

## **Understanding Document**

The client, owns a coal mine, has a unique vision to capitalize on 20 million tons of coal by issuing 10 million tons as a tradable commodity. The goal is to provide users, primarily investors, with an opportunity to trade coal and gain fractional ownership through a specialized app. In this two-actor scenario, users play the role of investors, while admins manage the platform. Users register on the platform, create profiles, and explore listed coal with details like material and stock availability. Admins set the backend prices and values for the coal. Users can then select the quantity of coal they wish to purchase, and after the purchase, they gain the ability to monitor the current prices through a graph.

The app's significance lies in its unique features. Users enjoy the advantage of purchasing coal at a tradable commodity, which is tokenized at half of its original price. This tokenization process allows users to engage in trading and gain fractional ownership. Importantly, when users decide to redeem or return the coal, the app calculates the value based on the coal's quality and minerals. This means that users stand to profit from their investment. It's a novel approach where users not only participate in coal trading but also benefit from the potential increase in the value of their coal when they decide to redeem it. The app ensures transparency and accessibility for both investors and admins through the implementation of a smart contract, adding a layer of security and efficiency to the entire process.

### **User Flow:**

- **User Registration and Profile Creation:**
  - User registers on the platform, providing necessary details.
  - Creates a profile with personal information.
- **View Listed Coal:**
  - User logs in and sees the list of available coal for investment.
  - Accesses details like material, stock available, and quality.
- **Select Quantity and Purchase:**
  - User selects the desired quantity of coal to purchase.
  - Submits the purchase request.

- **Backend Price Assignment:**

- Admin, from the backend, assigns the price and value to the purchased coal based on quality and minerals.

- **Tokenization Process:**

- Coal purchased by the user is tokenized and represented as tradable assets.
- User receives a confirmation of successful tokenization.

- **Graph of Current Prices:**

- User views a graph displaying the current market prices of the purchased coal.
- Prices are determined by the backend value assigned by the admin.

- **Redeem/Return Coal:**

- User decides to redeem/return the coal.
- The backend calculates the value based on quality and minerals.

- **Profit Calculation:**

- User receives money in return for the coal, gaining profit as the value is calculated based on quality.

- **Smart Contract Execution:**

- Smart contract handles the tokenization, pricing, and redemption processes securely.

### **Admin Panel Flow:**

- **User Management:**

- Admin manages user registrations and profiles.
- Ensures the security and integrity of user data.

- **Coal Listing and Details:**

- Admin adds new coal listings with detailed information (material, stock, quality).
- Updates existing coal details.

- **Price Assignment:**

- Admin sets the backend price and value for coal based on quality and minerals.
- Ensures fair and transparent pricing.

- **Tokenization Management:**

- Admin oversees the tokenization process of purchased coal.
- Manages the tokenized assets securely.

- **Graph Generation:**

- Admin inputs backend values for coal, which dynamically generate the graph of current market prices for users.

- **Redemption Process:**

- Manages the process of users redeeming/returning coal.
- Coordinates with the backend calculation of coal value.

- **Smart Contract Monitoring:**

- Admin monitors and ensures the proper execution of smart contracts.
- Resolves any issues related to tokenization, pricing, or redemption.

- **Communication and Support:**

- Admin facilitates communication with users.
- Provides support for queries related to coal, pricing, and transactions.
- This user flow and admin panel flow ensure a comprehensive understanding of the coal trading and tokenization platform, covering all the key points mentioned in the business need.