Grid 4.0 SDE Problem Statements

Problem Statement 1:   MetaCommerce - The Future of Shopping with Metaverse

How about building the future of immersive shopping with possibilities of VR, AR, and immersive 3D worlds/Metaverses for e-Commerce? This hack expects you to Create a connected Metaverse experience on the web, in which anyone with a web browser can join and experience a 3D world along with their friends to browse & shop. Create a connected experience by interacting with your friends or fellow shoppers in the metaverse, enabling try-on experiences on your avatar. You can have fun by having voice-enabled conversations and camera enablements. There's no limit to bringing in your creativity - Feel free to add features like - Creating an avatar of yourself and shopping around in the metaverse, Access Digital assets - View the item in a 3D format in the virtual space, Virtual Try Ons,

Example & References :

- An example would be a miniature version of https://decentraland.org/ or https://spatial.io/ on the web.
- For Connected experience, you can check APIs provided on https://hubs.mozilla.com/ and also refer to A-Frame
- For 3D digital asset, use https://sketchfab.com/features/free-3d-models as a reference.
- For 3D Viewer, you can refer (https://doc.babylonjs.com/divingDeeper/webXR/introToWebXR) or Scene Viewer from Google or WebXR
- For Virtual world (Ref:) Xiaomi Microverse, Forever 21 Store in Decentraland (walk around for other shops)

The solution should focus on:

- Building a web-based metaverse using out-of-the-box Avatar generation tools for users to enter and experience. **HInt - Existing open source solutions can be used.**
- Building a shared 3D space on the web that is shared concurrently by many users. **Hint-** Any existing 3D spaces can be used.
- We are listing a few feature suggestions below - Feel free to use a part or all of them in your experience Or additional features can be added too. The idea is to build a next-gen futuristic Metaverse Shopping experience.
- Ability to view products in 3D in the shared spaces and AR as well (You may allow users to scan a QR code to view products in AR on their phone)
- Ability to try-on apparels etc on the Avataar.
- **Bonus**- Add-to-cart/checkout of the product
- **Bonus- Voice chat with fellow shoppers, enablement of camera**
- **Bonus- Use your imagination and create innovative experiences.**

Judging Criteria:

- The solution should be easy to use and should have an immersive experience. A nice clean working demo is mandatory,
- It should be a connected experience, with as many feature sets using - 3D viewer, AR, VTO, Avatars, etc.
- Well-defined APIs and SDKs architecture documentation for integration by Partners.
- Code quality, extensibility

Problem Statement 2: Blockchain-based **eCommerce warranty system using NFTs**

The objective is to replace the physical warranty and have block chain based warranty using NFT which will ensure authenticity and security.

- Converting ownership authenticity and product warranty cards into decaying NFTs.
- For instance, allow brands and retailers to introduce an NFT for each of their products, which allows customers to receive the physical product along with a digital version of it.
- Customers can then use the digital NFT to verify the authenticity of their product, prove their ownership of their product, and transfer ownership of them upon resale.
- The brand/retailer should also be able to tie the digital NFT to its warranty program, allowing owners to track repairs and replacements to the original item.
- Decay the NFT once the warranty is over.
- You can use the Polygon blockchain to deploy your solution and demo the final product as a web prototype

Example on the Klatyn Chain - [Korean retailer issues blockchain warranties as NFTs for luxury items - Ledger Insights](#)

What are we expecting:

- The blockchain smart contract should allow users to prove ownership
- Provide the purchasing history, warranty period, and other item information
- The warranty card should include the item's serial number and upon purchase be sent to the customer's smartphone.
- The NFTs should be decaying in nature, in that, after a certain period their use for the redemption of warranty benefits offered by the brand/retailer will expire
- **Bonus -** GUI-based tool that doesn't require knowledge of any Blockchain programming to use by Brands and Retailers.
- **Bonus** - Usage of Soulbound NFTs
- **Bonus** - Add any engagement/gamification construct to the loyalty program

Judging Criteria :

- The demo of the key feature/functions you were able to implement should be simple (No code to be used in the demo)
- Clean and well-structured Solidity code/templates
- Feature sets

<u>Problem Statement 3:</u> **Extract Trends from social media data**

As part of this challenge, teams are expected to identify trends from social media data; From all the products available on Flipkart identify trending products, utilize all signals available (ex. posts, sessions, check-ins, social graphs, media content, etc.). Output should also have photos, videos, gifs which can be used on Flipkart app.Preferred tech: Open source
Bonus: Signal extraction from multiple social media channels (ex. FB, Instagram, Twitter, etc.)