FAKE PRODUCT IDENTIFICATION SYSTEM

CENG 3550, DECENTRALIZED SYSTEMS AND APPLICATIONS

Okan İhsan Bağrıaçık

okanihsanbagriacik@posta.mu.edu.tr

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Abstract

Internet has a great place in our lives. Even our daily shopping can be done online. For these reasons, e-commerce sites have become widespread. Upon the spread of these areas, counterfeit products began to be sold on some sites to deceive people. A project has been made to prevent people from buying fake products on such scam sites. In the project, it is aimed that the information of the products can be tracked by keeping them on a blockchain. In this way, the originality of the products will be checked and the sites that sell fake products by deceiving people will decrease and disappear.

1 Introduction

Online shopping has become widespread all over the world. These e-commerce sites, which peaked with the Covid-19 pandemic, are in great demand. From now on, these shopping methods will have a great place in our lives. People can buy lots of things on the internet now.This technology isn't use only for clothes or effects.People can buy anything they want from a E-sommerce website. In China people are using blockchain for supplying food[1]. E-commerce sites that sell fake product for deceiving people increased after online shopping is became so popular. These sites, which reach people especially through social media, sell products that are very close to original ones. People who do not understand the difference between these products become victims of these sites. In order to prevent this, a project idea was proposed to solve this problem. The production time, place and manufacturer information of the products produced using blockchain technology are stored. Every product will have a QR code to see the information about it.

2 Fundamentals

In my project I used Solidity programing language, write smart contracts and used remix.etherum to as IDE. My program is creating products and keeps their information on a blockchain. Every customer can information about products and can check its originality.

2.1 Blockchain

In the most general terms, blockchain is the distribution of central trust in the internet environment by allowing a central server or a trusted authority to be removed. Blockchain technology is

commonly known as the technology underlying virtual currencies such as Bitcoin and Ethereum. The thing people don't know much about is we can write programs and projects on blockchain [2]. People thinks we can only build some tokens and coins on blockchain but actually every coin or a token is basically a project. For example Ontology blockchain is a high performance, public blockchain. People can build apps on it [3] but people only know the ONT coin.

2.2 Solidity

Solidity is an object-oriented programming language for writing smart contracts. It is used for implementing smart contracts on various blockchain platforms, most notably, Ethereum [4]. It was developed by Christian Reitwiessner, Alex Beregszaszi, and several former Ethereum core contributors to enable writing smart contracts on blockchain platforms such as Ethereum. The programs compiled by the Solidity are intended to be run on Ethereum Virtual Machine. Most of the people are using solidity and Etherum for writing smart contracts and application but gas price of it is very expensive. Because of that recently there several blockchain project with less prices for transactions.

2.3 Smart Contracts

Smart contracts are computer programs that can carry out transactions and agreements between anonymous parties in a reliable and consistent manner, and no retroactive change is possible[5].

- First time, smart contracts mentioned it in 1994, before Bitcoin.

- Does not need a central authority, legal system or external enforcement mechanism.

- It allows secure deals and contracts.

3 Implementation

There are 2 different smart contracts in my code. These are a create code to create the product and a get code to check the generated information. In my Create code, 8 different information is requested in total. These ; product code, brand, model,status,description,Manufacturer name,Manufacturer Location,Manufacturer Time Stamp. Thanks to this information, each product will have its own production information. Then we can check the information on the blockchain with the Get code. At the same time, each product will have a QR code. Thanks to these QR codes, people will also be able to see the information of the products by QR code readers.

4 CONCLUSION and RESULT

There are many e-commerce sites on the Internet to deceive people. These sites deceive and defraud people by showing fake products as original. Thanks to our project, we want to eliminate this situation. We have designed a system that we can follow every step of the way from production. In this way, when you shop online, you will be able to verify the originality of the product with this program. I run the program and created necessary parameters and showed the outputs that can be seen by customers.

References

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