ACM DJSCE

IOT

SMART ENERGY MANAGEMENT SYSTEM

Energy management is not just about saving energy. It's about managing and sustaining the energy resources we have for a better future.

Energy wasted in corporate offices and houses is a major concern as it not only drives up energy costs but also has a significant environmental impact. Due to ineffective energy management techniques, such as leaving lights and devices on while not in use, inadequately insulated buildings, and inefficient equipment, many offices and residences use more energy than is necessary. Hence, it is crucial for individuals and businesses to adopt energy-efficient practices such as investing in energy-efficient appliances, implementing energy management systems, and raising awareness of energy conservation among employees and occupants.

Create an IoT solution that tracks and manages energy usage in homes and businesses. This system could use sensors to monitor energy consumption and automatically adjust usage based on the time of day and the needs of the user. Smart energy management is a crucial aspect of building a sustainable future, and IoT solutions can play a significant role in this area. A smart energy management system can help users reduce their energy bills, reduce carbon emissions, and increase energy efficiency.

Here's what a typical smart energy management system can have:

- Sensors are installed in homes or businesses to monitor energy consumption in real-time. These sensors can be installed on appliances, light switches, and other devices that consume energy. The energy consumption data is collected and transmitted to a central server or cloud-based platform for analysis.
- The system can learn the user's energy consumption habits and make predictions about future usage. For example, it can suggest turning off lights in unoccupied rooms or adjusting the thermostat to reduce heating or cooling when no one is at home.
- The system can also automatically adjust energy usage based on the user's preferences and needs. For example, it can adjust the lighting levels based on the time of day or adjust the temperature based on the user's schedule. Users can monitor their energy consumption and savings through a mobile app or web interface.
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These are just a few examples which you can implement using Arduino, RPi and sensors. Think of some more efficient ways to save energy and create a smart energy management systems.

BLOCKCHAIN

LUXURY GOODS SUPPLY CHAIN MANAGEMENT

Luxury goods are all about exclusivity and authenticity, and blockchain technology is the perfect tool to ensure both.

The luxury goods industry faces challenges in ensuring the authenticity and provenance of their products. Counterfeit luxury goods, fraudulent transactions, and lack of transparency in the supply chain are major issues that can lead to loss of revenue and brand reputation. Additionally, the industry is subject to high standards of quality and craftsmanship, making it difficult to maintain quality control and ensure that products are handled and transported in accordance with industry standards.

Create a blockchain-based solution to address these challenges and create a more secure and transparent supply chain in the luxury goods industry.

The solution can incorporate the following features:

- Provenance Tracking: Blockchain can be used to create a tamper-proof record of the journey of each luxury good, from its creation to the end-user. This can be accomplished by assigning a unique identifier to each product and recording its movement through the supply chain on the blockchain.
- Smart Contracts: Blockchain can be used to automate transactions and ensure that payments are made securely and efficiently. Smart contracts can be used to automate the process of verifying product authenticity and quality, as well as ensure that all parties involved in a transaction are verified and authorized.
- Supply Chain Transparency: Blockchain can be used to provide end-to-end transparency of the supply chain, allowing all parties involved to track the movement of luxury goods and ensure that they are handled and transported safely and efficiently.
- Privacy: Blockchain can be used to ensure customer privacy by providing selective data sharing. This means that sensitive customer information can be stored on the blockchain and shared only with authorized parties, such as luxury goods manufacturers and retailers.

WEB/APP 1

PROMOTION ENGINE

A promotion engine is a software system that automates the process of creating and managing promotional campaigns for businesses. In the real world, a promotion engine typically works by analyzing customer data and behavior to create targeted promotions and offers. For example, a promotion engine might use data on customer purchase history and preferences to create personalized discount offers or product bundles. The engine might also use real-time data on customer behavior, such as browsing or cart abandonment, to trigger targeted offers to incentivize customers to complete their purchase.

The challenge for this hackathon is to develop a coupon generator platform that allows businesses of all sizes to create and distribute coupons easily and efficiently. You can develop your own promotion engine which also lets vendors make their own schemes, gift cards or coupon systems. Refer to the following document for a better understanding of the product and earn bonus points (Reference doc)

WEB/APP 2

EMPLOYABILITY APPLICATION

In the wake of mass layoffs, there is a need to develop a job portal that caters to both employees who have been laid off and employers looking to hire.Developing a job portal that caters to both employees who have been laid off and employers looking to hire can be a challenging task, but it is a crucial step in helping people find new employment opportunities after experiencing a job loss. Here are some suggestions for creating such a platform:

- The application should include a job portal feature that allows companies to post job vacancies, and recommend top applicants based on their qualifications, experience and location proximity.
- The application should also provide personalized job recommendations to users based on their profile and preferences, and allow them to receive real-time updates on job vacancies.
- A user must be able to view nearby users with the help of bluetooth connectivity feature, view their profile and connect with them without knowing their location.
- Enable users to conduct virtual interviews or meetings with potential employers or employees directly within the app.
- Send users customized notifications based on their activity within the app, such as new job opportunities or networking events in their areas.

Your solution to the problem statement should be different from pre-existing software (such as Internshala, LinkedIn) etc. More novelty will fetch more bonus points.

AI/ML

CREATING DIGITAL IDENTITY

It's not just the time it takes to make government documents, it's the emotional toll it takes on you.

The offline verification and document submission processes for any government document in India can be time-consuming, complex, and involve significant paperwork. It is like a rollercoaster of emotions, from frustration to anxiety to relief and can feel like you're jumping through hoops just to be recognized as a valid citizen, as individuals usually have to visit government offices in person to submit their documents and then wait for a long time to receive verification and approval. For example, a passport renewal process typically involves the submission of hard copies of various documents, such as identification cards, address proofs, and certificates, which need to be verified by government officials and takes several weeks or even months, depending on the volume of applications and the efficiency of the government office.

Creating a digital identity provides security, convenience, privacy, personalization to the citizens and eases the process of offline verification. Develop a collaborative approach to classify different proofs, images and documents into multiple predefined categories using a ML model and create a digital identity of a citizen. Furthermore, develop a process to create a biometrics system. Some algorithms can also be used to automate and streamline this process, making it more efficient and accurate.

Here are some points which the software can contain -

- Data collection and management: It can be used to collect and manage large volumes of personal data from various sources, such as government databases and financial institutions.
- Identity creation and verification: The algorithm can be used to create and verify the identity of an individual by comparing the personal information provided against various authentication factors, such as biometric data, government-issued identification documents, and social media accounts.
- Fraud detection: The algorithm can be used to detect and prevent fraud in the process of creating a digital identity.
- Risk assessment: The algorithm can be used to assess the risk associated with an individual's digital identity, such as the likelihood of identity theft or fraudulent activity.

Note: It is at your discretion to find new ways to develop a digital identity or create a new biometric process.

OPEN INNOVATION

PHOTOGRAPHY

Photography is more than a medium for factual communication of ideas. It is a creative art.

The photography industry is evolving at a rapid pace, and photographers must stay up to date with the latest trends and technology to remain competitive. As the market becomes increasingly saturated, photographers are struggling to differentiate themselves and attract new clients. In addition, the COVID-19 pandemic has forced many photographers to pivot their business models and find new ways to generate revenue.The challenge for this hackathon is to develop innovative solutions that help photographers thrive in today's digital landscape.

Note: Your product can be based on any domain but should follow the theme of the problem statement.