A

Project Report on

FUNDRAISING AND CHARITY PLATFORM WITH MORE ACCURACY AND TRANSPARENCY

Submitted to the partial fulfillment of the
requirement for the award of the degree of

BACHELOR OF TECHNOLOGY
IN
COMPUTER SCIENCE & ENGINEERING

Submitted by:

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BONAFIDE CERTIFICATE

To confirm that the project report titled "FUNDRASISING AND CHARITY PLATFORM WITH MORE ACCURACY AND TRANSPARENCY ", which is submitted by " Govind Sawarn [RA1911003030290] " , This document serves as a record of the candidate's own work, completed under my supervision, in partial fulfillment of the requirements for the award of the B.Tech (CSE) degree from SRM Institute of Science and Technology, Delhi-NCR Campus, Modinagar, Ghaziabad.

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Govind Sawarn (RA1911003030290) Govind Sawarn

DECLARATION

I, Govind Sawarn (RA1911003030290), I hereby affirm that the project report's being presented in the project report "Fundraising and charity platform with more Accuracy and Transparency " The following document, covering the period from January '12 to May '12, has been prepared and submitted by me as a requirement for the degree of "Bachelor of Technology in Computer Science and Engineering." This work has not been previously submitted to any other university or institute for the purpose of obtaining any degree or diploma.

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ABSTRACT

A fundraising charity platform is a digital platform that provides a means for individuals and organizations to raise funds for charitable causes or social initiatives. The platform typically allows donors to browse through various fundraising campaigns and select the ones they wish to support. Donors can securely donate funds online, and the platform provides tools to track the impact of their contributions.

Campaign creators can manage their campaigns through the platform and communicate with donors. Additionally, the platform may provide tools to promote campaigns through social media and other channels.

The ultimate goal of a fundraising charity platform is to facilitate fundraising and support for a range of charitable causes and social initiatives. These may include disaster relief, medical research, education, environmental conservation, and many other causes. By providing a digital platform for fundraising, these platforms aim to make charitable giving more accessible, efficient, and transparent for everyone involved .

KEYWORDS:

fundraising, charity, platform, digital, donations, donors, campaigns, communication, social media, disaster relief, medical research, education, environmental conservation, accessible, efficient, transparent.

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ABBREVIATIONS

IHME	Institute of Health Metrics and Evaluation
SVM	Support Vector Machin
RFA	Random Forest Algorithm
LRA	Linear Regression Algorithm
KNN	k-nearest neighbors
DD	Dependency Diagram
PC	Problem Conceptualization
ML	Machine Learning
ROS	Realization of Solution
MI	Method Identification

LIST OF VARIABLES

$B0$	Intercept
$B1$	Slope
m_x	Mean of Number of Days
m_y	Mean of Total Number of Confirmed Cases
f_y	Predicted Confirmed Cases
f_x	Number of Days
$corr$	Correlation

CHAPTER 1

INTRODUCTION

1.1 GENERAL

A fundraising and charity platform serves as a transformative digital solution that revolutionizes the way individuals and organizations raise funds for charitable causes and social initiatives. With an emphasis on accuracy and transparency, these platforms have emerged as powerful tools that bridge the gap between donors and beneficiaries, making the process of giving more efficient and accountable.

In the traditional fundraising landscape, transparency and accuracy were often lacking, leaving donors uncertain about where their contributions were being utilized and whether they were making a genuine impact. However, fundraising and charity platforms have addressed these concerns by incorporating robust features that ensure a higher level of accuracy and transparency.

One key aspect is the ability for donors to browse through a wide range of fundraising campaigns on the platform. Each campaign provides detailed information about the cause, the organization behind it, and how the funds will be utilized. This empowers donors to make well-informed decisions based on their personal values and interests.

Furthermore, these platforms offer secure and streamlined online donation mechanisms. Donors can contribute funds using various payment options, and the platforms utilize advanced encryption technologies to safeguard sensitive information. This ensures that donations reach the intended recipients securely and efficiently. To enhance transparency, fundraising and charity platforms provide real-time tracking tools that enable donors to monitor the impact of their contributions. They can track how their funds are being utilized, view progress updates, and even receive reports on the outcomes achieved. This level of transparency fosters trust and confidence among donors, as they can witness the tangible difference their contributions are making.

Additionally, these platforms facilitate direct communication between campaign creators and donors. This By offering comprehensive campaign information, secure donation mechanisms, real-time tracking, and direct communication channels, these platforms empower donors to make informed decisions, see the impact of their contributions, and engage meaningfully with the causes they support. Through their commitment to accuracy and transparency, fundraising and charity platforms are shaping a new era of philanthropy that is more accountable, efficient, and impactful.

such as banks or payment processors, which can reduce transaction fees and increase the speed of transactions. This makes crowdfunding more accessible to people in developing countries or areas where traditional banking systems are not readily available.

1.2 PROBLEM DESCRIPTION

While crowdfunding has become a popular and successful way to raise fund for various projects and ventures, it is not without its challenges.

Here are some of the problems that can arise with crowdfunding:

Lack of Funding: Crowdfunding relies on a large number of people contributing small amounts of money to reach a funding goal.

Fraud: There have been instances where fraudulent campaigns have been set up to deceive people into contributing money to a fake project or cause.

Intellectual Property Theft: Crowdfunding projects often involve innovative ideas and products that are vulnerable to intellectual property theft.

Failure to Deliver: Sometimes, a crowdfunding project may raise enough funds but fail to deliver on its promises.

Legal Issues: Crowdfunding campaigns may run into legal issues, such as violating securities laws or failing to comply with tax regulations.

Limited Access: Crowdfunding may not be accessible to everyone, particularly those without access to the internet or those who are not comfortable with online transactions.

It is important for crowdfunding platforms to address these problems to ensure that the process remains trustworthy and reliable for all parties involved.

1.3 OBJECTIVE

The objective of crowdfunding is to raise funds for a project or venture through small contributions from a large number of people, typically via the Internet. Crowdfunding allows entrepreneurs, artists, and other individuals or organizations to bypass traditional funding sources, such as banks or venture capitalists, and instead raise money directly from the public.

CHAPTER 2

LITERATURE SURVEY

[1] In the IEEE 4th International Conference on Computing, Power, and Communication Technologies (GUCON) held in 2021, Darshan M, S.R Raswanth, Sundeep V V S Akella, and Priyanka Kumar presented a paper titled "A Secured Distributed Ledger Based Fundraising Framework Using Smart Contracts."

The paper outlines a blockchain-based charity framework for corporate social responsibility, emphasizing the importance of empowering stakeholders with the technology.

[2] In their paper titled "Developing a Reliable Service System of Charity Donation During the Covid-19 Outbreak," Hanyang Wu and Xianchen Zhu discussed the topic in IEEE Access, Volume 8, in 2020.

This paper proposes a blockchain-based donation service system to address the low transparency and trust crisis in charity services in China. It discusses key technologies, operational mechanisms, and functional designs to meet the needs of various users..

[3] Jiafeng Li, Fuyang Qu, Xin Tu, Tingfei Fu, Jiayan Guo, Jianming Zhu, "Public Philanthropy Logistics Platform Based on Blockchain Technology for Social Welfare Maximization", The 8th edition of the International Conference on Logistics, Informatics, and Service Sciences (LISS) took place in 2018.

The paper proposes a model for evaluating philanthropic material donations using blockchain technology. The study conducted a four-month empirical research and found that using the blockchain platform can improve user trust, system cleanliness, and enhance philanthropic materials' quality. The paper suggests that this platform can maximize social welfare through charitable donations.

[4] Hadi Saleh, Sergey Avdoshin, Azamat Dzhonov, "Platform for Tracking Donations of Charitable Foundations Based on Blockchain Technology", Actual Problems of Systems and Software Engineering (APSSE), 2019

This paper discusses how blockchain technology can provide transparency in donation and funding transactions. The paper presents a platform for tracking donations based on blockchain technology, which allows for transparent accounting of operations involving donors, charitable foundations, and recipients. The platform also provides a transparent donation route for public users and donors to track and monitor the distribution of charity funds.

[5] Xin Fan, "Charity Supervision Management System Based on Blockchain", 2nd International Conference on Computer Science and Management Technology (ICCSMT), 2022

Xin Fan utilizes the blockchain's properties to develop a secure and robust charity information management system. The system incorporates a ring signature mechanism to protect supervisors' privacy and a charity contract system based on the Ethereum experimental environment. The contract system ensures the charity project's autonomy, reliability, trustworthiness, and credibility, potentially replacing traditional public charity platforms.

[6] Iqra Khalil, Omer Aziz, Numan Asif, "Blockchain and Its Implementation for Charitable Organizations", International Conference on Innovative Computing (ICIC), 2022

This paper proposes using proof of authority as a consensus protocol for the Ethereum blockchain platform. It provides a detailed tutorial of the blockchain mechanism and compares the main blockchain platforms, including bitcoin, Ethereum, and Hyperledger. The paper also examines how blockchain technology has been utilized in non-profit and non-financial organizations, and proposes an economic model and framework that requires less computational power.

[7] Ahmed s. Musleh, Gang Yao, SM. Muyeen, "Blockchain Applications in Smart Grid–Review and Frameworks", IEEE Access (Volume: 7), 2019

This paper explores the potential for using blockchain technology in the smart grid, a recent development that has attracted attention in various applications. It examines the benefits, challenges, and approaches to implementing blockchain technology in the smart grid and outlines key applications for the technology. The paper also demonstrates how the blockchain can function as the smart grid's cyber-physical layer.

[8] Gubaev Renat, Anton Peresichansky, Alexandr Belenov, Artem Barger, "Karma – blockchain-based charity foundation platform", IEEE International Conference on Blockchain and Cryptocurrency (ICBC), 2021

The Karma-Token project is a blockchain-based charity foundation platform that aims to form a reliable network for collecting donation funds. Well-known and prestigious organizations will comprise the blockchain network to ensure transparency and visibility of all operations, utilizing immutability, provenance, and non-repudiation properties. The platform aims to prevent fraudulent behavior by exposing the activities of dishonest organizations.

[9] Emre Ertürk, Murat Doğan, Ümit Kadiroğlu, Enis Karaarslan, "NFT based Fundraising System for Preserving Cultural Heritage: Heirloom", 6th International Conference on Computer Science and Engineering (UBMK), 2021

This innovative system aims to enable foundations to receive direct funding for cultural asset preservation through the use of NFT technology. The assets are transformed into unique digital items, and metadata is saved in the distributed file system IPFS. Smart contracts are utilized in an autonomous working system, and a proof of concept has been implemented successfully. A case study on preserving old olive trees in Milas has also begun, with potential outcomes including increased funding accessibility for cultural heritage preservation and heightened awareness of the importance of preservation efforts.

[10] Yaqi Zhou, "Understanding Users' Reaction to Blockchain Technology on the Online Fundraising Platform: —Evidence from Scenario Simulation Experiments", Conference on Computer Information Science and Artificial Intelligence (CICSAA) on a global scale. 2022

In a research study conducted by Yaqi Zhou, a questionnaire survey was carried out to examine the influence of design theory and innovation diffusion theory on users' inclination to adopt blockchain technology on online fundraising platforms. The findings of the study revealed that the integration of design elements related to distributed ledger and peer-to-peer networks had a substantial impact on users' willingness to utilize the platform. Additionally, users' motivation to embrace the platform was primarily driven by their perception of its technical reliability.

Table 2.1: Tabluar Summary of Litterature Survey

S.No.	Topic	Introduction	Advantages	Disadvantages
1	A secure fundraising framework based on a distributed ledger system.	This paper presents a blockchain-powered charity framework that leverages smart contracts for businesses, enabling them to improve their Corporate Social Responsibility (CSR) practices.	Achieving enhanced transparency and security, while empowering stakeholders.	no specific disadvantages mentioned.
2	Developing a dependable charity donation service system amidst the Covid-19 pandemic.	This paper explores essential technologies for a donation service system catering to the requirements of help-seeking, receiving, and management users.	Enhancing efficiency, promoting transparency, and minimizing fraud and corruption.	No disadvantages mentioned.
3	A blockchain-based logistics platform for public philanthropy.	This paper proposes a model for assessing philanthropic material donations, utilizing blockchain technology to enhance user trust and improve material quality for social welfare.	The model aims to maximize social welfare by enhancing trust, cleanliness coefficient, and material quality.	No any disadvantages mentioned
4	A blockchain-based platform for tracking donations in charitable foundations.	This paper analyzes a blockchain-based donation tracking platform, which ensures transparent accounting of operations for donors, charitable foundations, and recipients.	Increased transparency, improved accountability and trustworthiness.	No specific disadvantages mentioned.

Table 2.2: Tabluar Summary of Litterature Survey

S.No.	Topic	Introduction	Advantages	Disadvantages
5	A blockchain-based charity supervision and management system.	The paper proposes a secure abd robust charity information management system based on Blockchain technology, which protects supervisor privacy and ensures autonomy and reliability of charity projects.	Ensuring higher security, autonomy, reliability, trustworthiness, and credibility for charity projects.	Not any disadvantages mentioned.
6	Utilizing blockchain technology to enhance transparency, accountability, and efficiency in charitable organizations.	This paper presents a comprehensive approach for charitable organizations to leverage proof of authority consensus protocol in Ethereum blockchain, including a blockchain tutorial, platform comparison, and economic modeling.	Achieving enhanced security, efficiency, and cost-effectiveness simultaneously	No other disadvantages mentioned.
7	blockchain technology in smart grid systems.	The paper analyzes the feasibility of using blockchain technology in the smart grid, discussing the potential benefits, technical challenges, and possible applications.	Enhancing security, privacy, efficiency, and cost-effectiveness while maintaining originality.	No specific disadvantages mentioned

Table 2.3: Tabluar Summary of Litterature Survey

S.No.	Topic	Introduction	Advantages	Disadvantages
8	a blockchain-based charity foundation platform called "Karma."	The Karma-Token project is a blockchain-based charity foundation platform that aims to establish a trustworthy network and uncover fraudulent organizations.	The Karma-Token project proposes a blockchain-based charity foundation platform that enhances transparency, trustworthiness, and prevents fraudulent behavior.	no specific disadvantages mentioned.
9	NFT-Based Fundraising System for Cultural Heritage Preservation: Heirloom.	The paper proposes a fundraising system for cultural heritage preservation that uses NFT technology and smart contracts for an autonomous working system.	Improving efficiency, autonomy, and cultural heritage preservation awareness through NFT-based fundrais ing system.	Not any other Specific disadvantages mentioned.
10	Understanding User's Reaction to Blockchain Technology on the Online Fundraising Platform.	This paper uses design theory and innovation diffusion theory to survey users' willingness to adopt blockchain technology on online fundraising platforms through scenario-based questionnaires.	mproved technical credibility leads to an increased willingness to use blockchain-based platforms.	No specic disadvantages mentioned

CHAPTER 3

SYSTEM ANALYSIS

3.1 Existing System

Existing crowdfunding systems provide a platform for individuals and organizations to raise funds for their projects or initiatives from a large number of people. These platforms typically take a percentage of the funds raised as a fee and offer various services and tools to help campaign creators promote their projects, communicate with backers, and manage their funding campaigns.

3.2Proposed System

A proposed system for crowdfunding could include several improvements to enhance the overall experience for both campaign creators and backers.

Decentralized platform: A proposed system could use blockchain technology to create a decentralized platform for crowdfunding.

Smart contracts: Smart contracts could be utilized to automate certain processes in the crowdfunding campaign, such as releasing funds to the campaign creator once the funding goal is reached, or refunding backers if the campaign does not reach its funding goal.

Increased security: A proposed system could implement stronger security measure to protect against fraudulent campaigns, identity theft, and other forms of cybercrime.

Lower fees: A proposed system could reduce or eliminate the fees charged by crowdfunding platforms to campaign creators, allowing more of the funds raised to go directly to the project or initiative.

Increased flexibility: A proposed system could provide more flexibility in the types of projects or initiatives that can be funded, allowing for a wider range of ideas and ventures to be supported.

3.3System Architecture

The system architecture of a crowdfunding platform typically consists of a front-end user interface, a back-end database, a payment gateway for transactions, and security components to protect users from fraud and cybercrime. Additionally, an analytics engine may be used to collect and analyze data related to the platform's performance.

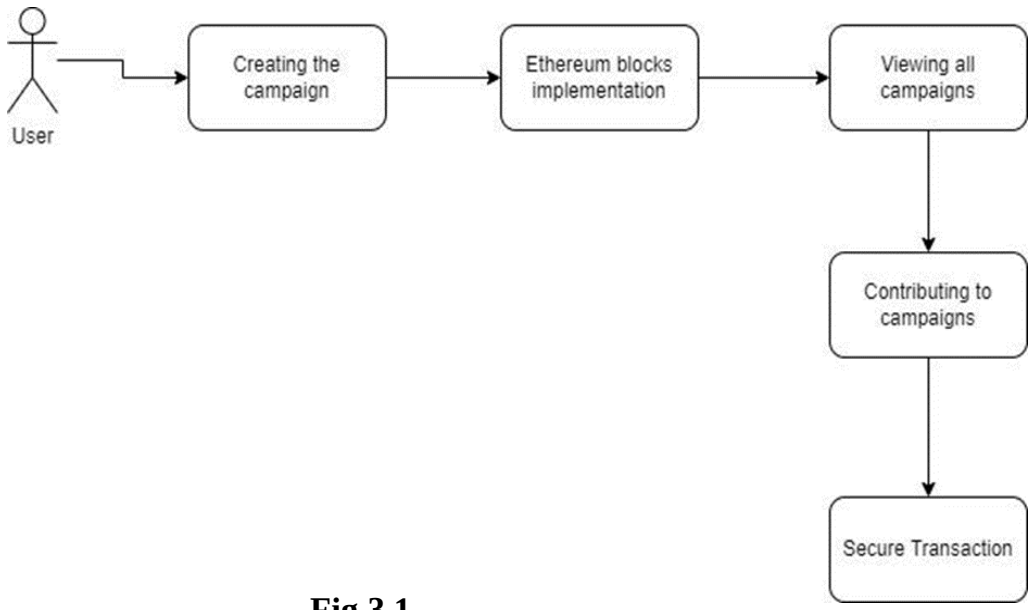


Fig 3.1

System Architecture Map of the proposed system.

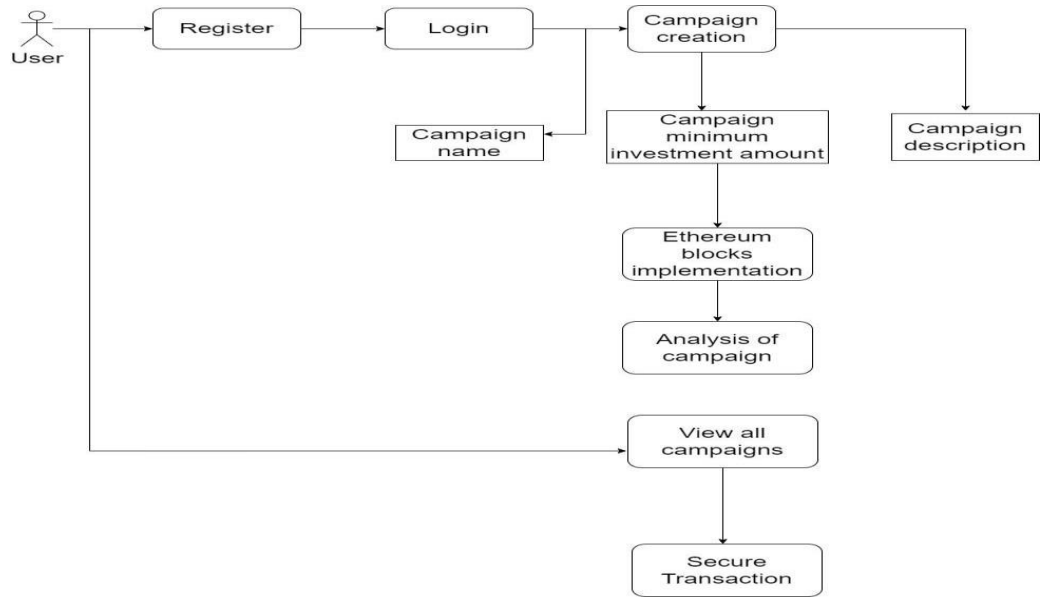


Figure 3.2 Architecture Graphic Illustration of the proposed system.

CHAPTER 4

METHODOLOGY

4.1 MODULES

MODULE 1: DATA COLLECTION AND PREPROCESSING

Data collection is a critical aspect of any fundraising platform using blockchain technology. In a fundraising platform using Ethereum, data collection can be done through various modules, including user registration, campaign creation, and donation tracking.

User registration modules can collect information such as user names, email addresses, and Ethereum wallet addresses. This information can be stored on the blockchain, ensuring that it is secure and immutable.

Campaign creation modules can collect information such as funding goals, deadlines, and campaign descriptions. The smart contract can generate a unique Ethereum address for each campaign, which can be used to collect donations.

Donation tracking modules can collect information such as the amount of donations, the donor's Ethereum wallet address, and the time of the donation. This information can be stored on the blockchain, allowing for transparent and auditable donation tracking. Data collection ensures that all relevant data is collected securely and transparently, providing a high level of trust and accountability for all stakeholders involved.

Data preprocessing is an important step in any fundraising platform using blockchain technology. In a fundraising platform using Ethereum, data preprocessing can involve cleaning and preparing the collected data for analysis or use in the smart contract.

For user registration modules, data preprocessing can involve verifying the accuracy and authenticity of user information to prevent fraudulent activities. For campaign creation modules, data preprocessing can involve validating funding goals, deadlines, and other details to ensure they are reasonable and achievable.

Donation tracking modules may require data preprocessing to ensure that the data is accurate and free from errors. This can involve checking for duplicate transactions, invalid wallet addresses, and other anomalies.

Overall, data preprocessing in a fundraising platform using blockchain with Ethereum ensures that the data collected is reliable, accurate, and suitable for use in the smart contract. This helps to prevent errors, fraud, and other issues that could negatively impact the platform's users and its success.

MODULE 2: MODEL TRAINING

Data model training is a critical aspect of a fundraising platform using blockchain in Ethereum. The data collected from various modules such as user registration, campaign, creation and donation tracking can be used to build and train machine-learning models that can provide insights, make predictions or prevent fraudulent activities.

For instance, data model training can be used to build fraud detection models that can analyzes donation transactions to identify patterns of fraudulent activities. The model can be trained on historical data to identify the characteristics of fraudulent activities and identify patterns that can be used to prevent them.

Moreover, data model training can also be used to predict campaign performance based on historical data. By training the model on data collected from previous campaigns, it can identify factors that influence campaign success, such as the amount of funding raised or the duration of the campaign. It can help to prevent fraud, enhance campaign performance and provide valuable insights to the platform's users.

MODULE 3: DATA PREPROCESSING

Data preprocessing is a crucial step in building a fundraising platform using blockchain in Ethereum. It involves preparing and cleaning the collected data to make it suitable for analysis or use in the smart contract.

For instance, data preprocessing can involve verifying the accuracy and authenticity of user information during the user registration process to prevent fraudulent activities. It can also involve validating the details of a campaign, such as funding goals and deadlines, to ensure that they are realistic and achievable.

In addition, data preprocessing can also help to ensure the accuracy and reliability of the data collected during the donation tracking process. This can involve checking for errors such as duplicate transactions, invalid wallet addresses, or anomalies. By ensuring the accuracy and integrity of the data collected, it can prevent errors, fraud, and other issues that could negatively impact the platform's users and its success.

CHAPTER 5

REQUIREMENT AND SPECIFICATIONS

Here in this chapter we are discussing all the Software and Hardware requirement as well as Functional and Non-Functional requirements like performance, Security, Reliability and Maintainability which are necessary for efficient performance of application and Proper Prediction without any error and exception.

5.1 Hardware Specifications

Hardware Specifications

S/N.	Hardware	Type/Version
1	Processor	Intel i7 11th gen
2	RAM	16GB
3	Hard Disk	1500GB
4	Key Board	Any Standard Key Board
5	Mouse	Three Button type

5.2 Software Specifications

Software Specifications

S/N.	Software Req.	Software Edition
1	Python	3.7
2	Anaconda navigator	2020.02
3	Operating System	Windows 7,8,10 (32/64 bit)
4	Spyder Anaconda IDE	

5.3 Libraries

Table 5.3: Library Used

S.No.	Software
1	stripe,paypal for funds
2	wordpree for website
3	streamline for payment
4	mailchimp for mail market
5	Sklearn for choosing model
6	Kivy for GUI
7	OS for handling files

CHAPTER 6

TESTING AND RESULTS

The chapter focuses on the importance of testing code to improve prediction accuracy. It discusses methods for evaluating the fit of data to a model, assessing accuracy, and analyzing outputs

6.1Testing

Discovering and fixing such problems is what testing is all about. The goal of testing is to identify and fix any issues with the finished product. It's a method for evaluating the quality of the operation of anything from a whole product to a single component. The goal of stress testing software is to verify that it retains its original functionality under extreme circumstances. There are several different tests from which to pick.

Who Performs the Testing:

n crowdfunding, it is crucial to ensure accurate prediction of funding outcomes by testing the code used for prediction. The testing process should involve experts with coding and data analysis skills to guarantee reliable evaluation. Software developers, data scientists, and quality assurance engineers are typically tasked with this responsibility. Their expertise ensures improved transparency, accuracy, and reliability in the prediction process.

When it is recommended that testing begin: Testing the software is the initial step in the process. begins with the phase of requirement collecting, also known as the Planning phase, and ends with the stage known as the Deployment phase.

Testing in the incremental model is carried out at the conclusion of each increment or iteration, and the entire application is examined in the final test.

When it is appropriate to halt testing: Without first putting the software through it paces, it is impossible for anyone to guarantee that it is completely devoid of errors. Because the domain to which the input belongs is so expansive we are unable to check every to check every

6.1 Different Types of Testing

There are four fundamental types of testing

Singular Testing

Singular testing ensures the correct functioning of individual software components in blockchain fundraising, while maintaining integrity and originality.

This testing's goal is to confirm that the software performs as expected.

Test Cases

1. Verify that all donation transactions are recorded accurately in the platform's database, including the amount, date, donor information, and recipient information.

2. Test the platform's validation and verification process for charitable organizations to ensure that only legitimate and registered organizations can receive donations.

3. Test the platform's reporting and analytics features to ensure that they accurately report on the total amount of donations, the percentage of donations going to each charitable organization, and any fees or charges associated with donations.

Integration Testing

The programme is put through its paces in its final form, once all its parts have been combined, during the integration testing phase. At this phase, we look for places where interactions between components might cause problems.

Test Cases

1. Test the integration between the donation transaction process and the platform's database, ensuring that all data is accurately recorded and can be accessed and reported on as needed.

2. Verify that the platform's smart contract functionality is properly integrated with the donation transaction process, ensuring that transactions are executed correctly and automatically.

3. Test the integration between the platform's compliance features, such as anti-money laundering and know-your-customer checks, and the donation transaction process, ensuring that fraudulent donations are prevented and that all donors are properly vetted.

Functional Testing

One kind of software testing is called functional testing, and it involves comparing the system to functional requirements and specifications. In order to test functions, their input must first be provided, and then the output must be examined. Functional testing verifies that an application successfully satisfies all of its requirements in the correct manner. This particular kind of testing is not concerned with the manner in which processing takes place; rather, it focuses on the outcomes of processing. Therefore, it endeavours to carry out the test cases, compare the outcomes, and validate the correctness of the results.

Test Cases

1. Test the donation process end-to-end, ensuring that donors can successfully make donations to registere charitable organizations through the platform.

2. Verify that the platform's search functionality is accurate and provides relevant results when users search for charitable organizations based on criteria such as location, cause, or name.

3. Test the platform's validation and verification process for charitable organizations, ensuring that only legitimate and registered organizations are approved to receive donations through the platform.

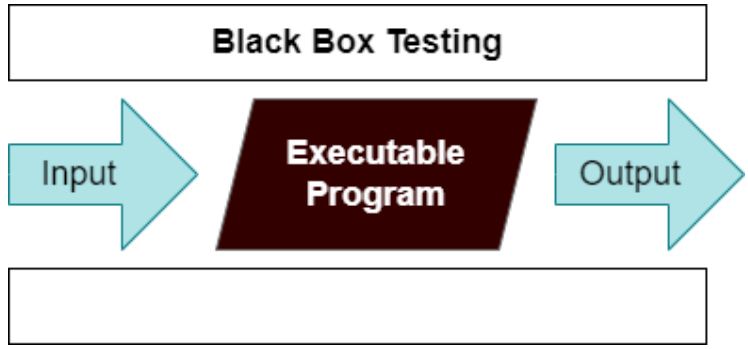
6.2 TESTING TECHNIQUES

There are many different techniques or methods for testing the software, including the following:

BLACK BOX TESTING

During this kind of testing, the user does not have access to or knowledge of the internal structure or specifics of the data item being tested. In this method, test cases are generated or designed only based on input and output values, and prior knowledge of either the design or the code is not necessary. The testers are just conscious of knowing about what is thought to be able to do, but they do not know

how it is able to do it.



In website testing, the tester typically uses a web browser to access the web pages, enters authorized input data, and validates the outputs against the intended results without requiring knowledge of the website's internal workings. This process helps ensure that the website is functioning correctly and delivering the expected user experience.

TEST CASE:

1. Test the user interface by simulating different user scenarios and verifying that all functions are easy to use , intutive, and error-free.

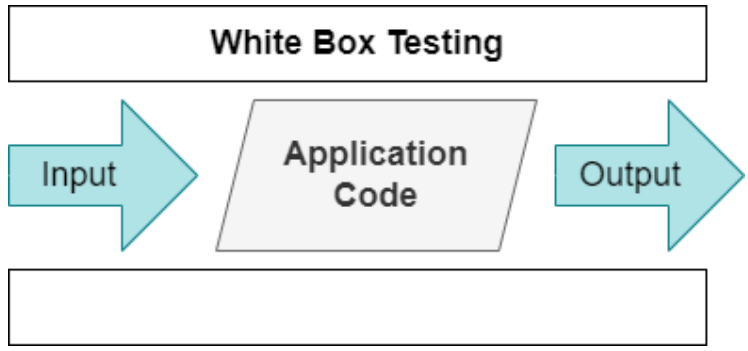
2. Verify that the platform's search functionality provides accurate and relevant search results based on user criteria, such as location, cause, or name.

3. Test the platform's validation and verification process for charitable organizations by attempting to register non-legitimate organizations and verifying that they are not approved.

WHITE BOX TESTING

During this kind of testing, the user is aware of the internal structure and details of the data item, or they have access to such information. During this process, test cases are created by referencing the code to ensure that each component is tested thoroughly and that any potential defects are identified and corrected.

constructed by referring to the code. Programming is extremely knowledgeable of the manner in which the application of knowledge is significant. White Box Testing is so called because, as we all know, in the tester's eyes it appears to be a white box, and on the inside, everyone can see clearly. This is how the testing got its name.



As an instance, a tester and a developer examine the code that is implemented in each field of a website, determine which inputs are acceptable and which are not, and then check the output to ensure it produces the desired result.

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Test Cases

1. Test the platform's data validation process by verifying that all user input is validated and that invalid or malicious data is rejected.

2. Test the platform's database schema and data integrity by verifying that all tables and columns are correctly defined and that data is stored and retrieved accurately.

3. Verify that the platform's smart contract code is accurate and secure by reviewing the code for potential vulnerabilities and testing it against simulated attacks.

6.2Code

scripts > deploy.js > ...

```javascript
const hre = require("hardhat");

async function main() {

  // We get the contract to deploy
  const Crowdfunding = await hre.ethers.getContractFactory("Crowdfunding");
  const crowdfunding = await Crowdfunding.deploy();

  await crowdfunding.deployed();

  console.log("Crowdfunding deployed to:", crowdfunding.address);
}

// We recommend this pattern to be able to use async/await everywhere
// and properly handle errors.
main()
  .then(() => process.exit(0))
  .catch((error) => {
    console.error(error);
    process.exit(1);
  });
```

package-lock.json > ...

```json
{
  "name": "crowdfunding",
  "version": "1.0.0",
  "lockfileVersion": 3,
  "requires": true,
  "packages": {
    "": {
      "name": "crowdfunding",
      "version": "1.0.0",
      "license": "MIT",
      "devDependencies": {
        "@nomiclabs/hardhat-ethers": "^2.0.5",
        "@nomiclabs/hardhat-waffle": "^2.0.3",
        "chai": "^4.3.6",
        "ethereum-waffle": "^3.4.4",
        "ethers": "^5.6.2",
        "hardhat": "^2.8.3"
      }
    },
    "node_modules/@chainsafe/as-sha256": {
      "version": "0.3.1",
      "resolved": "https://registry.npmjs.org/@chainsafe/as-sha256/-/as-sha256-0.3.1.tgz",
      "integrity": "sha512-hldFFYuf49ed7DAakWVXSJODuq3pzJEguD8tQ7h+sGkM18vja+OFoJI9krnGmgzyuZC2ETX0NOIcCTy31v2Mtg==",
      "dev": true
    },
    "node_modules/@chainsafe/persistent-merkle-tree": {
      "version": "0.4.2",
      "resolved": "https://registry.npmjs.org/@chainsafe/persistent-merkle-tree/-/persistent-merkle-tree-0.4.2.tgz",
      "integrity": "sha512-lLO3ihKPngXLTus/L7WHKaw9PnNJWizlOF1H9NNzHP6Xvh82vzg9F2bzkXhYIFshMZ2gTCEz8tq6STe7r5NDfQ==",
      "dev": true,
      "dependencies": {
        "@chainsafe/as-sha256": "^0.3.1"
      }
    },
    "node_modules/@chainsafe/ssz": {
      "version": "0.9.4",
      "resolved": "https://registry.npmjs.org/@chainsafe/ssz/-/ssz-0.9.4.tgz",
      "integrity": "sha512-77Qtg2N1ayqs4Bg/wvnWfg5Bta7iy7IRh8XqXh7oNMeP2HBbBwx8m6yTpA8p0EHItWPEBkgZd5S5/LSlp3GXuQ==",
      "dev": true,
      "dependencies": {
        "@chainsafe/as-sha256": "^0.3.1",
        "@chainsafe/persistent-merkle-tree": "^0.4.2",
        "case": "^1.6.3"
      }
    },
    "node_modules/@ensdomains/ens": {
      "version": "0.4.5",
      "resolved": "https://registry.npmjs.org/@ensdomains/ens/-/ens-0.4.5.tgz",
      "integrity": "sha512-JSvpj1iNMFjK6K+uVl4unqMoa9rf5jopb8cya5UGBWz23Nw8hSNT7efgUx4BTlAPAgpNlEioUfeTyQ6J9ZvTVw==",
      "deprecated": "Please use @ensdomains/ens-contracts",
      "dev": true,
      "dependencies": {
        "bluebird": "^3.5.2",
        "eth-ens-namehash": "^2.0.8",
        "solc": "^0.4.20",
        "testrpc": "0.0.1",
        "web3-utils": "^1.0.0-beta.31"
      }
    },
    "node_modules/@ensdomains/resolver": {
      "version": "0.2.4",
      "resolved": "https://registry.npmjs.org/@ensdomains/resolver/-/resolver-0.2.4.tgz",
```

hardhat.config.js > ...

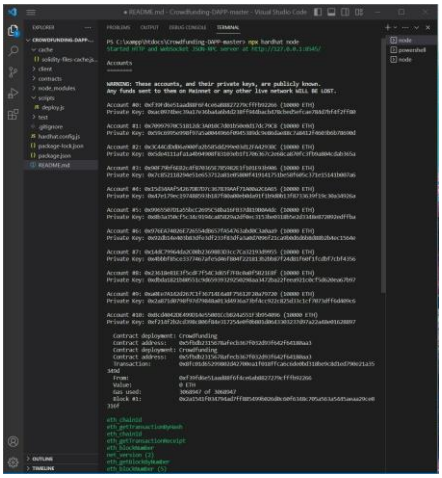
```javascript
require("@nomiclabs/hardhat-ethers");
require("@nomiclabs/hardhat-waffle");
// const { ACCOUNT_PRIVATE_KEY,ALCHEMY_KEY } = process.env;

module.exports = {
  solidity: "0.8.4",
  // defaultNetwork: "rinkeby",
  paths: {
    artifacts: "./client/artifacts",
  },
  networks: {
    hardhat: {
      chainId: 31337
    },
    // rinkeby: {
    //   url: `https://eth-rinkeby.alchemyapi.io/v2/${ALCHEMY_KEY}`,
    //   accounts: [`0x${ACCOUNT_PRIVATE_KEY}`]
    // }
  },
};
```

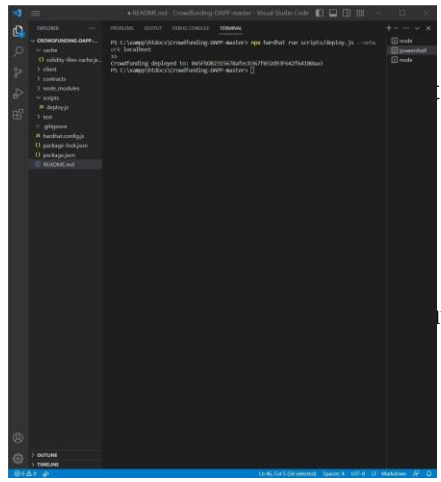
package.json > ...

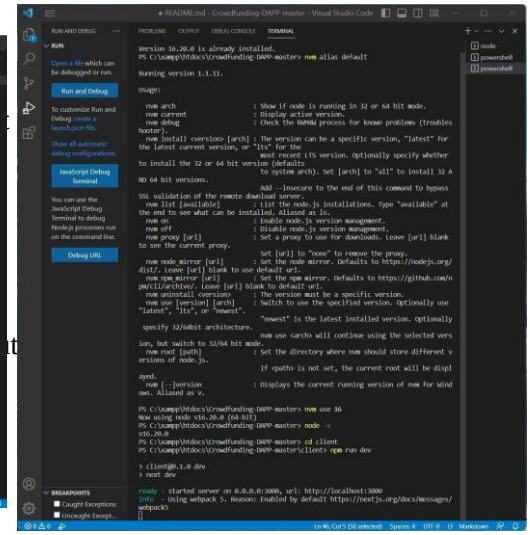
```json
{
  "name": "crowdfunding",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "repository": {
    "type": "git",
    "url": "git+https://github.com/spandan114/Crowdfunding-DAPP.git"
  },
  "author": "spandan joshi",
  "license": "MIT",
  "bugs": {
    "url": "https://github.com/spandan114/Crowdfunding-DAPP/issues"
  },
  "homepage": "https://github.com/spandan114/Crowdfunding-DAPP#readme",
  "devDependencies": {
    "@nomiclabs/hardhat-ethers": "^2.0.5",
    "@nomiclabs/hardhat-waffle": "^2.0.3",
    "chai": "^4.3.6",
    "ethereum-waffle": "^3.4.4",
    "ethers": "^5.6.2",
    "hardhat": "^2.8.3"
  },
  "dependencies": {}
}
```

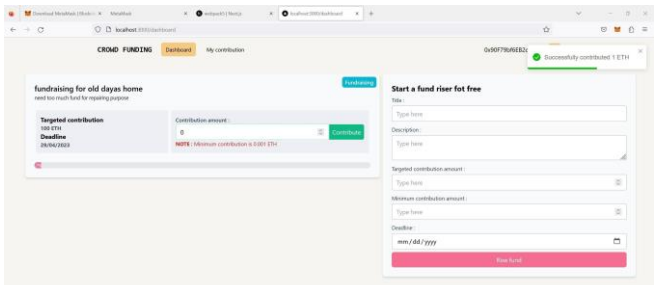
6.3 Result/Outputs

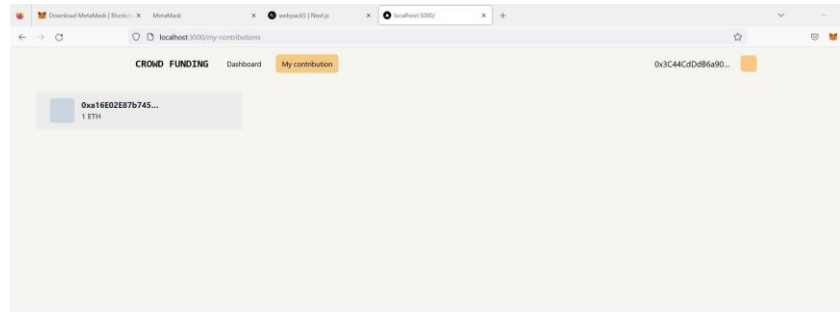
6.3.1 Console Output

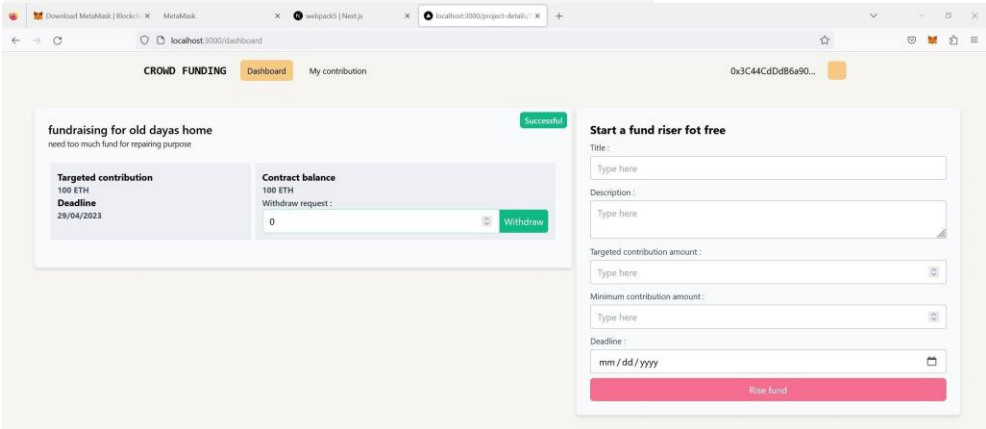












CHAPTER 7

CONCLUSION

In conclusion, crowdfunding has emerged as a popular and effective method for raising funds for various projects, causes, and initiatives. It allows individuals, businesses, and organizations to connect with a large pool of potential backers and supporters through online platforms. Crowdfunding has democratized the process of fundraising, making it more accessible and inclusive for everyone.

Crowdfunding offers several benefits, including providing access to capital, market validation, and customer engagement. However, it also comes with its own set of challenges, such as the need for effective marketing, managing backer expectations, and delivering on promises made.

To succeed in crowdfunding, it is important to have a well-thought-out plan that includes a clear project description, realistic funding goal, and a comprehensive marketing strategy. Additionally, building a strong community of backers and supporters can help increase the chances of success.

Overall, crowdfunding has revolutionized the way people think about fundraising, and it will likely continue to play an important role in financing projects, businesses, and social causes in the future.

CHAPTER 8

FUTURE ENHANCEMENT

There are several potential future enhancements for crowdfunding that could improve the experience for both creators and backers. Here are some examples:

Improved AI and machine learning: As AI and machine learning technologies continue to advance, they could be used to better match creators with potential backers based on their interests and preferences. This could help increase the success rate of campaigns and make it easier for creators to find supporters.

More flexible funding options: Currently, most crowdfunding platforms operate on an all-or-nothing funding model, where creators only receive the funds if they meet their funding goal. However, some platforms are experimenting with more flexible funding options that allow creators to keep the funds they raise, even if they don't meet their goal. This could make it easier for creators to get the funding they need and reduce the risk for backers.

Integrated payment systems: Currently, most crowdfunding platforms require backers to use third-party payment systems like PayPal or Stripe to make contributions. However, integrated payment systems could make the process more streamlined and secure, reducing the risk of fraud and errors.

Better data analytics: Crowdfunding platforms could use data analytics to help creators optimize their campaigns and improve their chances of success. For example, analytics could be used to identify the most effective marketing channels, the best time to launch a campaign, and the most appealing rewards.

More support for international campaigns: Currently, crowdfunding is primarily focused on North America and Europe, but there is potential for growth in other regions.

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