

TSEC CCCESTORM

Presents

PROBLEM STATEMENTS

CCMPINS

- · WEB / APP
- · SOCIAL CAUSE
- · AI / ML

WCB/APP DCVCLOPMCNT



Web/APP Development PS 01

Employee Feedback and Engagement Platform

Employee feedback and engagement are crucial aspects of maintaining a productive and satisfied workforce. Businesses need effective tools and platforms to gather employee feedback, measure engagement, and take actionable steps to enhance the work environment. An Employee Feedback and Engagement Platform is designed to address these needs.

The problem at hand is the lack of a comprehensive platform that facilitates continuous employee feedback, gauges employee engagement levels, and provides actionable insights to improve workplace satisfaction and productivity. This platform should offer a user-friendly interface for employees to share feedback and for management to analyze and act upon it.

- 1. Enable the creation and distribution of various types of surveys, including satisfaction surveys, pulse surveys, and feedback forms, allowing employees to express their opinions on various aspects of the workplace.
- 2.Provide an option for employees to submit feedback anonymously to encourage honest and candid responses.

- 3. Implement mechanisms to measure and track employee engagement over time, using key performance indicators (KPIs) like participation rates, productivity, and retention.
- 4. Support 360-degree feedback processes, allowing employees to receive feedback from peers, managers, and subordinates to promote holistic self-improvement.
- 5. Provide data analytics and insights to help organizations understand the root causes of issues and trends within the workforce and develop strategies for improvement.
- 6. Incorporate a feature for recognizing and rewarding employees based on their contributions, achievements, and feedback received from peers.



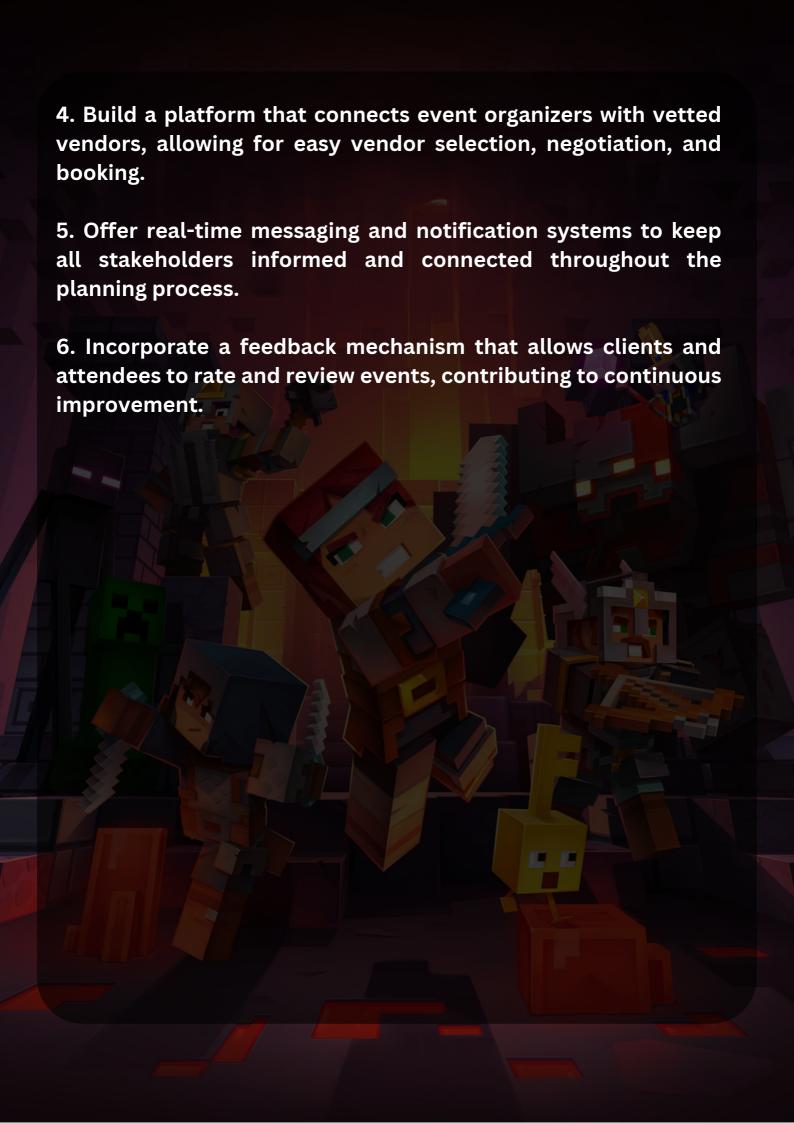
Web/APP Development PS 02

Event Planning and Scheduling

Event planning and scheduling present multifaceted challenges encompassing a wide spectrum of events, from conferences to weddings and corporate gatherings. Event organizers grapple with persistent issues, including scheduling conflicts, financial overruns, and client discontentment.

This problem statement calls for innovative solutions that streamline the planning process, enhance resource management, and ensure client satisfaction, ultimately revolutionizing the event industry's efficiency and effectiveness.

- 1. Develop an intelligent scheduling algorithm that minimizes conflicts by analyzing event dates, venues, and participant availability.
- 2. Implement a robust budget management system that tracks expenses in real-time and provides accurate financial forecasts.
- 3. Create a client portal where organizers and clients can communicate, share updates, and make decisions collaboratively.





Web/APP Development PS 03

Career Interest Assessment and Recommendation

The journey of choosing a career is a pivotal moment in a student's life, yet it's fraught with uncertainty due to a lack of self-awareness regarding their interests and strengths. This hackathon challenge presents an opportunity to address this pervasive issue by envisioning and developing a Career Interest Assessment and Recommendation Website.

Your task is to create a digital platform that acts as a guiding light for students. It will offer dynamic tools and assessments to help them uncover their true passions and talents. Through data-driven insights and personalized recommendations, we aim to empower individuals to make informed career choices that align with their unique skills and aspirations.

- 1. Provide a range of comprehensive assessments that evaluate a user's interests, strengths, personality traits, and values to build a holistic profile.
- 2. Offer tailored career recommendations based on the assessment results, suggesting suitable professions, industries, and educational paths.

- 3. Curate a vast repository of career-related resources, including articles, videos, and courses to help users explore and prepare for their chosen fields.
- 4. Provide data-driven insights into emerging industries, job market trends, and salary expectations to aid in decision-making.
- 5. Allow users to create profiles to save their assessment results, track progress, and revisit recommendations over time.
- 6. Facilitate interaction among users through forums, discussion boards, or social features to foster a supportive community.

FECCIFICATION STRUCKS

SOCIAL CAUSE



PS 01 Maternal and Child Health

Maternal and child health is a critical concern in many parts of the world, including India. Despite significant progress in recent years, there are still challenges related to maternal mortality, infant mortality, and overall maternal and child well-being. Key issues include inadequate access to quality healthcare, nutrition, immunisation, and prenatal care, which can result in adverse health outcomes for mothers and children.

Create a platform that addresses maternal and child health by implementing comprehensive interventions and software solutions to improve healthcare access, awareness, and outcomes for mothers and children.

- 1. Provide prenatal care information, checklists, appointment reminders, and educational resources about nutrition, hygiene, and prenatal health.
- 2. Create a digital health record system for pregnant women that tracks their health status, prenatal visits, and vital signs, ensuring timely interventions and reducing maternal complications.

- 3. Implement an immunization tracking feature that reminds parents about their child's vaccination schedule, provides information on vaccine safety, and connects them to nearby vaccination centers.
- 4. Develop a nutrition and growth tracking feature that allows parents to monitor the growth and nutritional status of infants and young children, providing guidance on appropriate feeding practices.
- 5. Implement an emergency response feature in the app, allowing users to request immediate medical assistance in cases of complications during pregnancy or childbirth.
- 6. Encourage community participation by creating a social platform within the app where users can connect, share experiences, and support one another.



PS 02

Inclusive Education for Students with Disabilities

In many educational systems worldwide, students with disabilities face significant barriers to accessing quality education. These barriers may include physical inaccessibility of school facilities, limited availability of assistive technologies, a lack of trained teachers, and social stigma and discrimination. These challenges result in the exclusion of students with disabilities from mainstream educational settings, which hinders their educational and social development.

Develop a platform that promotes inclusive education for students with disabilities through the implementation of comprehensive interventions and software solutions, enhancing access to healthcare, awareness, and outcomes for these students.

- 1. Ensure that students with disabilities have equal access to quality education in mainstream schools alongside their peers without disabilities.
- 2.Promote campaigns to raise awareness about the challenges faced by students with disabilities and promote inclusivity and acceptance.

- 3. Promote diversity and inclusion within the school environment, fostering a sense of belonging and respect for all students, regardless of their abilities.
- 4. Provide teachers and school staff with appropriate training and resources to effectively support students with disabilities and implement inclusive teaching practices.
- 5. Establish a platform for students with disabilities to connect, share experiences, and offer peer support.
- 6. Allow students, parents, and educators to report accessibility issues, discrimination, or other concerns through the platform.



PS 03 Sustainable Living App

Sustainability has become a critical global concern, with individuals and communities seeking ways to reduce their environmental footprint, conserve resources, and make ecofriendly choices in their daily lives. A sustainable living app aims to address this by providing users with tools, information, and incentives to adopt more sustainable practices.

The problem at hand is the need for a comprehensive software solution that empowers users to lead more sustainable lives by making informed choices regarding energy consumption, waste reduction, transportation, and consumption patterns. This app should serve as a one-stop solution for sustainable living, promoting eco-friendly behaviors and providing actionable insights

- 1. Integrate a tool that allows users to calculate their carbon footprint based on their lifestyle choices, including transportation, energy consumption, and diet.
- 2. Offer sustainability challenges or goals for users to participate in, such as reducing plastic usage, conserving water, or using public transportation. Users can earn rewards or badges for completing challenges.

- 3. Allow users to track and visualize their resource consumption over time, such as electricity, water, and waste production, to encourage conscious consumption.
- 4. Provide information about local sustainability events, workshops, and community initiatives to encourage participation in sustainable activities within their region.
- 5. Create a social aspect where users can connect with likeminded individuals, share their achievements, and participate in sustainability discussions and forums.
- 6. Enable users to offset their carbon emissions by contributing to verified carbon offset projects, such as reforestation or renewable energy initiatives.





AI/ML PS 01

CCTV-Based AI/ML for Enhanced Safety and Productivity

Indian Railways, one of the world's largest railway networks, grapples with the daily challenge of managing millions of passengers and trains. The demands of crowd management, cleanliness, crime prevention, and work monitoring have grown exponentially with the increasing number of passengers and services. Traditional manual monitoring methods are timeconsuming, prone to human error, and often result in missed incidents. The integration of AI and ML technologies offers a transformative solution. Al-driven CCTV networks have the capacity to analyze vast data streams in real-time, providing valuable insights for crowd management, crime prevention, and work monitoring. This project aims to harness the power of AI/ML to revolutionize Indian Railways, enhancing safety, efficiency, and passenger experience while mitigating challenges associated with the network's sheer scale and complexity.

Key Features:

1. Implement AI/ML-powered CCTV networks to enable realtime monitoring of railway stations and trains, ensuring swift response to incidents.

- 2. Utilize AI to analyze passenger flow, detect overcrowding, and optimize crowd management strategies to enhance safety and efficiency.
- 3. Monitor and improve cleanliness and maintenance by automating work tracking and reporting, reducing the manual effort required.
- 4. Implement AI/ML algorithms to identify suspicious activities and potential security threats, bolstering crime prevention efforts.
- 5. Optimize resource allocation by using AI insights for staff deployment and maintenance scheduling.
- 6. Leverage AI/ML analytics to extract valuable insights from the vast amount of data generated by the railway network.

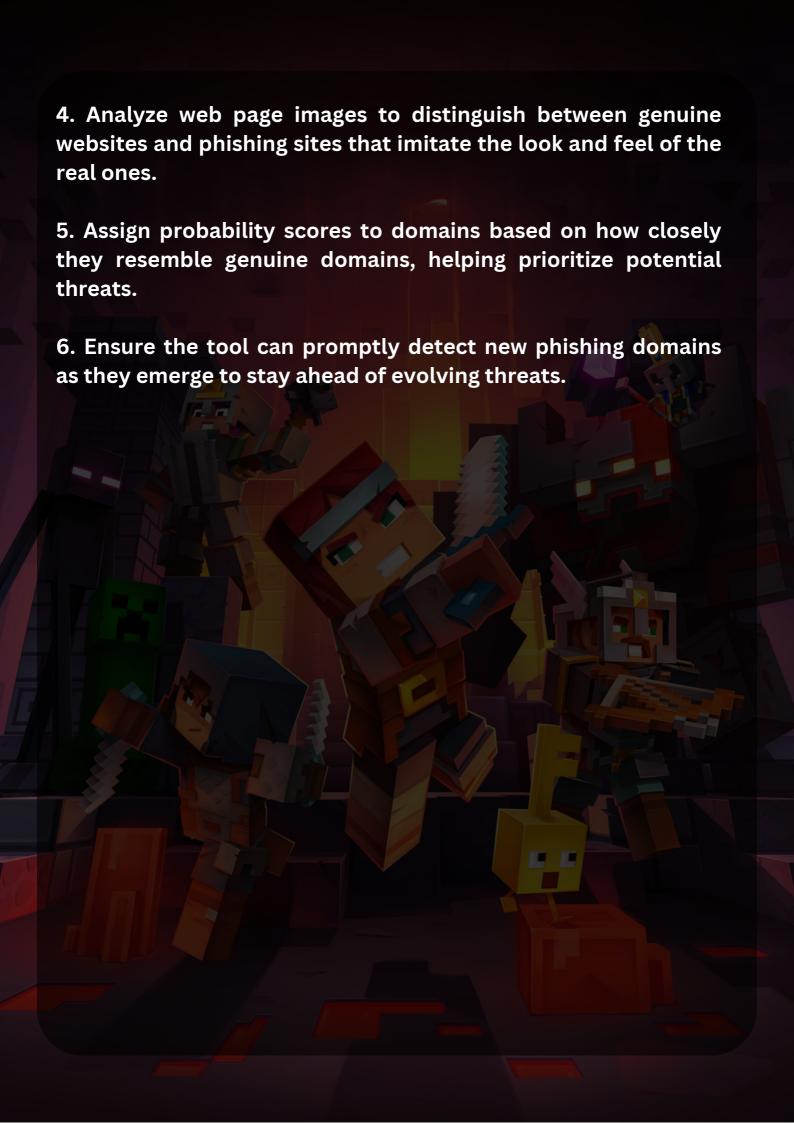


PS 02

AI/ML-Powered Phishing Domain Detection

In the era of widespread phishing attacks, the need for a robust solution to identify malicious domains from newly registered websites is paramount. Our challenge is to develop an automated tool that leverages AI and ML, using open-source databases like WHOIS, to differentiate phishing domains from genuine ones. The tool should employ backend code and content analysis, as well as web page image comparison to assign probability scores for phishing resemblance. Evaluation will focus on the tool's accuracy in identifying phishing domains' proximity to genuine ones, its ability to swiftly detect new threats, and its user-friendly interface for various output formats. Join us in building a powerful defense against phishing attacks.

- 1. The system should automate the process of identifying phishing domains among newly registered websites, reducing manual effort and response time.
- 2. Utilize WHOIS databases to access registration information for domains, including registration date and owner details, to aid in the detection process.





AI/ML PS 03

AI-Powered Traffic Signal Optimization System

Traffic congestion plagues urban areas, resulting in frustrating delays, increased fuel consumption, and environmental degradation. Traditional traffic signal systems rely on rigid schedules, exacerbating congestion during peak periods. We aims to tackle this pressing problem by developing an AI-driven traffic signal control system capable of dynamically adjusting signal timings in response to real-time traffic conditions. Our objective is to prioritize the smooth and efficient flow of traffic, reducing wait times for commuters and alleviating the adverse impacts of congestion. Create a solution that not only eases urban traffic bottlenecks but also promotes sustainability and improves the quality of life in cities. Let's harness the power of AI to revolutionize urban transportation.

- 1. The system should continuously collect and analyze real-time traffic data from various sources, including traffic cameras, vehicle sensors, GPS devices, and historical traffic patterns.
- 2. Implement AI and machine learning models to predict traffic conditions and congestion patterns. These models should consider factors such as traffic volume, vehicle speed, congestion hotspots, and historical data.

