iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** IX **Month of publication:** September 2022

DOI: https://doi.org/10.22214/ijraset.2022.46730

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue IX Sep 2022- Available at www.ijraset.com

Crowd Funding using Smart Contract in Blockchain

B. Praneetha
Computer Science and System Engineering, Andhra University

Abstract: ***Crowdfunding is that the practice by which a personal company can raise funds for a project, where an outsized number of people contribute touch of money, typically via the online. In today's world whenever an entrepreneur wants to implement his idea into the world, he needs some money to bring his idea to life. Earlier when crowdfunding platform weren't available the entrepreneur were ready to target only a limited number of people for funding of the project also it absolutely was very difficult for them to attain dead set the those who can fund the project. Now a day's sort of crowdfunding platform like Kickstarter exists which allows the entrepreneur to post their ideas on the platform where backers can see the project and might contribute some amount of money thereto project. These crowdfunding platforms made it easier for the entrepreneur to reach resolute an outsized crowd worldwide who can support their project. within the prevailing crowdfunding system, despite having many advantages there are some problem related to these systems like charging an infinite amount of money for maintenance, transparency within the system, and trust. Our application can remove these problems related to the current crowdfunding system by providing a more transparent system where every transaction could also be stored on the blockchain using the Smart Contracts.***

Keywords: Crowdfunding, Blockchain, Smart Contracts, Transparency.

I. INTRODUCTION

The blockchain is an immutable ledger that keeps records of every transaction. It uses peer to peer network in which all the system are acting as a client as well as server and all the records are stored on every node. All the transactions are stored in the blockchain with the help of a Smart Contract. Crowdfunding helps in funding a project idea where investors can invest money on a project. The problem with current crowdfunding systems is that they are charging a huge sum of money as a fee, the transaction of money is not transparent, and there are also cases of scam. We can avoid these problems and develop a reliable application by incorporating blockchain into our application where every transaction is being stored on the blockchain. All the operations on the blockchain are controlled by sensible Smart Contract which helps in making this application more transparent. In this crowdfunding platform we have security attack like Integer overflow, underflow and re-entrancy attacks.

II. LITERATURE SURVEY

Crowdfunding and blockchain have been a hot topic within the recent years and few of the research work stated below discusses the importance of crowdfunding and blockchain as upcoming financial technologies.

The Author first presented a review that describes the visionary of the business in an exceedingly hypothetical model. Basically, crowdfunding present two types benefit sharing and pre-requesting.

In the principal structure of business, it welcomes the funders to pre-request the item and gather all amount for the creation dispatching.

In the second type of crowdfunding the fundraiser accustomed request the people to present some funds and reciprocally to longterm benefits on the benefit sharing Felix Heieck, Tatiana Ermakova, Benjamin Fabian, Stefan Lessmann said that funds are important to bring new idea into exisitance.

Equity crowdfunding (also known as crowd-investing or investment crowdfunding) could be a method of raising capital employed by start-ups and early-stage companies. Essentially, equity crowdfunding offers the company's securities to many potential investors in exchange for financing. Each investor is entitled to a stake within the company proportional to their investment.

A. Donation Based crowdfunding

Every individual will donate small amount as to meet the target set for a charitable project but there is no material return or financial return.

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B. Smart Contracts

Smart contracts are simple programs stored on a blockchain that run when predetermined conditions are met. hey typically familiar with automate the execution of an agreement so as that everybody participants are visiting be immediately certain of the results, no intermediary's involvement or time loss.

III. METHODOLOGY

In this crowdfunding platform by using the smart contract all the transactions are done as follows:

1) *Step1:* The manager will initially deploy the contract by setting up the target amount, time, and the contribution limit.
2) *Step2:* The contributors or funders will donate the funds through the contract.
3) *Step3:* The contributors can withdraw their amount from contract and extremely contributor can check the balance of the contract.
4) *Step4:* The manager request amount for the start-ups and then contributors should accept the stat-up request. If the request is accepted by contributors, then the amount is assigned to start-ups.
5) *Step5:* Once the balance is withdrawal from a contract the amount of the contributor is about to zero.

a) *Refund ():* The Refund function will return all amount to the contributors if the target and time limit is exceeded.
b) *Deposit ():* This function is employed to deposit the amount into the contract and then add to the balance.
c) *Withdrawal ():* In the withdrawal function the contributors can withdraw amount completely for partially from their account.
d) *Make payment ():* Make payment function can accessed only by the manager and that they can send the amount to the individuals based on the request of the start-up's.
e) *Vote Request ():* The amount to start-up's will be assigned by the manager if the minimum votes are given by the contributors in the contract.

Attacks on the crowdfunding:

The attacks that we can apply using this contract are Re-entrancy attack and Integer overflow and underflow.

Reentrancy Attack:

- Initially we must deploy the crowdfunding contract.
- Deposit ether from each account
- Then deploy the attack contract with the address of crowdfunding contract
- call attack by sending ethers through another new account.
- Now we will get ethers back from the contract.

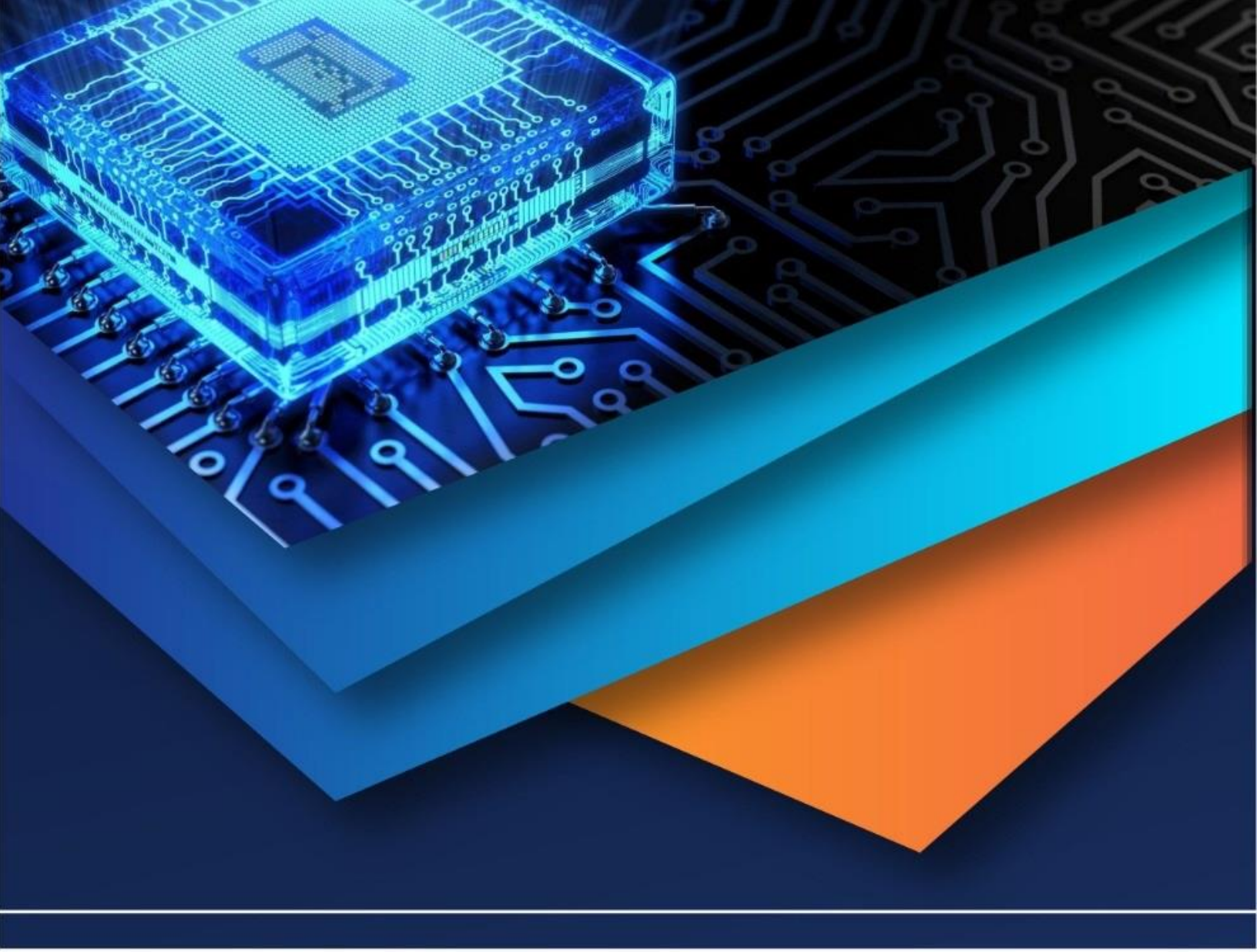
The fallback is calls call the withdrawal function within it whenever there is plain ether.

IV. CONCLUSION

We have to perform the transact the ethers to the funders fast as compared the traditional process. Also get result as how different nodes connected as peers in private blockchain network and how transactions takes place between the nodes. Here we can observe how the owner(manager) of the contract send the amount to the requested organizations and able to check the funder account balance.

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