

AUTHENTICATION OF PRODUCT & COUNTERFEITS DETECTION USING BLOCKCHAIN (AuthDApp)

SUBMITTED BY

PRAYAG DEY (10271022020)

ANANYA KUNDU (10271022026)

SUDIPA BISWAS (10271022027)

SUPERVISOR

Mrs. ARPITA NATH

(ASSISTANT PROFESSOR)



DESCRIPTION OF THE PROJECT

PROBLEM STATEMENT

- Authentication of products and identification of counterfeits without third-party involvement

APPROACH TO THE SOLUTION

- We are proposing a decentralized app so that the consumers don't have to rely on the word of mouth of the seller but the product itself.

TECHNOLOGIES INVOLVED

- Solidity, React, Web3.js, Truffle, MetaMask, Ganache

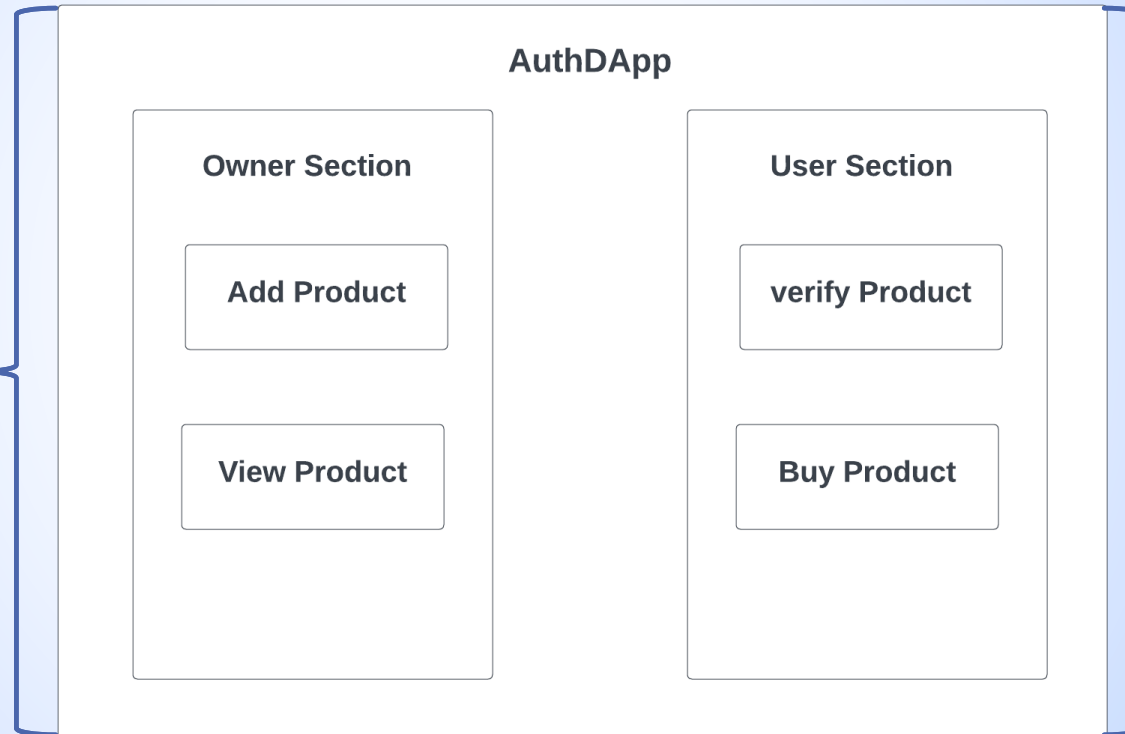


DETAILS OF TECHNOLOGIES

- **Solidity:-** Programming Language used for creating smart contracts for Ethereum blockchain.
- **React.js:-** A front-end JavaScript library for building user interfaces based on components.
- **Web3.js:-** A collection of libraries that allow you to interact with a local or remote Ethereum node, using a HTTP or IPC connection.
- **Truffle:-** Framework for compilation and deployment of smart contracts.
- **MetaMask:-** A cryptocurrency wallet used to interact with the Ethereum blockchain.
- **Ganache:-** A personal blockchain for Ethereum application development.

DESCRIPTION OF THE SOLUTION

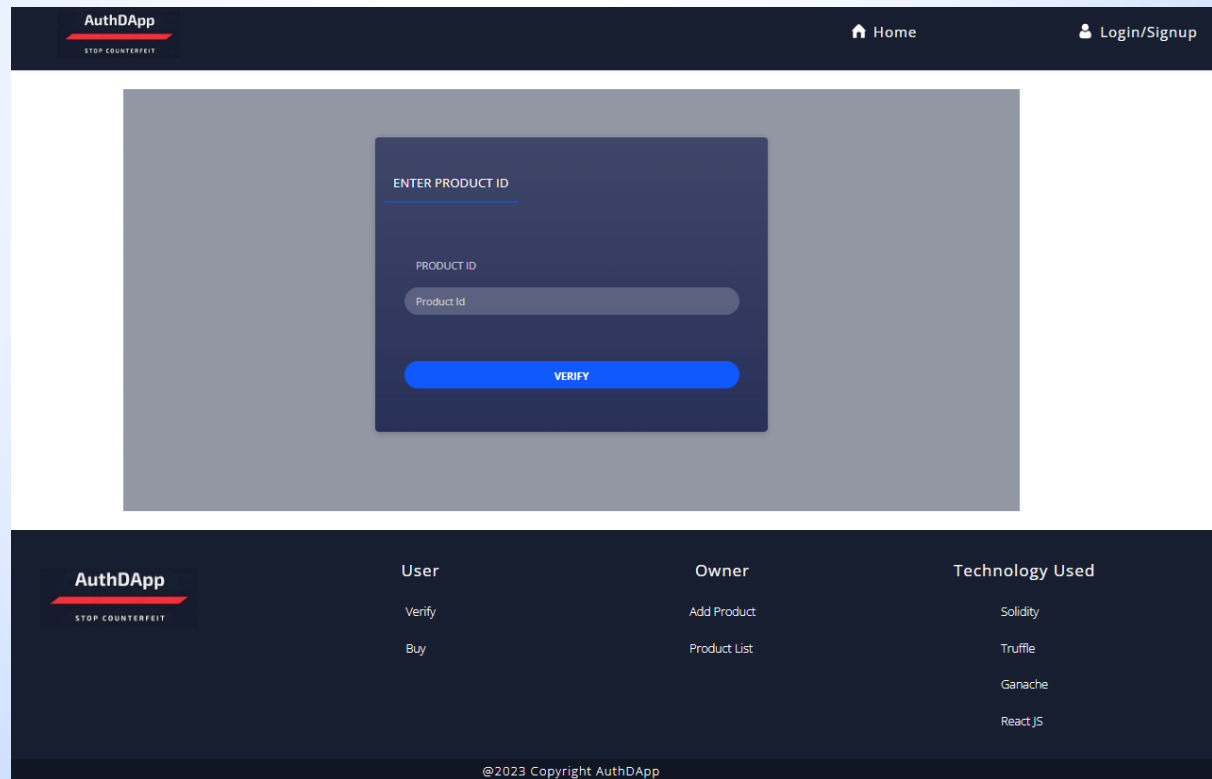
**Owner can
add a new
product and
also view it.**



**User can verify
the product
using the
product ID and
can also buy it.
(without any
third-party
involvement)**

WORKING PROTOTYPE

➡ HOME PAGE



The screenshot displays the AuthDApp home page. At the top, a dark header contains the AuthDApp logo with the tagline 'STOP COUNTERFEIT' on the left, and navigation links for 'Home' and 'Login/Signup' on the right. The main content area features a central dark card with the title 'ENTER PRODUCT ID'. Below the title is a text input field labeled 'PRODUCT ID' with the placeholder text 'Product Id', and a prominent blue 'VERIFY' button. The footer is a dark bar with the AuthDApp logo on the left, a list of links (User, Verify, Buy, Owner, Add Product, Product List, Technology Used) in the center, and a copyright notice '@2023 Copyright AuthDApp' on the right.

User	Owner	Technology Used
Verify	Add Product	Solidity
Buy	Product List	Truffle
		Ganache
		ReactJS

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LOG IN SCENARIO

The image shows a web browser window with the AuthDApp interface. The browser's address bar shows 'AuthDApp' and a tab icon. The website has a dark header with the 'AuthDApp' logo and the tagline 'STOP COUNTERFEIT' on the left, and a 'Home' link on the right. The main content area is a light gray rectangle containing a dark blue login box. This box has the title 'ENTER PRODUCT ID' and a 'PRODUCT ID' label above a text input field. The input field contains the placeholder text 'Product Id'. Below the input field is a large blue button labeled 'VERIFY'.

Overlaid on the right side of the browser window is a MetaMask notification window. It features the MetaMask fox logo at the top, followed by the text 'Welcome back!' and 'The decentralized web awaits'. Below this is a 'Password' label and a text input field. A blue button labeled 'Unlock' is positioned below the password field. At the bottom of the notification, there are two links: 'Forgot password?' and 'Need help? Contact MetaMask support'.

➡ ADD PRODUCT PAGE

AuthDApp

STOP COUNTERFEIT

[Home](#)

[Logout](#)

ADD PRODUCT

NAME

Product Name

PRICE

Product Price

PRODUCT ID

Product ID

ADD PRODUCT

AuthDApp

STOP COUNTERFEIT

User	Owner	Technology Used
Verify	Add Product	Solidity
Buy	Product List	Truffle
		Ganache
		React JS

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PRODUCT ADDING SCENARIO

The image shows a web browser window displaying the AuthDApp interface. The app has a dark header with the logo 'AuthDApp' and the tagline 'STOP COUNTERFEIT'. A 'Home' button is visible in the top right. The main content area features a dark blue 'ADD PRODUCT' form with three input fields: 'NAME' (containing 'Laptop'), 'PRICE' (containing '55000'), and 'PRODUCT ID' (containing '8654218'). A large blue 'ADD PRODUCT' button is at the bottom of the form.

Overlaid on the right side of the browser window is a MetaMask Notification window. It shows the transaction details for a contract interaction at the URL 'http://localhost:3000'. The transaction is from 'Account 8' (address '0xEE505...0C6E9') to 'DxEE505...0C6...'. The notification includes a 'Site suggested' link, gas information ('Gas (estimated) 0.01 0.01 ETH', 'Very likely in < 15 seconds', 'Max fee: 0.01 ETH'), and a total amount ('Total 0.01 0.01 ETH', 'Amount + gas fee', 'Max amount: 0.01 ETH'). At the bottom of the notification are 'Reject' and 'Confirm' buttons.

PRODUCT LIST

AuthDApp
STOP COUNTERFEIT

Home

Logout

Products you own

1. 211232
Aspirin

2. 2411
Programming with C++

3. 3210
Introduction to Algorithms

4. 8654218
Laptop

Product Added Successfully X

➤ PRODUCT VERIFY PAGE

AuthDApp

STOP COUNTERFEIT

[Home](#)

[Login/Signup](#)

ENTER PRODUCT ID

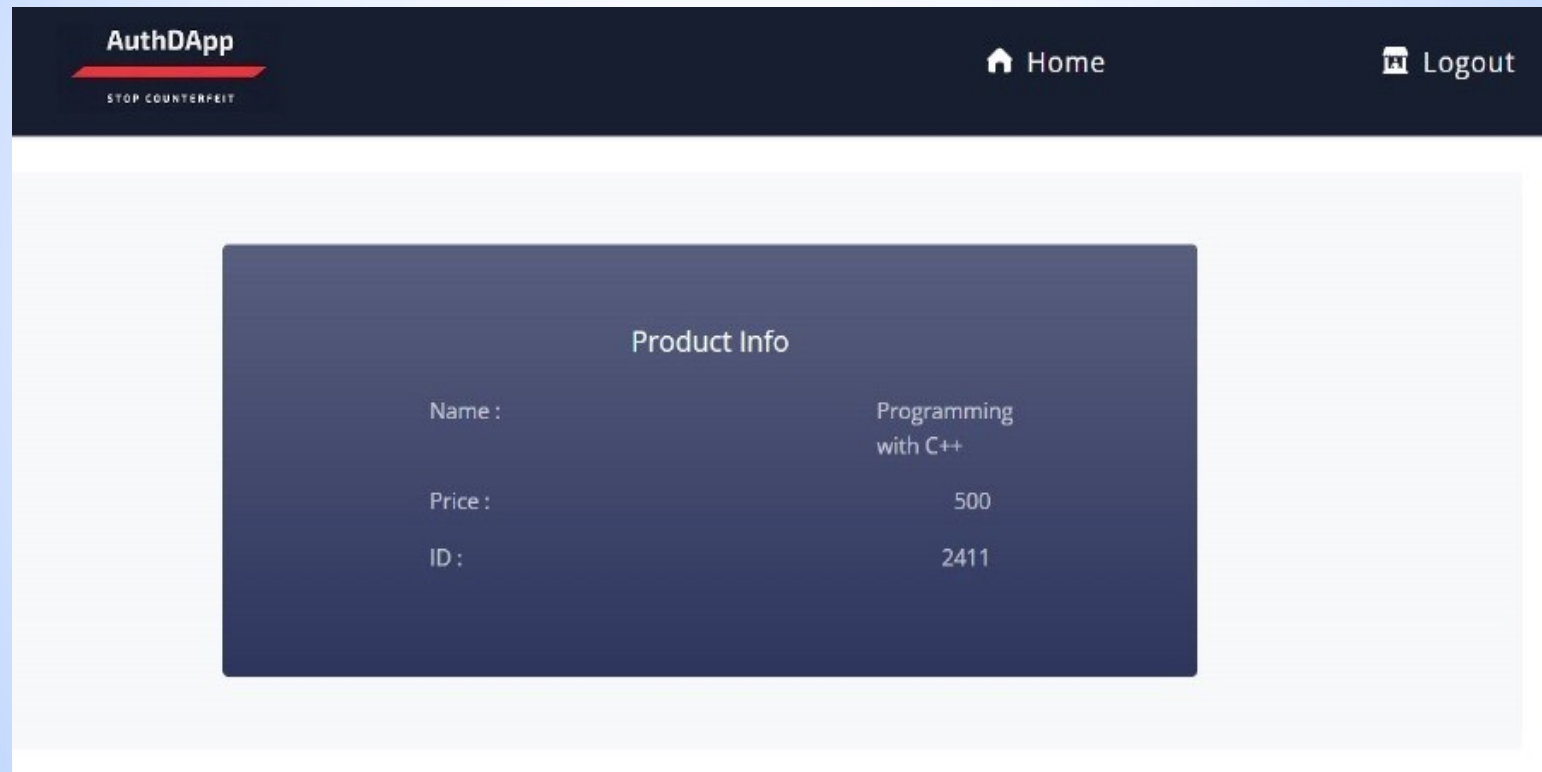
PRODUCT ID

Product Id

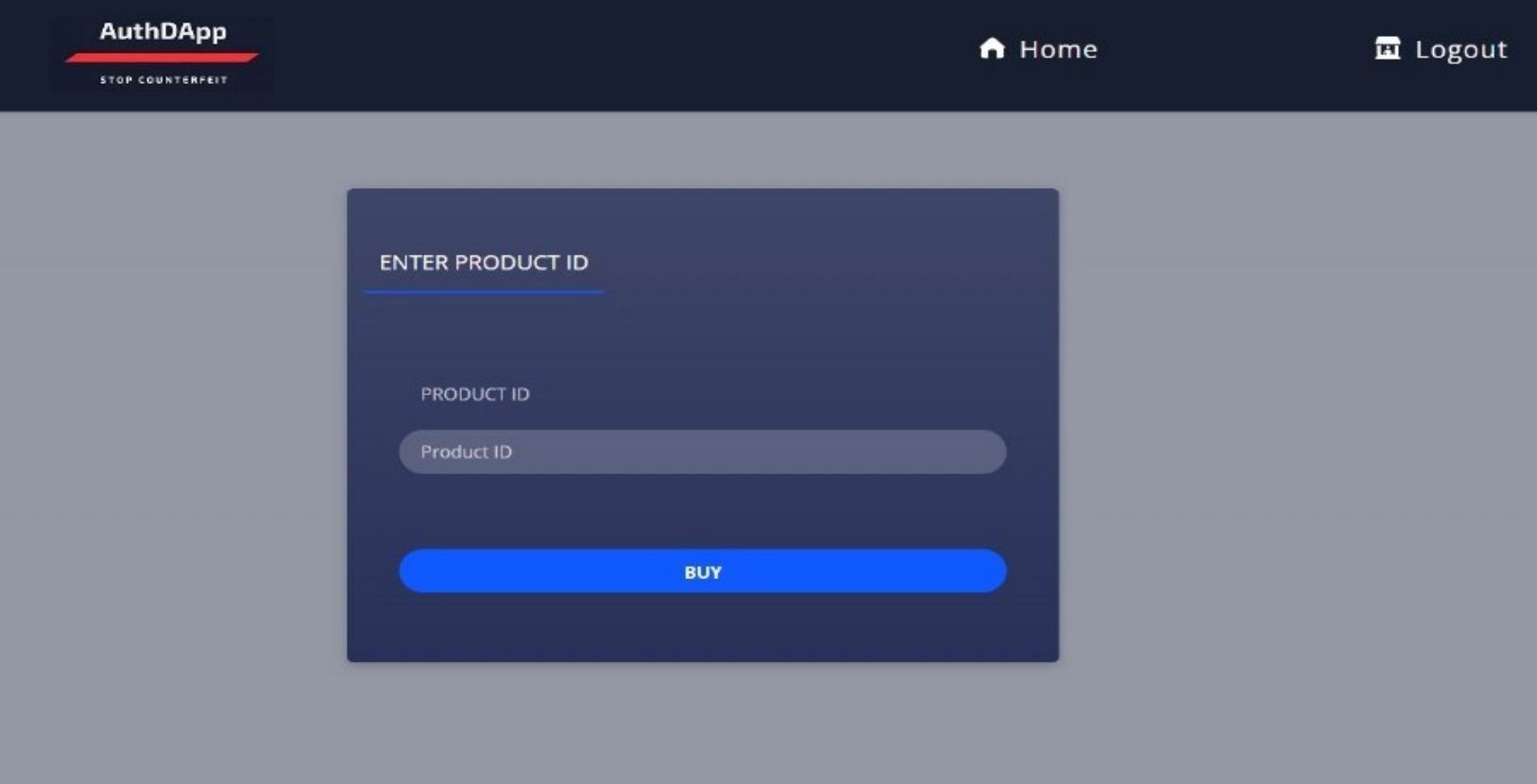
VERIFY

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➤ PRODUCT INFO (VERIFYING SCENARIO)



➤ PRODUCT BUY PAGE



The image shows a mockup of a web application interface for a product purchase. The top navigation bar is dark blue with the 'AuthDApp' logo on the left, which includes the tagline 'STOP COUNTERFEIT'. On the right side of the navigation bar are links for 'Home' and 'Logout'. The main content area has a light gray background. In the center, there is a dark blue rectangular card. Inside this card, the text 'ENTER PRODUCT ID' is displayed above a horizontal line. Below the line, the label 'PRODUCT ID' is positioned above a text input field that contains the placeholder text 'Product ID'. At the bottom of the card is a prominent blue button with the word 'BUY' in white capital letters.

AuthDApp
STOP COUNTERFEIT

Home Logout

ENTER PRODUCT ID

PRODUCT ID

Product ID

BUY

PRODUCT BUYING SCENARIO

The screenshot displays the AuthDApp interface for buying a product. The main content area shows a large dark blue rectangle with a white loading spinner. Below this is a navigation menu with three columns: User (Verify, Buy), Owner (Add Product, Product List), and Technology Used (Solidity, Truffle, Ganache). A modal form titled "ENTER PRODUCT ID" is open, featuring a text input field labeled "Product ID" and a prominent blue "BUY" button. At the bottom, a dark footer contains a success message "Product Bought Successfully" with a close icon, followed by the AuthDApp logo and the words "User", "Owner", and "Technology Used".

Account 8
0x16bd6...A42...

http://localhost:3000
0x16bd6...A42f8 : BUY PRODUCT

DETAILS DATA HEX

Site suggested >

Gas (estimated) 0.01 0.01 ETH
Very likely in < 15 seconds Max fee: 0.01 ETH

Total 0.01 0.01 ETH
Amount + gas fee Max amount: 0.01 ETH

Reject Confirm

AuthDApp
STOP COUNTERFEIT

Home

User Owner Technology Used

Verify Add Product Solidity

Buy Product List Truffle

Ganache

ENTER PRODUCT ID

PRODUCT ID

Product ID

BUY

Product Bought Successfully X AuthDApp User Owner Technology Used




LIMITATIONS & CONSIDERATIONS

- **Integration Challenges**
 - **Scalability**
 - **Costs**
 - **Smart Contract Vulnerabilities**
 - **Security Vulnerabilities**
 - **Local Blockchain Infrastructure Limitation**
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FUTURE SCOPE

- Exploration of potential advancements, including integration with AI and IoT devices.
 - Enhancements in user experience and interfaces.
 - Consideration of interoperability with other blockchain networks.
 - Possible integration of a 'Seller Section'.
 - Generation of a distinct QR code for each product.
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CONCLUSION

- **Revolutionary Solution**
 - **Enhancing Supply Chain Security**
 - **User-Centric Approach**
 - **Future Innovation and Collaboration**
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THANK YOU