BLOCKCHAIN BASED SOCIAL MEDIA BOTS AND GAS FEES

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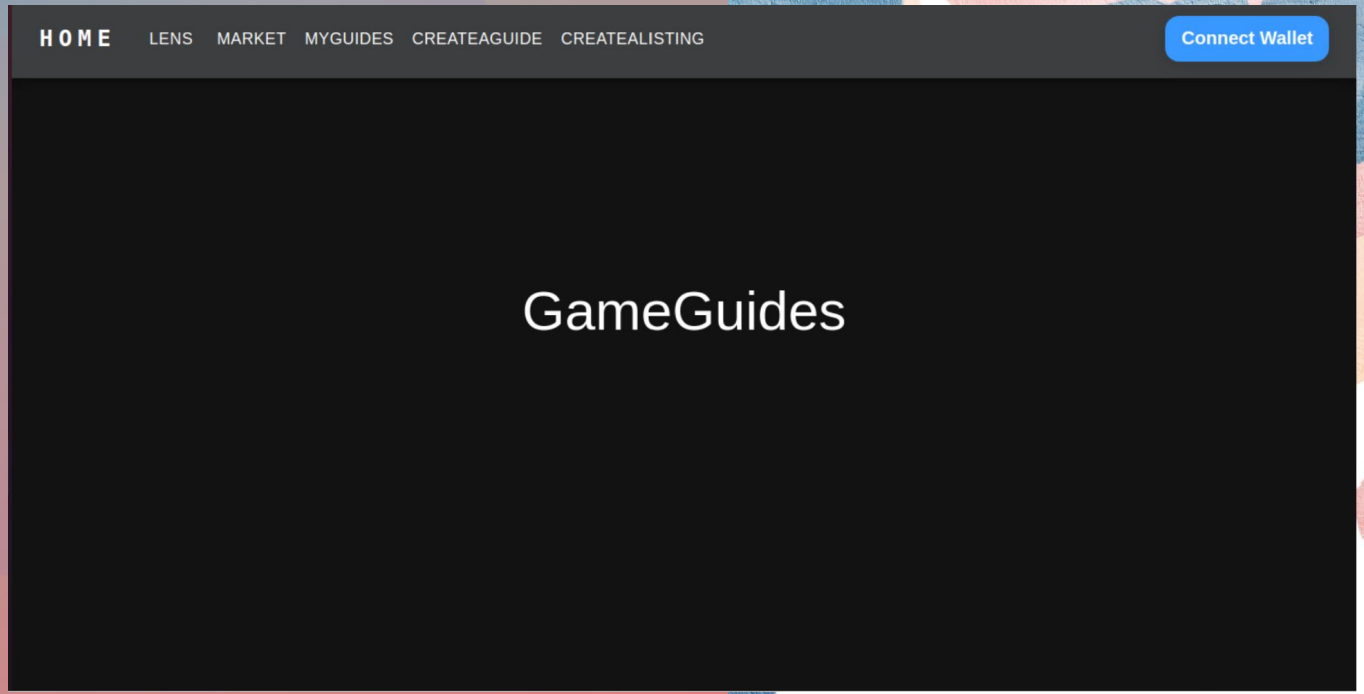


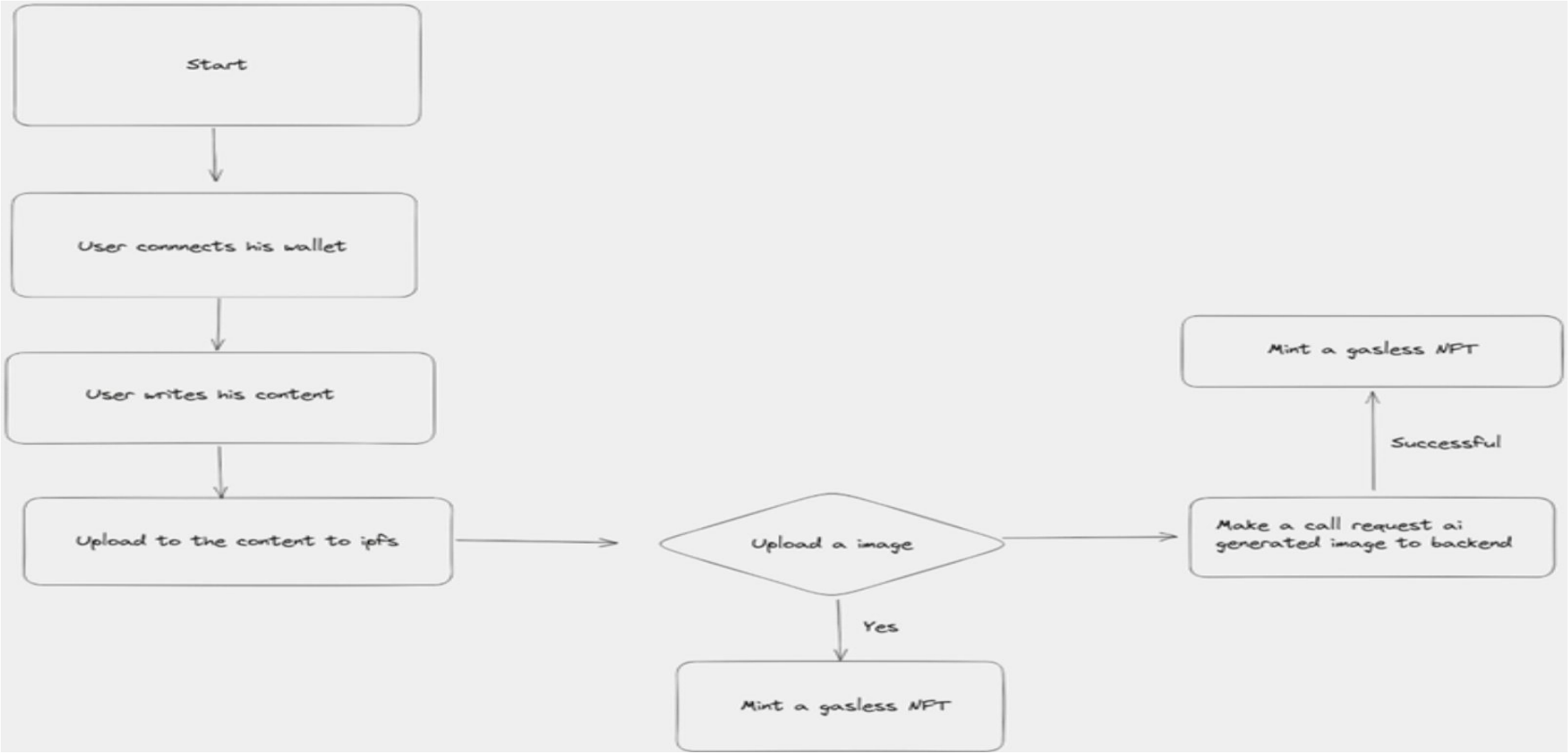
PURPOSE OF THE PROJECT:

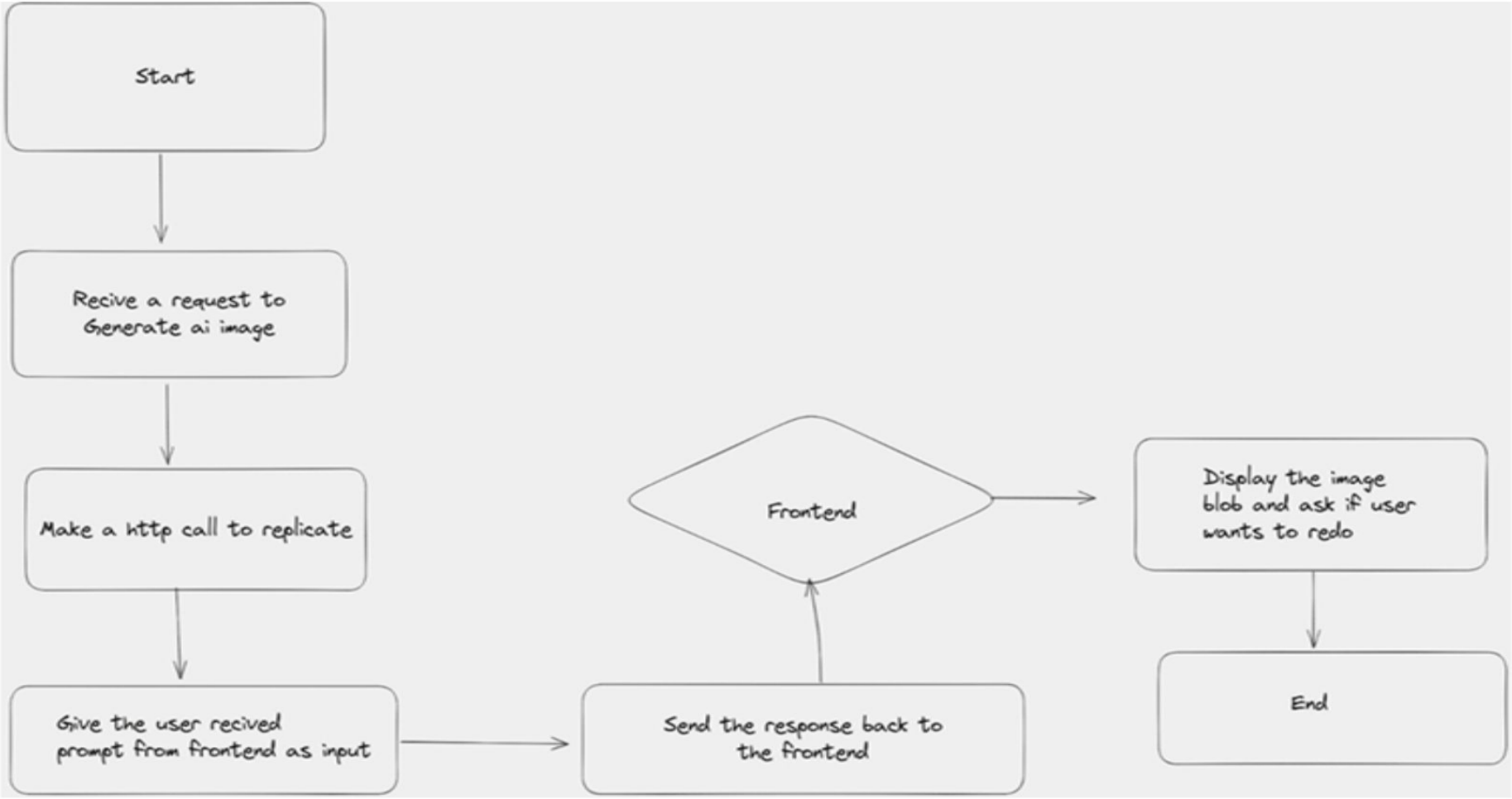
- The project aims to address several issues related to current social media platforms, including the ownership and selling of user data, the presence of fake accounts and bots, high gas fees associated with blockchain-based social media alternatives, the lack of producer-to-consumer interactions, and the low percentage of revenue generated by data producers.
- To address these issues, the project proposes the use of Polygon Mumbai Blockchain to lower gas fees, a decentralized social graph called Lens-Protocol to ensure user ownership of data, token gating functionalities to facilitate producer-to-consumer interactions, and zero-knowledge identity and proof-of-personhood protocols to eliminate bots.
- The project also intends to use smart contracts written in Solidity and a frontend built using Javascript and React.
- Overall, the project seeks to create a more transparent and equitable social media platform that gives users more control over their data and facilitates direct interactions between producers and consumers.

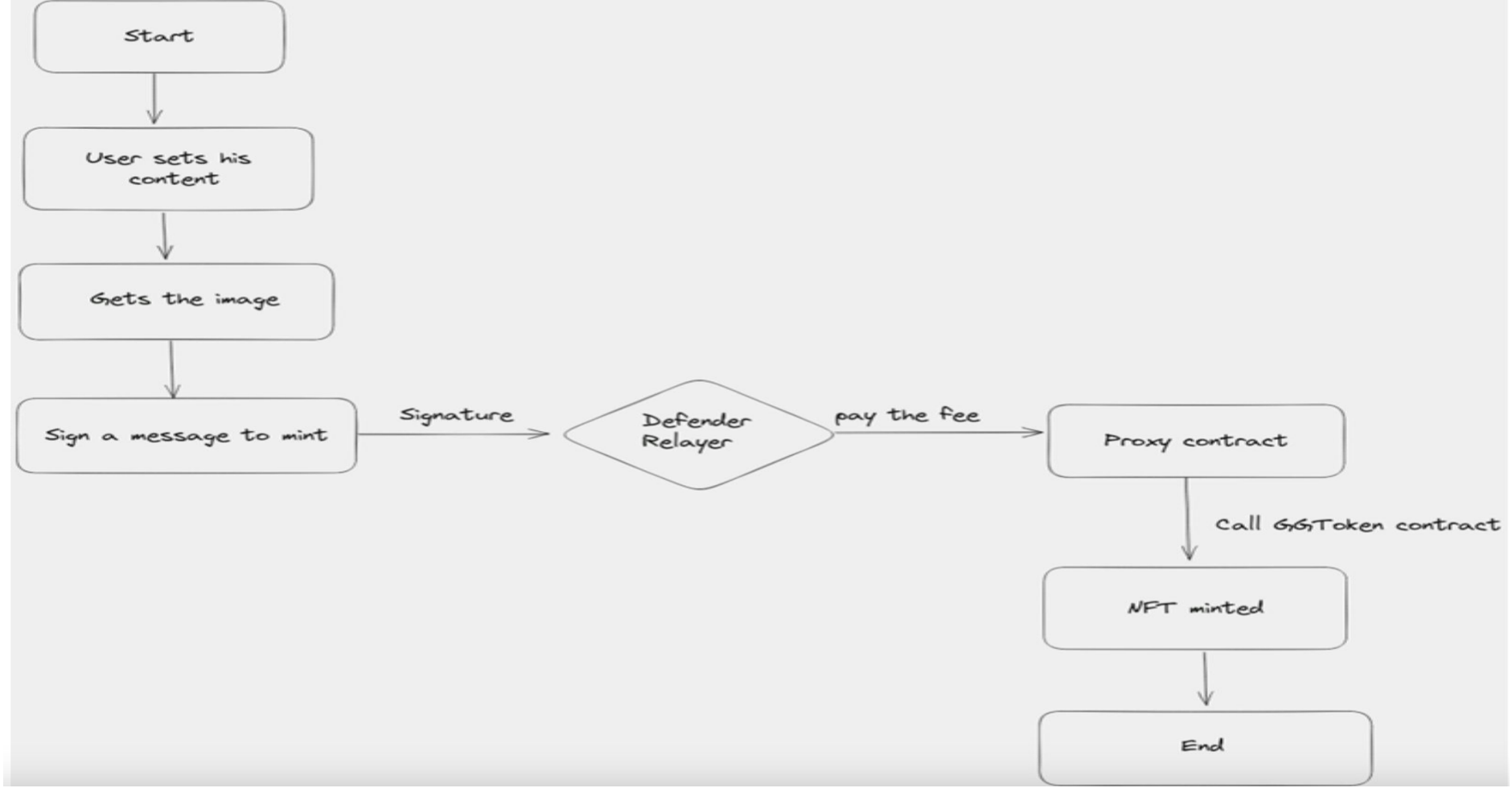
USE OF BLOCKCHAIN IN PROJECT

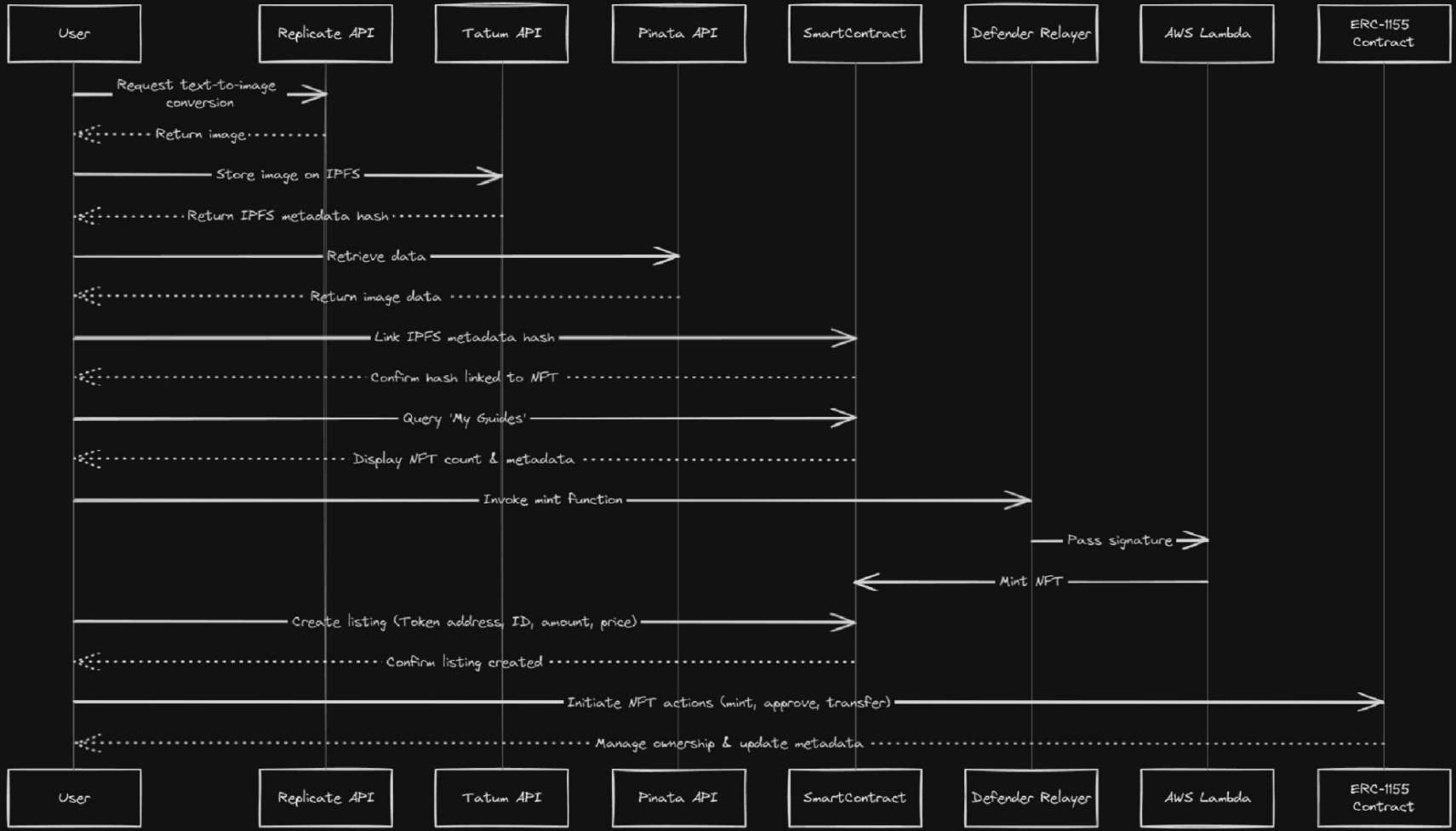
- The project proposes the use of Polygon Mumbai Blockchain to lower gas fees.
- Decentralized social graph called Lens-protocol to ensure user ownership of data, token gating functionalities to facilitate producer to consumer interactions and proof of personhood protocols to eliminate bots.
- This provides more transparent and equitable social media platform that gives users more control over their data and facilitates direct interactions between producers and consumers.

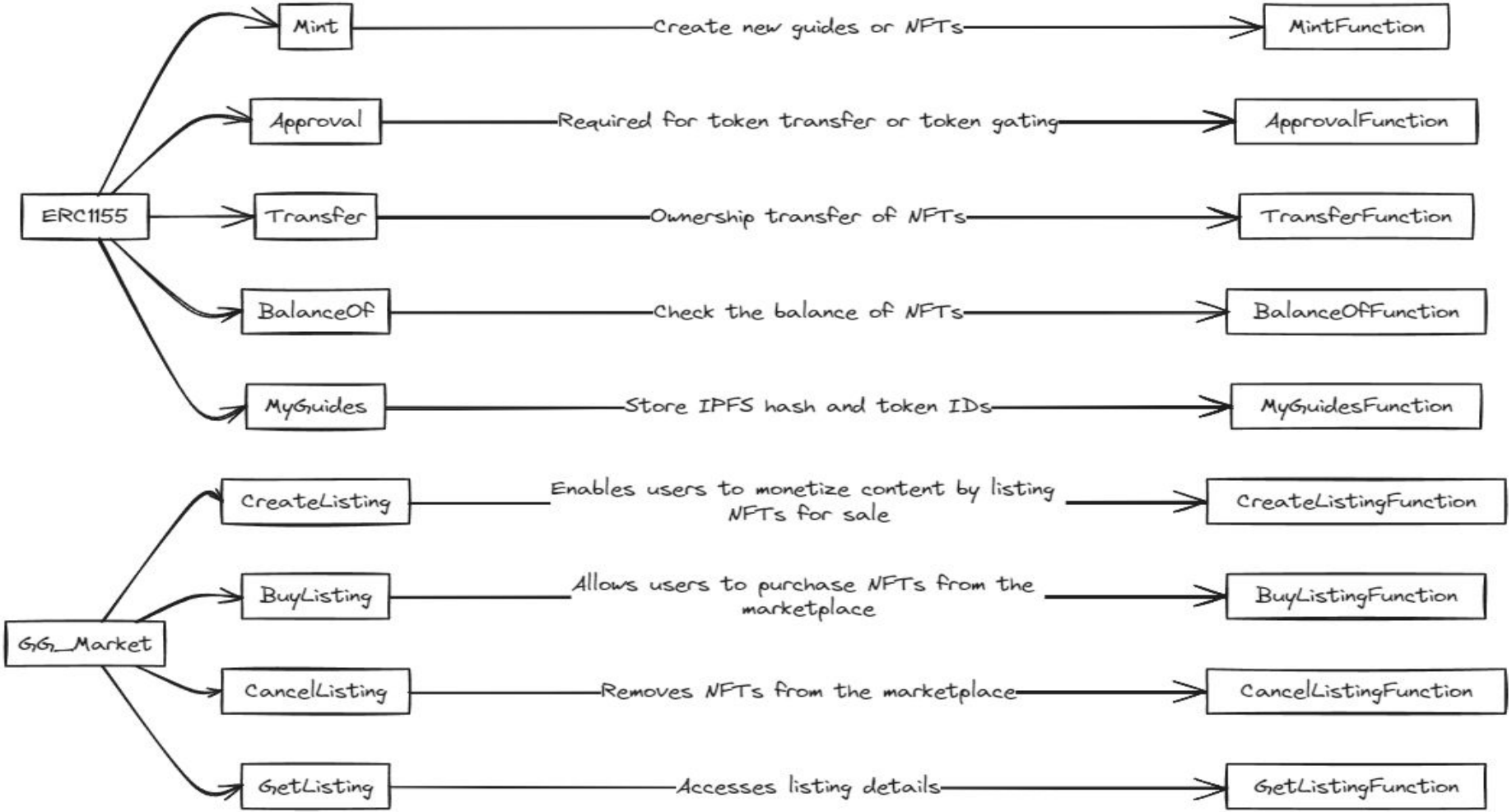
FLOW DIAGRAMS:

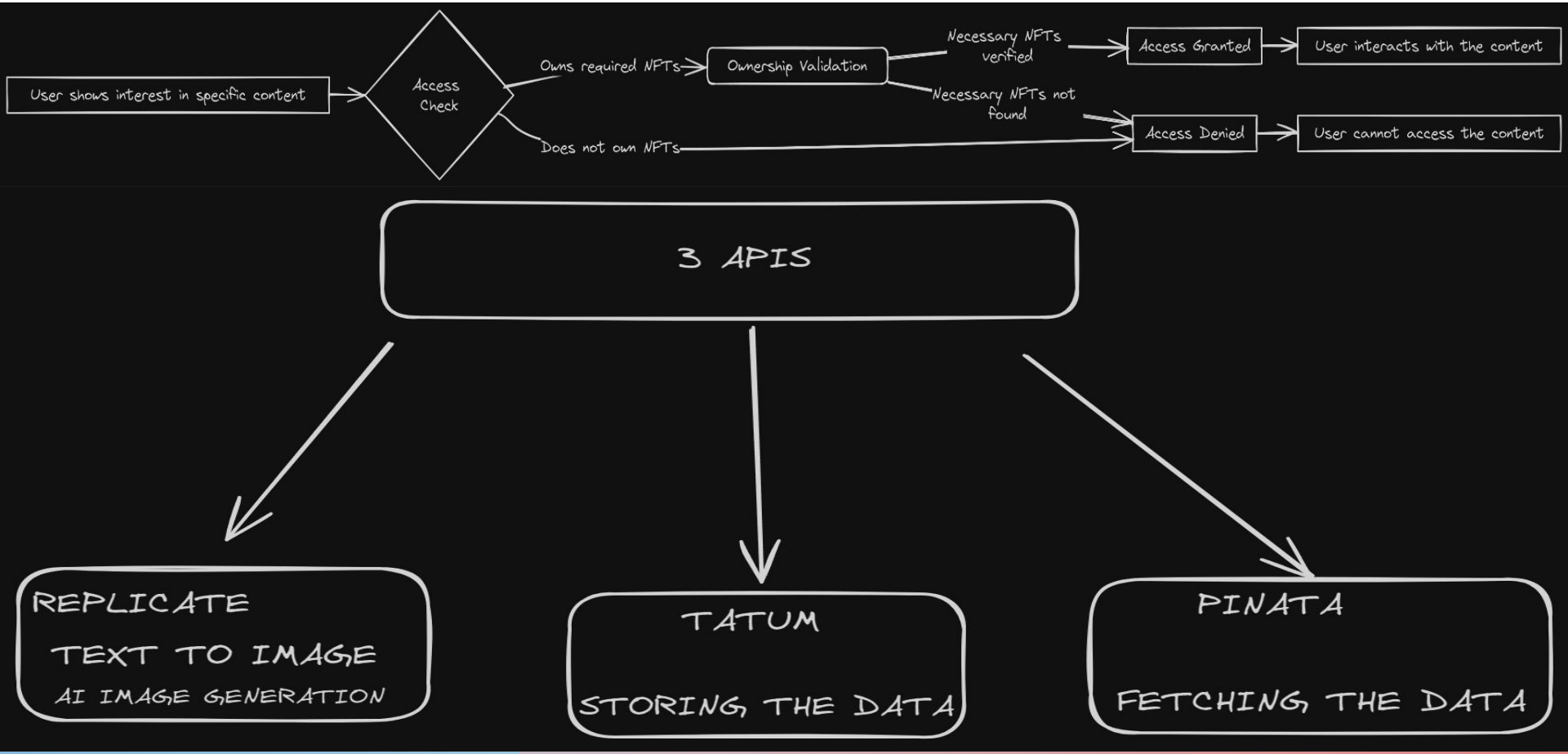



Start
Recive a request to Generate ai image
Make a http call to replicate
Give the user recived prompt from frontend as input
Send the response back to the frontend
Frontend
Display the image blob and ask if user wants to redo
End

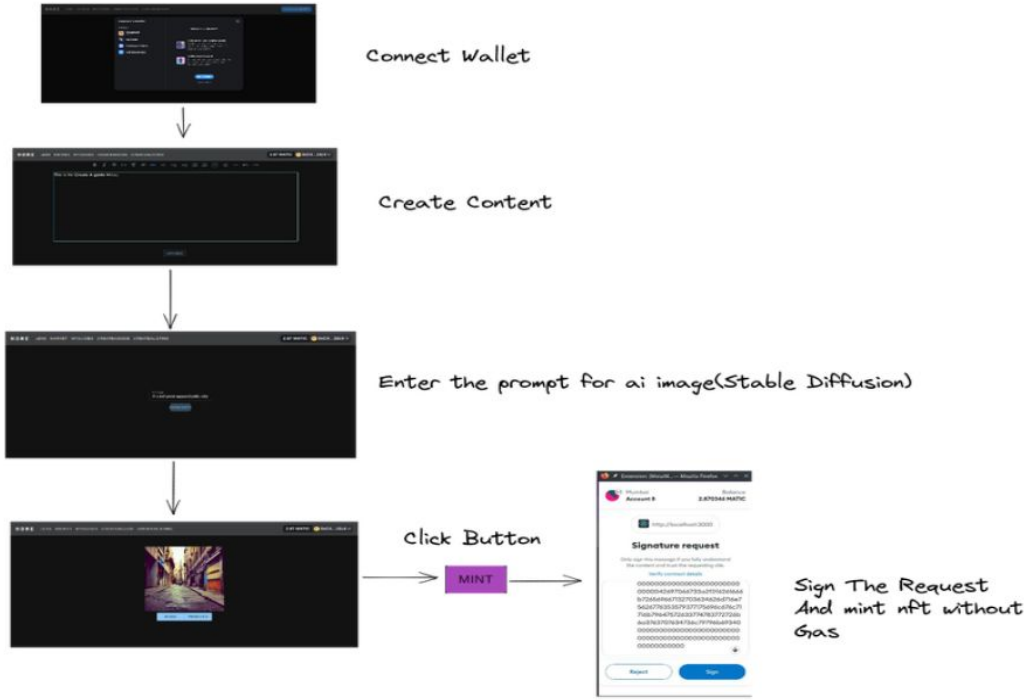

Start
User sets his content
Gets the image
Sign a message to mint
Signature
Defender Relayer
pay the fee
Proxy contract
Call GGToken contract
NFT minted
End


User
Replicate API
Tatum API
Pinata API
SmartContract
Defender Relayer
AWS Lambda
ERC-1155 Contract
Request text-to-image conversion
Return image
Store image on IPFS
Return IPFS metadata hash
Retrieve data
Return image data
Link IPFS metadata hash
Confirm hash linked to NFT
Query 'My Guides'
Display NFT count & metadata
Invoke mint function
Pass signature
Mint NFT
Create listing (Token address, ID, amount, price)
Confirm listing created
Initiate NFT actions (mint, approve, transfer)
Manage ownership & update metadata
User
Replicate API
Tatum API
Pinata API
SmartContract
Defender Relayer
AWS Lambda
ERC-1155 Contract


ERC1155
Mint
Create new guides or NFTs
MintFunction
Approval
Required for token transfer or token gating
ApprovalFunction
Transfer
Ownership transfer of NFTs
TransferFunction
BalanceOf
Check the balance of NFTs
BalanceOfFunction
MyGuides
Store IPFS hash and token IDs
MyGuidesFunction
GG_Market
CreateListing
Enables users to monetize content by listing NFTs for sale
CreateListingFunction
BuyListing
Allows users to purchase NFTs from the marketplace
BuyListingFunction
CancelListing
Removes NFTs from the marketplace
CancelListingFunction
GetListing
Accesses listing details
GetListingFunction


User shows interest in specific content
Access Check
Owns required NFTs
Ownership Validation
Necessary NFTs verified
Access Granted
User interacts with the content
Necessary NFTs not found
Does not own NFTs
Access Denied
User cannot access the content
3 APIS
REPLICATE
TEXT TO IMAGE
AI IMAGE GENERATION
TATUM
STORING THE DATA
PINATA
FETCHING THE DATA

RESULTS:



- The combination of Polygon Mumbai blockchain, Lens Protocol, Stable Diffusion and OpenZeppelin. Defender Relayer has provided a solid foundation for the platform and has the potential to revolutionize the social media industry.

PROJECT OUTCOMES:

1**. Secure and Decentralized Platform**: Creating a secure and decentralized environment ensures user data protection, transparency, and resistance to censorship. It fosters trust among users and ensures the platform's availability.

2. **User-Friendly Interface:** A user-friendly interface, intuitive navigation, and appealing visuals enhance user experience. Features like user profiles, feeds, groups, and messaging contribute to an engaging platform.

3. **Elimination of Gas Fees**: Removing financial barriers by eliminating gas fees encourages inclusivity, allowing users from various economic backgrounds to participate equally.

4. **Smart Contracts and Decentralized Identity Systems**: Integrating smart contracts and decentralized identity systems helps in combating bots and fake accounts, ensuring genuine user interactions.

5. **Monetization**: Exploring revenue streams such as advertising or subscriptions ensures sustainable funding. It supports content creators and incentivizes meaningful engagement while maintaining the platform's viability.

6. **Community-Driven Development**: An open-source approach encourages collaboration and innovation. It allows for community contributions, fostering a diverse ecosystem of developers and users invested in the platform's growth.

These outcomes collectively create an environment that prioritizes user experience, security, inclusivity, and sustainability—a crucial foundation for a successful blockchain-based social media platform.

CONCLUSION:

- In conclusion, the project has successfully addressed the problems of data ownership, and fair revenue distribution in social media platforms using blockchain technology.
- The integration with Polygon Mumbai blockchain has provided a feasible solution to the problem of high gas fees.
- The use of Lens Protocol has allowed users to retain ownership of their data and mint their posts as ERC1155 tokens, which can be sold on any marketplace, providing a fair revenue distribution model for content creators.
- The use of Stable Diffusion has allowed to generate images from text.
- The OpenZeppelin Defender Relayer has enabled gasless minting of ERC1155 tokens, reducing the barrier to entry for creators who are new to the blockchain space
- Overall, the project has shown that blockchain-based social media platforms can provide a fairer revenue distribution model and data ownership for creators while providing a seamless user experience for users.

REFERENCES:

- **Research Paper- 1 Title:** Incentivized Blockchain-based Social Media Platforms: A Case Study of Steemit Publication-WebSci '19: Proceedings of the10th ACM Conference on WebScience, June 2019, pages145-154 Authors-Chao Li, Balaji Palanisamy - https://dl.acm.org/doi/10.1145/3292522.3326041

- Title: Blockchain-Based Identity Verification System. Publications: 2019, IEEE 9th International Conference on System engineering and technology,7th october 2019. Author: Arshad Jamal, Rabab Alayham Abbas Helmi, Mariam-Aisha Fatima and Ampuan Siti Nurin Syahirah - https://ieeexplore.ieee.org/document/8906403