Project Report: Online Learning Marketplace

1. Introduction

Project Overview

The Online Learning Marketplace is a comprehensive platform designed to facilitate online learning and education. It brings together students, educators, content creators, and developers to create a dynamic ecosystem for publishing and purchasing courses. The project is built on principles of security, authenticity, transparency, and task automation through the use of smart contracts.

Project Objectives

The primary objectives of the Online Learning Marketplace project include:

- Creating an online marketplace for the publication and purchase of educational content.
- Implementing a custom ERC-20 standard token called EDBX for all transactions within the platform.
- Rewarding students with cryptocurrency to incentivize learning and engagement.
- Designing an elegant and user-friendly UI to provide a smooth and intuitive user experience.
- Ensuring the security, authenticity, transparency, and automation of tasks through the use of smart contracts.

Project Scope

The project's scope encompasses the development of a full-fledged online learning platform with a focus on the following key features:

2. Features

Online Marketplace

- Description: The platform serves as a marketplace where users can publish and purchase courses.
- Purpose: Enables educators and content creators to monetize their content while providing learners with access to a wide range of educational resources.

Custom Token (EDBX)

- Description: The project introduces a custom ERC-20 standard token, EDBX, for all transactions on the platform.
- Purpose: EDBX facilitates secure and efficient transactions within the ecosystem, ensuring transparency and trust.

Student Rewards

- Description: Students are rewarded with cryptocurrency for their participation and engagement.

- Purpose: Encourages active learning and engagement by providing tangible incentives in the form of cryptocurrency.

Elegant UI

- Description: The platform features an elegant and user-friendly user interface.
- Purpose: Enhances the user experience, making it easy for users to navigate and access educational content.

Smart Contracts

- Description: Smart contracts are utilized to implement security, authenticity, transparency, and automation of tasks within the platform.
- Purpose: Ensures the integrity of transactions and data while automating key processes.

3. Technology Stack

The project leverages a robust technology stack to deliver its features and functionality:

- Node.js
- React
- Bootstrap
- Express
- MongoDB
- Solidity
- Web3.js
- Truffle
- Ganache
- Metamask

4. How to Run

To run the Online Learning Marketplace project successfully, follow these steps:

Deploy Contracts and Import Accounts

1. Install the Metamask Chrome extension, Truffle CLI, and Ganache GUI.
2. Open Ganache and create a new workspace.
3. Launch Truffle CLI, navigate to the `{download_path}/client` directory, and execute "truffle migrate --reset" to deploy contracts. Alternatively, use "truffle compile" if the Migrations folder already exists in the repository.
4. Confirm contract deployment on host: 127.0.0.1, port: 8545 (default) or check with "truffle networks" in the CLI.
5. Open Chrome, enable the Metamask extension, add a new RPC network, and import 10 accounts using the 48-phrase mnemonic code from Ganache.

Run MongoDB & Express Server

1. Open a new terminal, execute "mongod" to start the MongoDB daemon.
2. In another terminal, navigate to `{download_path}/server`, and run "npm start." You should see "Server up and running on port: {port}" and "Mongoose Connected Woohoo" in the terminal.

Run React App

1. Open a new terminal, navigate to `{download_path}/client`, and execute "npm start."
2. Access the homepage.

7. Conclusion

Project Status

As of the latest update, the Online Learning Marketplace project is in a functional state, with the core features implemented. The platform is live and accessible for users to publish and purchase courses.

Future Developments

The project has the potential for further enhancements, including:

- Expansion of course offerings and categories.
- Implementation of advanced user analytics.
- Integration with external payment gateways.
- Enhanced security features.

The team is committed to continuous improvement and will consider user feedback and emerging technologies for future developments.

GITHUB REPO LINK: https://github.com/Nilavo-2001/blockchain-education