasingly rely on their digital presence for growth, tools that streamline operations, improve productivity, and enhance client relationships have become essential.

Potential Features:

- The platform should help social media managers acquire clients by providing tools for client outreach and onboarding.
- Create an approval system that allows clients to review and approve content before it's published.
- Managers should be able to efficiently plan and organize their content using a monthly content calendar feature.
- Automate post-scheduling and publishing, ensuring that content is delivered on time without manual intervention.
- Provide separate dashboards for clients and admins, giving each user role the appropriate access and control.
- Integrates with various social media channels, allowing users to connect and manage multiple accounts in one place.



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AI / ML Domain



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Legal Ally

Navigating the legal system can be daunting for the common person, from understanding case laws to filling out court forms and ensuring contract compliance. An AI-powered platform can simplify these challenges by providing accessible legal information, automating processes, and offering insights, making the system more user-friendly.

Potential Features:

- Develop an AI-powered platform to retrieve and summarize relevant case laws, precedents, and statutes based on user queries, helping users better understand legal contexts and prepare accurate, authentic legal documents.
- Implement AI to assess contracts by identifying high-risk clauses, suggesting safer alternatives, and ensuring compliance with regulations like GDPR and labor laws.
- Provide AI-generated summaries of legal news tailored to specific regions or topics, and assist users in filling out court forms, reducing errors and simplifying the process.
- Enable users to compare old legal documents with current laws, highlighting changes and their implications for better understanding.

References:

- <https://resourceguides.azimpremjiuniversity.edu.in/subjects/guide.php?subject=indiankanoon>
- <https://indiankanoon.org/search/?formInput=databases>
- <https://www.india.gov.in/topics/law-justice>

Note: This problem statement can be tailored for specific user groups (e.g., employees, farmers, or individuals involved in criminal law) with the model trained on relevant topics. While generative AI or third-party services should be avoided, open-source models such as LLMs may be utilized. Additionally, the model can be specifically trained to address Indian law.



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Commerce Genesis

The rapid evolution of technology has enabled the integration of generative AI tools with full-stack web development for creating robust and feature-rich eCommerce portals. There is a need to develop an innovative eCommerce portal that integrates generative AI tools with full-stack web technologies to enhance the shopping experience. By combining the AI-driven features mentioned below, the portal shall cater to modern eCommerce needs while ensuring optimal performance and reliability.

Potential Features:

- Incorporate AI tools for features like product recommendations, customer interaction via NLP, automated descriptions, and personalized marketing based on user behavior.
- Implement secure user authentication for account and login management.
- Provide a comprehensive product catalog with detailed pages and search features. Include a shopping cart for managing items and order management for tracking and placing orders.
- Integrate secure payment gateways for transaction processing.
- Include AI-powered chatbots for real-time customer assistance.
- Implement AI-driven dynamic pricing and analytics tools for customer insights, sales trends, and inventory management.
- Ensure a responsive, mobile-friendly design, an intuitive UI, accurate AI-driven features, and optimize for speed, security, and scalability.



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SmartStay

The hospitality industry is rapidly evolving, demanding innovative solutions to enhance customer experiences and streamline business operations. A comprehensive platform is needed to cater to hospitality business enterprises, leveraging Generative AI tools and full stack technologies with a wide array of functionalities and a high level of accuracy, demonstrating participants' ability to tackle real-world challenges in the hospitality sector.

Potential Features:

- Enable registration, authentication, and profile management for both customers and staff.
- Provide real-time booking and reservation management for rooms, events, and services.
- Integrate secure online payment processing with multiple payment method support.
- Offer personalized service and activity recommendations based on customer preferences and behavior.
- Implement a customer review and feedback system with AI-driven sentiment analysis.
- Track and manage inventory for rooms, amenities, and supplies.
- Display real-time data visualizations and reporting for business insights and decision-making.
- Provide AI-powered chatbots and a ticketing system for handling customer inquiries and support.



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Social Media Alchemy

There is a growing need for a platform that streamlines the work of social media managers by automating essential tasks, making social media management more efficient and effective. As businesses and individuals increasingly rely on social media for marketing and engagement, the demand for solutions to keep up with the fast-paced environment continues to rise. With the integration of AI-driven tools (preferably Agentic AI), a platform that enables users to handle multiple platforms and content types seamlessly is needed.

Potential Features:

- The system should allow users to easily connect and manage multiple social media platforms from a single interface.
- The system should support creating various types of content, including text-based posts, videos, and images, to cater to diverse audience preferences.
- Users should be able to plan and organize their content strategy by creating a monthly content calendar, ensuring consistency and timely posting.
- AI agent integration to automatically create and schedule posts based on the content calendar, saving time and effort.
- Auto engagement features should be included to respond to comments, messages, and interactions, fostering a more engaged community.



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Social Cause Domain



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Echoes of the Wild

A tourist spots smoke in a wildlife sanctuary, while a local notices unusual animal behavior signaling a poacher's presence, but neither has a quick way to alert authorities. Meanwhile, an NGO struggles to coordinate efforts across vast areas, allowing threats to wildlife to grow. A unified platform connecting tourists, locals, and NGOs could bridge this gap, ensuring faster responses and stronger protection for endangered ecosystems.

Potential Features:

- Implement a system to analyze uploaded photos, identify species, flag threats, and detect unusual patterns like injuries or abnormal behavior.
- Allow tourists to report smoke or fire sightings in real-time, notify authorities about wildlife incidents like poaching, assess fire risks based on weather, and share updates on local threats or wildlife behavior.
- Create a centralized hub to coordinate emergency responses, track wildlife movement, predict fire spread using environmental data, and broadcast quick alerts to stakeholders.
- Enable tourists to upload wildlife photos, integrate local insights into conservation efforts, allow anonymous threat reporting, and provide regular updates on patrol activities.
- Develop real-time incident mapping for fires and poaching, identify wildlife-safe zones, visualize fire risk areas, and provide emergency escape routes for preparedness.
- Mention about emergency response training, educating communities on fire prevention and wildlife safety, sharing conservation success stories, enabling NGO resource coordination, and sending real-time alerts for critical incidents.



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BuildAid

Ramesh, a skilled construction worker, waits at a local square daily, relying on word-of-mouth for job opportunities, leading to uncertainty and wasted time. Even when he secures work, arranging transportation to distant job sites remains a challenge. This common struggle among construction workers highlights the need for a platform to connect workers with employers, simplify logistics, and empower them.

Potential Features:

- Implement a robust verification process to verify both workers and employers for authenticity and security.
- Create a dynamic job board showing instant openings tailored to workers' skills and locations, with real-time alerts for relevant opportunities.
- Implement tools to arrange transport via ride-sharing or partnerships with local providers.
- Allow NGOs to provide training to help workers use the platform and enhance their skills.
- Develop a tool for workers to log their income and track payment histories, and enable them to rate employers to ensure transparency and accountability.

Bonus Points:

- Implement a feature to provide emergency funds to construction workers during accidents or crises, ensuring support for medical and livelihood needs.
- Allows workers to form teams to bid collectively on larger projects.



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Blockchain Domain



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FraudChain

Financial institutions globally struggle with identifying and managing high-risk entities including loan defaulters, fraudulent individuals, and illegitimate organizations, due to fragmented information systems and limited cross-border cooperation. Traditional credit reporting and fraud detection mechanisms operate in isolation, creating blind spots that malicious actors exploit across different jurisdictions and laws.

A global blockchain-based platform is needed where financial institutions can securely and transparently share information about loan defaulters, fraudulent users, and illegitimate organizations. A decentralized platform enabling secure sharing of financial risk intelligence among verified institutions is expected.

Potential Features:

- A Controlled Access Network that operates as a system for verified financial institutions and regulators along with robust authentication system that validates both users and/or organizations allowing organizations as well as individual whistleblowers to submit records.
- Implement immutable Risk Intelligence that maintains cryptographically secured records of high-risk activities and entities. New submissions should go through consensus-based validation from network participants. Every change and submission should be tracked through a complete audit trail.
- Verification of submitted individuals ensuring all intelligence should undergo proper validation while allowing anonymous submissions. A balanced system of rewards and penalties should maintain submission quality.
- Smart Risk Detection that automatically identifies patterns of repeat offenders across the system and analyzing risks across borders to spot threats. Real-time alerts should notify participants of emerging risk patterns.
- Due diligence implementing thorough background checks on flagged entities. Historical financial behavior should be analyzed to spot concerning patterns and network mapping that reveals hidden connections between risky entities.



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SymphonyLedger

The music industry faces significant challenges in managing and protecting digital rights for music and tunes. Artists, composers, and producers often lose revenue due to piracy, mismanagement of royalty payments, and lack of transparency in ownership records. Current systems rely on centralized intermediaries, which can be inefficient, prone to disputes, and slow in disbursing payments.

A blockchain-based solution is needed to create a decentralized platform for managing the digital rights of music and tunes. The solution should ensure transparency, accurate tracking of ownership, and automated royalty payments to rightful owners.

Potential Features:

- Use blockchain to maintain an immutable ledger of music ownership, including details of artists, composers, and producers. Allow updates for transfers of rights while ensuring historical records remain tamper-proof.
- Automate royalty payments through smart contracts, ensuring artists and stakeholders receive their share promptly.
- Enables direct licensing agreements between rights holders and users (e.g., filmmakers, advertisers, streaming services).
- Provide a platform accessible to artists and users worldwide, supporting multi-currency payments (including cryptocurrency) for seamless transactions.
- Leverage methods to authenticate legitimate copies of music and detect unauthorized distributions.



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Key notes

- It is recommended to produce a video recording along with documentation showcasing the key features in case any issues arise during demonstrations.
- We highly encourage you to use the orkes-conductor repository in your project, as all relevant resources will be available in the app.