A Project Report

On

Pet Adoption Platform

By

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Under the guidance of

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“येथे बहुतांचे हित”

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SAVITRIBAI PHULE PUNE

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“ येथे बहुतांचे हित ”

CERTIFICATE

This is to certify that,

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of class B.E Computer have successfully completed their project work on “Pet Adoption Platform” at MARATHWADA MITRA MANDAL'S COLLEGE OF ENGINEERING in the partial fulfillment of the Graduate Degree course in BE Machine Learning Subject at the Department of Computer Engineering, in the academic Year 2024-2025 Semester – I as prescribed by the Savitribai Phule Pune University.

Prof. Aishwarya Mane
Guide

Prof K.S Thakre
Head of the Department
(Department of Computer Engineering)

Acknowledgement

I feel great pleasure in expressing my deepest sense of gratitude and sincere thanks to my guide **Prof. Aishwarya Mane** for her valuable guidance during the Project work, without which it would have been a very difficult task. I have no words to express my sincere thanks for valuable guidance, extreme assistance and cooperation extended to all the **Staff Members** of my Department.

This acknowledgement would be incomplete without expressing my special thanks to **Prof.** K. S Thakre, Head of the Department for their support during the work.

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Finally, I would like to thank all the Teaching, Non- Teaching staff members of my Department, my parents and my colleagues who helped me directly or indirectly for completing this Project successfully.

Name of Students

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1. ABSTRACT

This project introduces a blockchain-based **Pet Adoption Platform** on the Ethereum platform, enabling users to adopt pets in a decentralized and transparent manner. The system utilizes Solidity smart contracts to manage pet adoption transactions, ensuring secure and immutable records on the blockchain. Through this platform, users can view available pets, register as adopters, and complete the adoption process securely. The project aims to eliminate the need for intermediaries in pet adoption, enhancing trust and data integrity within the adoption process.

2. CONTENTS

3. CHAPTER 1: INTRODUCTION

Blockchain technology has the potential to transform various sectors by increasing transparency and security. This project applies blockchain principles to a **Pet Adoption Platform**, addressing issues in traditional pet adoption systems, such as data manipulation and the need for intermediaries. By using Ethereum's decentralized infrastructure, each adoption transaction is securely recorded and immutable, reducing the risk of fraud..

The platform leverages Solidity smart contracts to facilitate pet adoption and user registration in a trustless environment. All adoption records are verifiable on the Ethereum blockchain, ensuring a transparent process that improves user confidence in pet adoptions.

4. CHAPTER 2: S/W AND H/W REQUIREMENTS

a. SOFTWARE REQUIREMENTS

i. **Solidity:** Smart contract programming language.

ii. **Truffle Framework:**For smart contract development and deployment.

iii. **MetaMask:**Browser extension for managing Ethereum accounts and signing transactions.

iv. **Ganache:** Local blockchain for testing the smart contract.

v. **Node.js and npm :** For backend development and package management

vi. **HTML/CSS/JavaScript:** For the frontend development.

5. CHAPTER 3: SYSTEM ARCHITECTURE

System Components:

1. **Smart Contracts (Solidity):** The core logic of the system is implemented as smart contracts, which manage the pet adoption process, including tracking available pets and the status of adoptions.

2. **Frontend (HTML, CSS, JavaScript):** The web interface is designed using HTML, CSS, and JavaScript to create a user-friendly experience for viewing and adopting pets.

3. **Ethereum Blockchain:** All adoption transactions are securely stored on the blockchain to ensure transparency and immutability.

4. **MetaMask:** MetaMask is used to interact with the smart contract, serving as a wallet and transaction signer for adopters.

6. CHAPTER 4: ADVANTAGES AND DISADVANTAGES

6.1 Advantages

- **Decentralization:** Eliminates the need for intermediaries, reducing the potential for data manipulation.
- **Transparency:** All adoption transactions are publicly verifiable on the blockchain, ensuring data integrity.
- **Security:** Adoption records are immutable, preventing unauthorized changes.
- **Efficiency:** Smart contracts automate the adoption process, reducing time and errors.

6.2 Disadvantages

- **Gas Fees:** Transactions on the Ethereum network incur gas fees, which may be a barrier for some users.
- **Scalability Issues:** The Ethereum network can experience congestion, leading to delays in adoption confirmations.
- **Technical Barriers:** Users need to understand blockchain wallets and transactions to interact with the system.

7. CHAPTER 5: CONCLUSION

The **Pet Adoption Platform** demonstrates how blockchain technology can enhance traditional pet adoption processes by providing a secure, transparent, and efficient solution. By leveraging Ethereum's decentralized infrastructure and smart contracts, the platform eliminates intermediaries and ensures data integrity throughout the adoption process.Although challenges such as gas fees and network scalability remain, the system offers a reliable and innovative approach to pet adoption.

8. CHAPTER 6: RESULT

I. Solidity Contracts

A. UserRegistration.sol

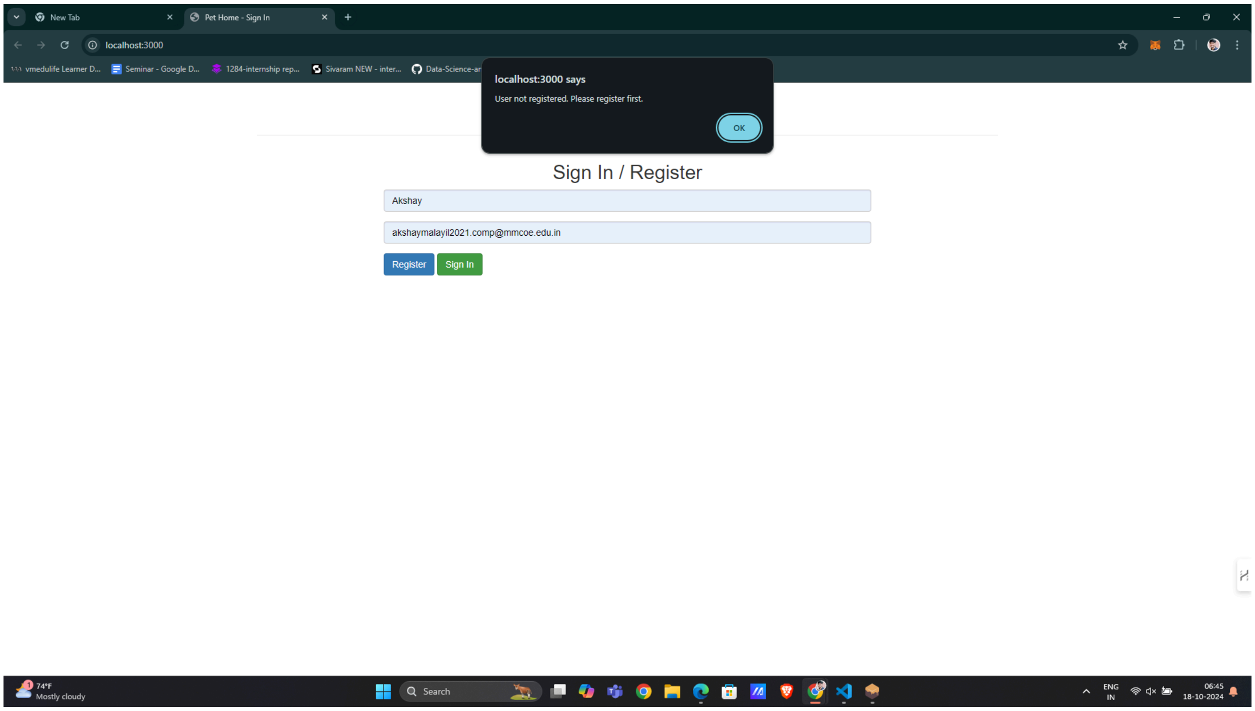
```
// SPDX-License-Identifier: MIT
pragma solidity ^0.5.16;

contract UserRegistration
{

     mapping(address => string) public userEmails; // Mapping to store user emails


    // Function to register a user
    function registerUser(string memory email) public
    {
       require(bytes(email).length>0,"Email cannot be empty");
       userEmails[msg.sender] = email;
    }



    // Function to retrieve the user's email
    function getEmail() public view returns (string memory)
    {
        return userEmails[msg.sender];
    }


}
```

B. Adoption.sol

```
// SPDX-License-Identifier: MIT
pragma solidity ^0.5.16;


contract Adoption
{
    address[16] public adopters;


    function adopt(uint petId) public returns (uint)
   {
        require(petId >= 0 && petId <= 15, "Invalid pet ID");
        adopters[petId] = msg.sender;
        return petId;
   }


    function getAdopters() public view returns (address[16]
memory) {

        return adopters;

    }


}
```

II. Screenshots

A. Registration and Login.



localhost:3000 says

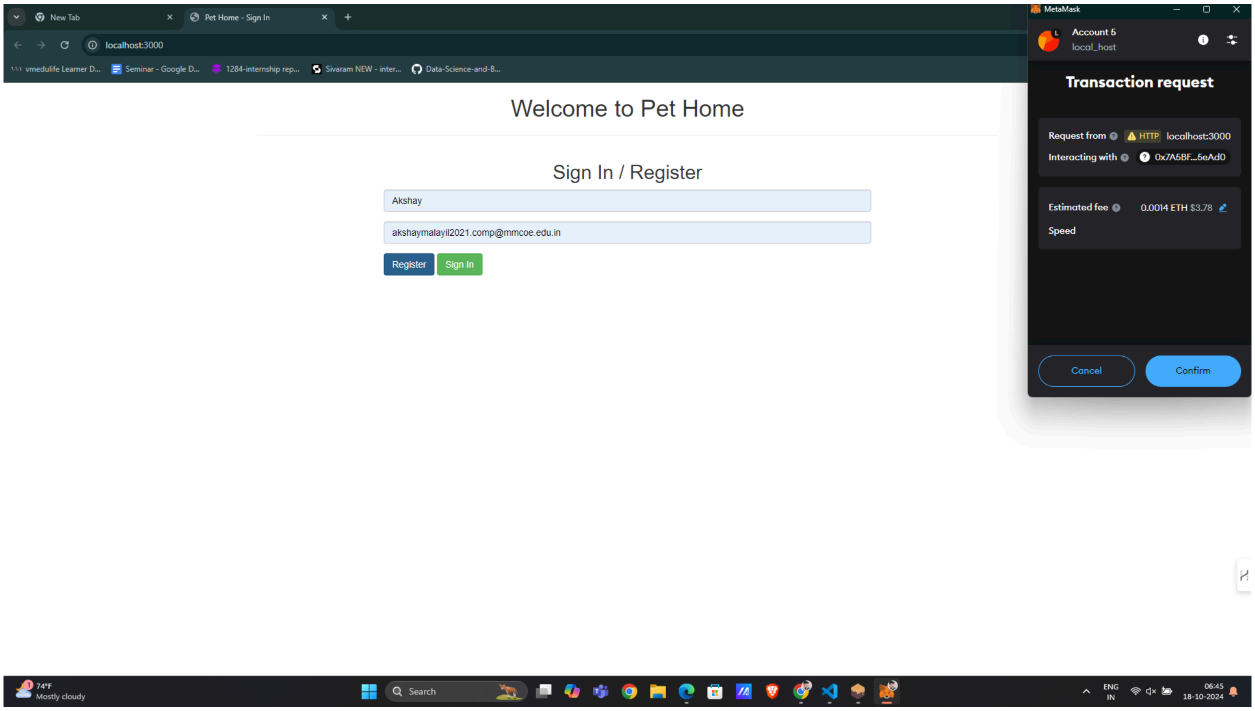
User not registered. Please register first.

Sign In / Register

Akshay

akshaymalayil2021.comp@mmcoe.edu.in

B. Transaction confirmation for account registration.



Welcome to Pet Home

Sign In / Register

Akshay

akshaymalayil2021.comp@mmcoe.edu.in

Account 5

local_host

Transaction request

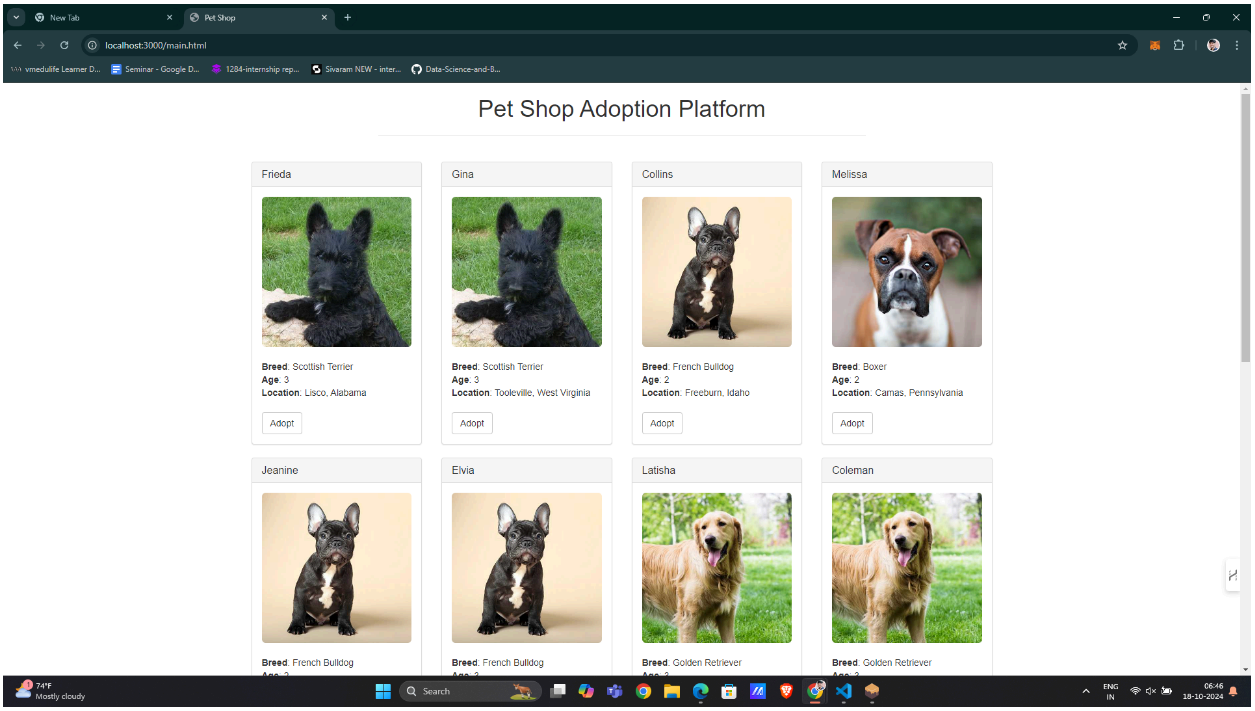
Request from HTTP localhost:3000

Interacting with 0x7A5BF...5eAd0

Estimated fee 0.0014 ETH $3.78

Speed

C. Successful Log in (Status “ Available for Adopt”).



Pet Shop Adoption Platform

Frieda
Breed: Scottish Terrier
Age: 3
Location: Lisco, Alabama
Adopt

Gina
Breed: Scottish Terrier
Age: 3
Location: Tooleville, West Virginia
Adopt

Collins
Breed: French Bulldog
Age: 2
Location: Freeburn, Idaho
Adopt

Melissa
Breed: Boxer
Age: 2
Location: Camas, Pennsylvania
Adopt

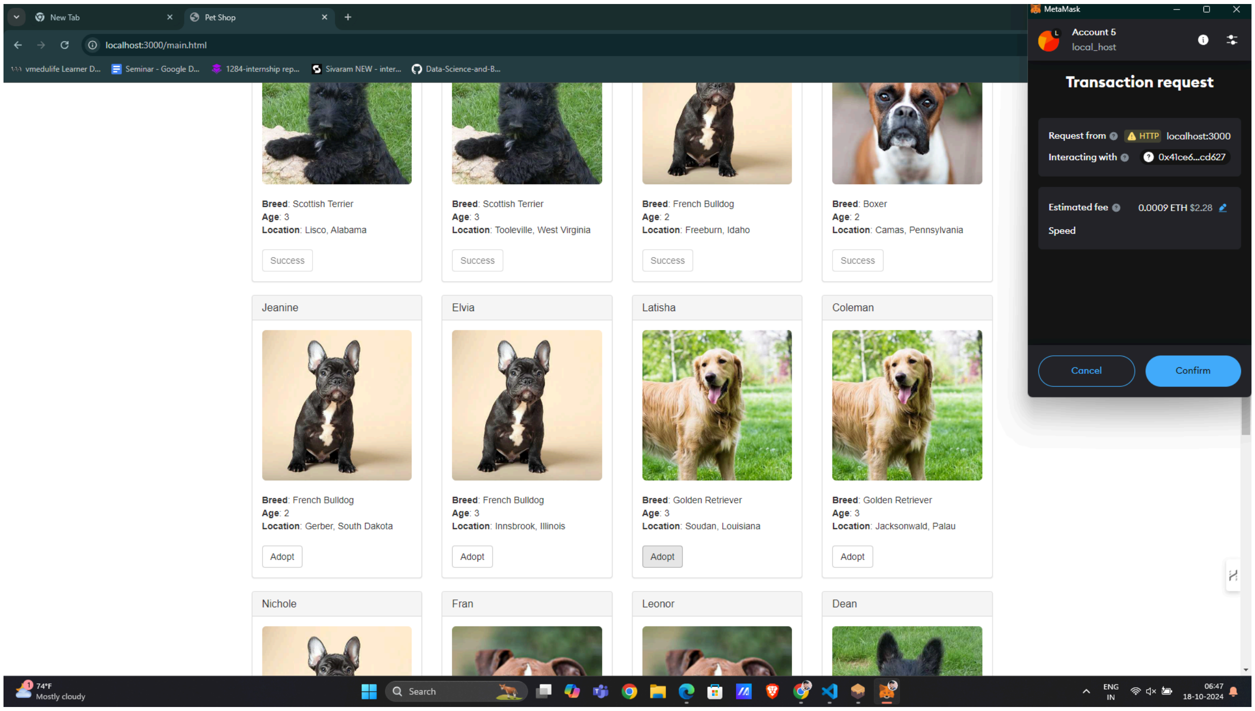
Jeanine
Breed: French Bulldog

Elvia
Breed: French Bulldog

Latisha
Breed: Golden Retriever

Coleman
Breed: Golden Retriever

D. Transaction request for Adoption (Status “Success”).



Breed: Scottish Terrier
Age: 3
Location: Lisco, Alabama
Success

Breed: Scottish Terrier
Age: 3
Location: Tooleville, West Virginia
Success

Breed: French Bulldog
Age: 2
Location: Freeburn, Idaho
Success

Breed: Boxer
Age: 2
Location: Camas, Pennsylvania
Success

Jeanine
Breed: French Bulldog
Age: 2
Location: Gerber, South Dakota
Adopt

Elvia
Breed: French Bulldog
Age: 3
Location: Innsbrook, Illinois
Adopt

Latisha
Breed: Golden Retriever
Age: 3
Location: Soudan, Louisiana
Adopt

Coleman
Breed: Golden Retriever
Age: 3
Location: Jacksonwald, Palau
Adopt

Nichole

Fran

Leonor

Dean

Account 5
local_host

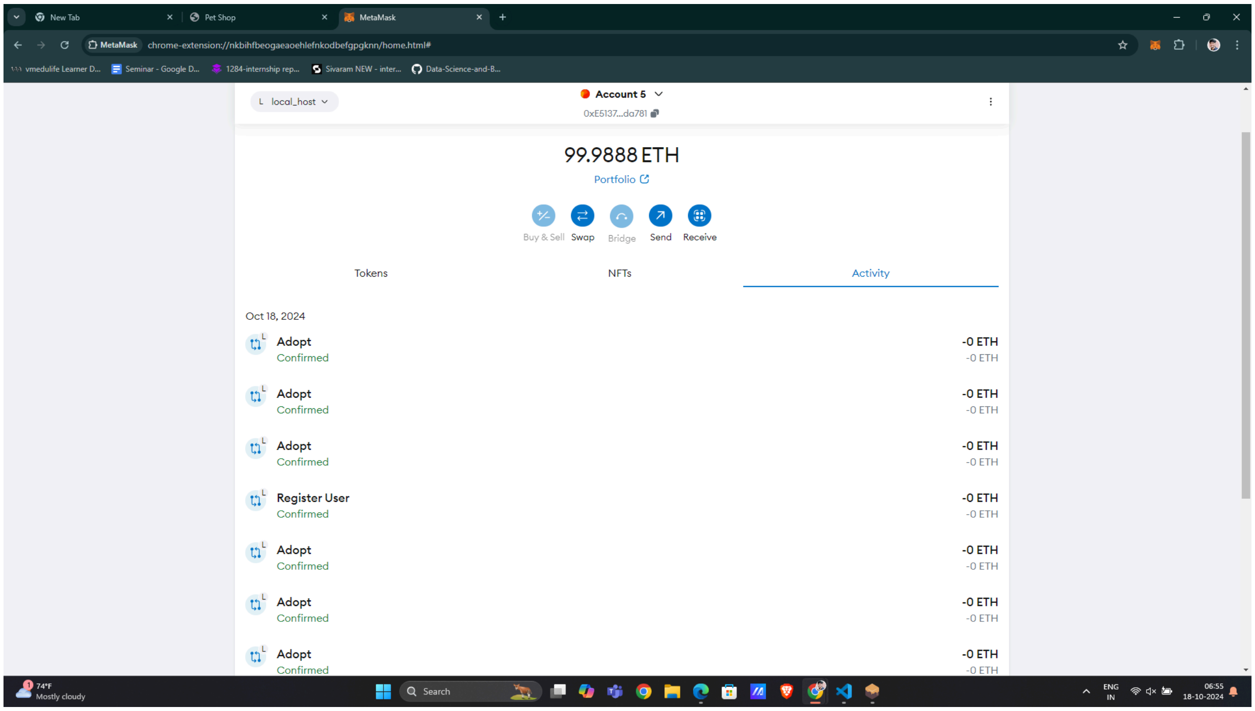
Transaction request

Request from ⚠ HTTP localhost:3000
Interacting with ? 0x41ce6...cd627

Estimated fee 0.0009 ETH $2.28
Speed

Cancel
Confirm

E. List of Transactions.



Account 5

0xE5137...da781

99.9888 ETH

Portfolio

Oct 18, 2024

Adopt
Confirmed -0 ETH
-0 ETH

Adopt
Confirmed -0 ETH
-0 ETH

Adopt
Confirmed -0 ETH
-0 ETH

Register User
Confirmed -0 ETH
-0 ETH

Adopt
Confirmed -0 ETH
-0 ETH

Adopt
Confirmed -0 ETH
-0 ETH

Adopt
Confirmed -0 ETH
-0 ETH

9. CHAPTER 7: REFERENCES

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