BLOCKCHAIN FOR THE GOVERNMENT TO BE ABLE TO TRACK THE ORIGIN AND DESTINATION OF PRODUCT

**Backend code:**

**Solidity code:**

// SPDX-License-Identifier: MIT

pragma solidity ^0.8.0;

contract GovernmentProductTracking {

// Define a structure to store product information

struct Product {

string origin;

string destination;

bool isTracked;

}

// Mapping from product ID to product information

mapping(string => Product) public products;

// Event to log when a product is tracked

event ProductTracked(string productId, string origin, string destination);

// Function to track a product by product ID

function trackProduct(string memory productId, string memory origin, string memory destination) public {

// Ensure that the product is not already tracked

require(!products[productId].isTracked, "Product is already tracked.");

// Store the product details

products[productId] = Product({

origin: origin,

destination: destination,

isTracked: true

});

// Emit an event for tracking the product

emit ProductTracked(productId, origin, destination);

}

// Function to retrieve the product information by product ID

function getProductInfo(string memory productId) public view returns (string memory origin, string memory destination, bool isTracked) {

// Return the product information if it is tracked

Product memory product = products[productId];

return (product.origin, product.destination, product.isTracked);

}

}

**Frontend code:**

**Html & CSS:**

**Home.html code:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Government Services Portal</title>

<link href="https://fonts.googleapis.com/css2?family=Open+Sans&display=swap" rel="stylesheet">

<style>

/\* Existing styles from your code \*/

body {

background-color: #f5f5f5;

font-family: 'Open Sans', serif;

margin: 0;

padding: 0;

}

.header {

background-color: #0056b3;

color: #fff;

padding: 15px 20px;

text-align: center;

position: sticky;

top: 0;

}

.header img {

max-height: 60px;

vertical-align: middle;

}

.header h1 {

display: inline-block;

font-size: 1.5rem;

margin: 0;

vertical-align: middle;

}

.nav-buttons {

margin: 20px 0;

display: flex;

justify-content: center;

gap: 2cm;

}

.nav-buttons a {

background-color: #003d80;

color: #fff;

text-decoration: none;

padding: 10px 20px;

border-radius: 5px;

font-size: 1rem;

transition: background-color 0.3s ease;

}

.nav-buttons a:hover {

background-color: #002f63;

}

.container {

margin: 50px auto;

padding: 20px;

max-width: 800px;

background: #fff;

box-shadow: 0 4px 10px rgba(0, 0, 0, 0.1);

border-radius: 8px;

}

h2 {

color: #333;

margin-bottom: 10px;

text-align: center;

}

p {

color: #555;

line-height: 1.6;

text-align: justify;

}

.blockchain-section {

margin-top: 30px;

padding: 20px;

background-color: #e3f2fd;

border-left: 5px solid #0056b3;

border-radius: 5px;

}

.blockchain-section h3 {

color: #0056b3;

margin-bottom: 10px;

}

.blockchain-section p {

color: #333;

margin-bottom: 0;

}

footer {

text-align: center;

padding: 10px 0;

background-color: #003d80;

color: #fff;

margin-top: 50px;

}

.btn {

display: inline-block;

background-color: #0056b3;

color: #fff;

padding: 10px 20px;

text-decoration: none;

border-radius: 5px;

text-align: center;

transition: background-color 0.3s ease;

}

.btn:hover {

background-color: #003d80;

}

.blockchain-output {

margin-top: 20px;

color: #333;

font-size: 1rem;

}

</style>

</head>

<body>

<div class="header">

<img src="https://via.placeholder.com/60" alt="Government Emblem">

<h1>Government of [Country/State]</h1>

<div class="nav-buttons">

<a href="home.html">Home</a>

<a href="product.html">Product</a>

<a href="about.html">About Us</a>

<a href="contact.html">Contact</a>

</div>

</div>

<div class="container">

<h2>Welcome to the Official Services Portal</h2>

<p>

This portal is your gateway to a wide range of government services and information.

Designed to provide efficient and transparent access to services, it ensures that all citizens can stay informed and benefit from the resources available.

</p>

<p>

From tracking applications to accessing essential documents, our mission is to make services more accessible and convenient for you.

</p>

<div class="blockchain-section">

<h3>Blockchain Technology for Secure Transactions</h3>

<p>

Our services leverage blockchain technology to ensure transparency, security, and efficiency.

All your records are maintained on a decentralized ledger, reducing the risk of fraud and enabling easy verification.

Blockchain helps us provide:

</p>

<ul>

<li>Immutable and secure transaction records.</li>

<li>Faster service processing and tracking.</li>

<li>Enhanced trust through transparent operations.</li>

</ul>

</div>

<!-- Blockchain ABN Section -->

<div class="blockchain-output" id="blockchain-output">

<button id="connect-wallet" class="btn">Connect Wallet</button>

<p id="abn-address"></p>

</div>

</div>

<footer>

&copy; 2024 Government of [Country/State]. All Rights Reserved.

</footer>

<!-- JavaScript Section -->

<script src="https://cdn.jsdelivr.net/gh/ethereum/web3.js/dist/web3.min.js"></script>

<script>

document.getElementById('connect-wallet').addEventListener('click', async () => {

if (window.ethereum) {

try {

// Request accounts

const accounts = await ethereum.request({ method: 'eth\_requestAccounts' });

const userAccount = accounts[0];

// Display the connected address

const abnInfo = '0xca8f078f6d905899173f765686f6546c4157199d' + userAccount;

document.getElementById('').innerText = abnInfo;

// Initialize Web3 instance

const web3 = new Web3(window.ethereum);

// Contract ABI and address (dummy example)

const contractABI = [

];

const contractAddress = '0xf513a8dece66b45bbc36d669c35d140230ed8f6f';

const contract = new web3.eth.Contract(contractABI, contractAddress);

// Fetch ABN from contract

const abn = await contract.methods.getABN().call();

document.getElementById('abn-address').innerText += '\nBlockchain ABN: ' + abn;

} catch (error) {

console.error('Error connecting wallet:', error);

alert('Could not connect to MetaMask. Please try again.');

}

} else {

alert('MetaMask is not installed. Please install MetaMask and try again.');

}

});

</script>

</body>

</html>

**About us html code:**

**aboutus.html :**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>About Us - Government Services</title>

<link href="https://fonts.googleapis.com/css2?family=Open+Sans&display=swap" rel="stylesheet">

<style>

body {

font-family: 'Open Sans', sans-serif;

background-color: #f5f5f5;

margin: 0;

padding: 0;

}

.header {

background-color: #0056b3;

color: #fff;

padding: 15px;

text-align: center;

}

.header h1 {

margin: 0;

}

.container {

margin: 50px auto;

padding: 20px;

max-width: 800px;

background-color: #fff;

border-radius: 8px;

box-shadow: 0 4px 10px rgba(0, 0, 0, 0.1);

}

h2 {

text-align: center;

color: #333;

}

p {

color: #555;

line-height: 1.6;

margin-bottom: 15px;

}

ul {

margin-top: 10px;

padding-left: 20px;

color: #555;

}

ul li {

margin-bottom: 10px;

}

.blockchain {

margin-top: 20px;

padding: 20px;

background-color: #e3f2fd;

border-left: 5px solid #0056b3;

border-radius: 5px;

}

footer {

text-align: center;

padding: 10px 0;

background-color: #003d80;

color: #fff;

margin-top: 50px;

}

</style>

</head>

<body>

<div class="header">

<h1>About Us</h1>

</div>

<div class="container">

<h2>Our Mission</h2>

<p>

Our government strives to innovate and provide cutting-edge technology to deliver secure and efficient services to citizens.

</p>

<div class="blockchain">

<h3>Blockchain for Tracking Products</h3>

<p>

Our blockchain-based system allows us to track the origin and destination of products in a transparent and secure manner.

With the help of decentralized technology, we ensure:

</p>

<ul>

<li><strong>Transparency:</strong> All records are stored on an immutable ledger accessible to authorized parties.</li>

<li><strong>Efficiency:</strong> Faster and more reliable product tracking across supply chains.</li>

<li><strong>Security:</strong> Elimination of fraud through decentralized verification.</li>

<li><strong>Trust:</strong> Empowering stakeholders with reliable, tamper-proof records.</li>

</ul>

<p>

By adopting blockchain, we aim to enhance trust and accountability while streamlining operations across government services.

</p>

</div>

</div>

<footer>

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</footer>

</body>

</html>

**Contact us html code:**

**Contactus.html:**

**<!DOCTYPE html>**

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Contact Us - Government Services</title>

<link href="https://fonts.googleapis.com/css2?family=Open+Sans&display=swap" rel="stylesheet">

<style>

body {

font-family: 'Open Sans', sans-serif;

background-color: #f5f5f5;

margin: 0;

padding: 0;

}

.header {

background-color: #0056b3;

color: #fff;

padding: 15px;

text-align: center;

}

.header h1 {

margin: 0;

}

.container {

margin: 50px auto;

padding: 20px;

max-width: 600px;

background-color: #fff;

border-radius: 8px;

box-shadow: 0 4px 10px rgba(0, 0, 0, 0.1);

}

h2 {

text-align: center;

color: #333;

}

p {

color: #555;

line-height: 1.6;

margin-bottom: 15px;

}

.info {

margin-top: 20px;

padding: 20px;

background-color: #e3f2fd;

border-left: 5px solid #0056b3;

border-radius: 5px;

}

footer {

text-align: center;

padding: 10px 0;

background-color: #003d80;

color: #fff;

margin-top: 50px;

}

</style>

</head>

<body>

<div class="header">

<h1>Contact Us</h1>

</div>

<div class="container">

<h2>Get in Touch</h2>

<p>

We are here to assist you with any inquiries related to our government services.

Feel free to reach out to us through the contact details below:

</p>

<div class="info">

<p><strong>Contact Number:</strong> +1-800-GOV-HELP (1-800-468-4357)</p>

<p><strong>Email:</strong> contact@govservices.org</p>

<p><strong>Office Hours:</strong> Monday to Friday, 9:00 AM - 5:00 PM</p>

</div>

</div>

<footer>

&copy; 2024 Government of [Country/State]. All Rights Reserved.

</footer>

</body>

</html>

**Product button code :**

**product.html :**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Our Products</title>

<link href="https://fonts.googleapis.com/css2?family=Open+Sans&display=swap" rel="stylesheet">

<style>

body {

background-color: #f5f5f5;

font-family: 'Open Sans', serif;

margin: 0;

padding: 0;

}

.header {

background-color: #0056b3;

color: #fff;

padding: 15px 20px;

text-align: center;

position: sticky;

top: 0;

}

.header img {

max-height: 60px;

vertical-align: middle;

}

.header h1 {

display: inline-block;

font-size: 1.5rem;

margin: 0;

vertical-align: middle;

}

.nav-buttons {

margin: 20px 0;

display: flex;

justify-content: center;

gap: 2cm;

}

.nav-buttons a {

background-color: #003d80;

color: #fff;

text-decoration: none;

padding: 10px 20px;

border-radius: 5px;

font-size: 1rem;

transition: background-color 0.3s ease;

}

.nav-buttons a:hover {

background-color: #002f63;

}

.container {

margin: 50px auto;

padding: 20px;

max-width: 1000px;

background: #fff;

box-shadow: 0 4px 10px rgba(0, 0, 0, 0.1);

border-radius: 8px;

}

h2 {

color: #333;

margin-bottom: 20px;

text-align: center;

}

.product-grid {

display: grid;

grid-template-columns: repeat(auto-fit, minmax(300px, 1fr));

gap: 20px;

}

.product-card {

background: #f9f9f9;

border: 1px solid #ddd;

border-radius: 8px;

overflow: hidden;

text-align: center;

transition: transform 0.3s ease, box-shadow 0.3s ease;

}

.product-card:hover {

transform: translateY(-5px);

box-shadow: 0 8px 15px rgba(0, 0, 0, 0.2);

}

.product-card img {

max-width: 100%;

height: auto;

}

.product-card h3 {

color: #0056b3;

margin: 15px 0 10px;

}

.product-card p {

color: #555;

font-size: 0.9rem;

margin: 0 15px 15px;

}

.product-card a {

display: inline-block;

background-color: #0056b3;

color: #fff;

text-decoration: none;

padding: 10px 20px;

border-radius: 5px;

margin-bottom: 15px;

}

.product-card a:hover {

background-color: #003d80;

}

footer {

text-align: center;

padding: 10px 0;

background-color: #003d80;

color: #fff;

margin-top: 50px;

}

</style>

</head>

<body>

<div class="header">

<img src="https://via.placeholder.com/60" alt="Government Emblem">

<h1>Our Products</h1>

<div class="nav-buttons">

<a href="home.html">Home</a>

<a href="product.html">Product</a>

<a href="about.html">About Us</a>

<a href="contact.html">Contact</a>

</div>

</div>

<div class="container">

<h2>Explore Our Services and Products</h2>

<div class="product-grid">

<!-- Product Card 1 -->

<div class="product-card">

<img src="https://tse1.mm.bing.net/th?id=OIP.KIbaAC94oWWVKAArzBS2QAHaEc&pid=Api&P=0&h=180" alt="Product Image">

<h3>Service 1</h3>

<p>

Description of the service. Efficient, reliable, and secure for all your needs.

</p>

<a href="#">Learn More</a>

</div>

<!-- Product Card 2 -->

<div class="product-card">

<img src="https://tse3.mm.bing.net/th?id=OIP.NXlFaQU9ZxqoqqsMCuLjSAHaDu&pid=Api&P=0&h=180" alt="Product Image">

<h3>Service 2</h3>

<p>

Simplifying processes and improving transparency for users.

</p>

<a href="#">Learn More</a>

</div>

<!-- Product Card 3 -->

<div class="product-card">

<img src="https://tse1.mm.bing.net/th?id=OIP.qKuFkc8lqq6f7ghQPZE9JAHaEo&pid=Api&P=0&h=180" alt="Product Image">

<h3>Service 3</h3>

<p>

Cutting-edge technology to enhance accessibility and efficiency.

</p>

<a href="#">Learn More</a>

</div>

<!-- Add more cards as needed -->

</div>

</div>

<footer>

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</footer>

</body>

</html>

**Searching button code:**

Searching.html

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Blockchain Product Tracking for Government</title>

<style>

body {

font-family: Arial, sans-serif;

margin: 0;

padding: 0;

background-color: #f4f4f9;

}

header {

background-color: #4c78af;

color: #fff;

padding: 1em;

text-align: center;

}

.container {

padding: 20px;

}

h2 {

color: #4c78af;

}

.tracking-info {

background-color: #ffffff;

padding: 15px;

margin: 15px 0;

border: 1px solid #ddd;

border-radius: 8px;

display: none; /\* Hide by default \*/

}

.tracking-info p {

margin: 0;

padding: 5px 0;

}

.button, .search-button {

background-color: #4c7aaf;

color: white;

padding: 10px 20px;

border: none;

cursor: pointer;

text-align: center;

border-radius: 5px;

margin-top: 10px;

}

.button:hover, .search-button:hover {

background-color: #4562a0;

}

</style>

</head>

<body>

<header>

<h1>Blockchain Tracking System for Government Product Monitoring</h1>

</header>

<div class="container">

<h2>Search for a Product</h2>

<p>Available Product IDs: 12345</p>

<input type="text" id="productID" placeholder="Enter Product ID">

<div id="productDetails" class="tracking-info">

<p><strong>Product ID:</strong> <span id="productId"></span></p>

<p><strong>Origin:</strong> <span id="origin"></span></p>

<p><strong>Destination:</strong> <span id="destination"></span></p>

<p><strong>Status:</strong> <span id="status"></span></p>

</div>

<a href="order-tracking.html" class="button">search</a>

</div>

<script>

// Sample data to simulate blockchain or database records

const productData = {

"12345": { origin: "Manufacturing Facility, City A", destination: "Retail Store, City B", status: "In Transit" },

"67890": { origin: "Farm, Region X", destination: "Distribution Center, Region Y", status: "Delivered" },

"11121": { origin: "Warehouse, City C", destination: "Customer, City D", status: "Shipped" },

"54321": { origin: "Port, Country E", destination: "Warehouse, Country F", status: "Customs Clearance" },

"98765": { origin: "Factory, City G", destination: "Retail Outlet, City H", status: "Awaiting Dispatch" }

};

// Function to search for a product by ID

function searchProduct() {

const productId = document.getElementById("productID").value;

const productInfo = productData[productId];

if (productInfo) {

// Display product details

document.getElementById("productId").textContent = productId;

document.getElementById("origin").textContent = productInfo.origin;

document.getElementById("destination").textContent = productInfo.destination;

document.getElementById("status").textContent = productInfo.status;

document.getElementById("productDetails").style.display = "block";

} else {

// If product not found

alert("Product not found. Please enter a valid Product ID.");

document.getElementById("productDetails").style.display = "none";

}

}

</script>

</body>

</html>

**Ordertracking page code:**

**Ordertracking.html:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Order Tracking</title>

<link href="https://fonts.googleapis.com/css2?family=Open+Sans&display=swap" rel="stylesheet">

<style>

body {

background-color: #eeeeee;

font-family: 'Open Sans', serif;

}

.container {

margin-top: 50px;

margin-bottom: 50px;

}

.card {

position: relative;

display: flex;

flex-direction: column;

min-width: 0;

word-wrap: break-word;

background-color: #fff;

background-clip: border-box;

border: 1px solid rgba(0, 0, 0, 0.1);

border-radius: 0.10rem;

}

.card-header:first-child {

border-radius: calc(0.37rem - 1px) calc(0.37rem - 1px) 0 0;

}

.card-header {

padding: 0.75rem 1.25rem;

margin-bottom: 0;

background-color: #fff;

border-bottom: 1px solid rgba(0, 0, 0, 0.1);

}

.track {

position: relative;

background-color: #ddd;

height: 7px;

display: flex;

margin-bottom: 60px;

margin-top: 50px;

}

.track .step {

flex-grow: 1;

width: 25%;

margin-top: -18px;

text-align: center;

position: relative;

}

.track .step.active:before {

background: #FF5722;

}

.track .step::before {

height: 7px;

position: absolute;

content: "";

width: 100%;

left: 0;

top: 18px;

}

.track .step.active .icon {

background: #ee5435;

color: #fff;

}

.track .icon {

display: inline-block;

width: 40px;

height: 40px;

line-height: 40px;

position: relative;

border-radius: 100%;

background: #ddd;

}

.track .step.active .text {

font-weight: 400;

color: #000;

}

.track .text {

display: block;

margin-top: 7px;

}

.itemside {

position: relative;

display: flex;

width: 100%;

}

.itemside .aside {

flex-shrink: 0;

}

.img-sm {

width: 80px;

height: 80px;

padding: 7px;

}

ul.row, ul.row-sm {

list-style: none;

padding: 0;

}

.itemside .info {

padding-left: 15px;

padding-right: 7px;

}

.itemside .title {

display: block;

margin-bottom: 5px;

color: #212529;

}

p {

margin-top: 0;

margin-bottom: 1rem;

}

.btn-warning {

color: #ffffff;

background-color: #ee5435;

border-color: #ee5435;

border-radius: 1px;

}

.btn-warning:hover {

color: #ffffff;

background-color: #ff2b00;

border-color: #ff2b00;

border-radius: 1px;

}

</style>

</head>

<body>

<div class="container">

<article class="card">

<header class="card-header"> My Orders / Tracking </header>

<div class="card-body">

<h6>Order ID: 12345</h6>

<article class="card">

<div class="card-body row">

<div class="col"> <strong>Estimated Delivery time:</strong> <br>29 Nov 2024 </div>

<div class="col"> <strong>Shipping BY:</strong> <br> Government, | <i class="fa fa-phone"></i> +1598675986 </div>

<div class="col"> <strong>Status:</strong> <br> Picked by the courier </div>

<div class="col"> <strong>Tracking #:</strong> <br> BD045903594059 </div>

</div>

</article>

<div class="track">

<div class="step active"> <span class="icon"> <i class="fa fa-check"></i> </span> <span class="text">Order confirmed</span> </div>

<div class="step active"> <span class="icon"> <i class="fa fa-user"></i> </span> <span class="text"> Picked by courier</span> </div>

<div class="step"> <span class="icon"> <i class="fa fa-truck"></i> </span> <span class="text"> On the way </span> </div>

<div class="step"> <span class="icon"> <i class="fa fa-box"></i> </span> <span class="text">Ready for pickup</span> </div>

</div>

<hr>

<ul class="row">

<li class="col-md-4">

<figure class="itemside mb-3">

<div class="aside"><img src="https://tse3.mm.bing.net/th?id=OIP.31EQOXFcn6fCjsPnCZ9xdgHaEK&pid=Api&P=0&h=180" class="img-sm border"></div>

<figcaption class="info align-self-center">

<p class="title">Government ration <br> 14 items</p> <span class="text-muted">free </span>

</figcaption>

</figure>

</li>

</ul>

<hr>

<a href="#" class="btn btn-warning" data-abc="true"> <i class="fa fa-chevron-left"></i> Back to orders</a>

</div>

</article>

</div>

</body>

</html>