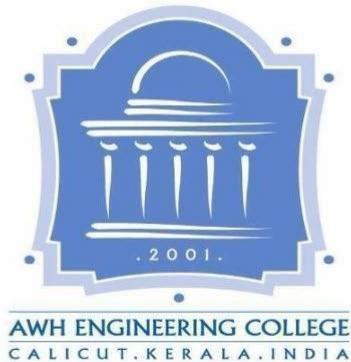


**CROWDFUNDING
PROJECT THESIS
SUBMITTED
TO
AWH ENGINEERING COLLEGE
KUTTIKATTOOR, KOZHIKODE
IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE
OF
Master Of Computer Applications
BY
MV FIDHA MARIYAM NAJEEB**



**DEPARTMENT OF COMPUTER APPLICATIONS
AWH ENGINEERING COLLEGE KUTTIKKATTOOR,
KOZHIKODE
MAY 2023**

DEPARTMENT OF COMPUTER APPLICATIONS



AWH ENGINEERING COLLEGE KOZHIKODE

CERTIFICATE

This is to certify that this thesis entitled "CROWDFUNDING" submitted herewith is an authentic record of the thesis work done by MV FIDHA MARIYAM NAJEEB (AWH21MCA-2022) under our guidance in partial fulfillment of the requirements for the award of Master of Computer Applications from APJ Abdul Kalam Technological University during the academic year 2023.

Mrs. Sruti Sudevan

Assistant Professor

Dept. of Computer Application

Head of the department

Miss. Ashwini M

Assistant Professor

Dept. of Computer Application

Project guide

External Examiner

Internal Examiner

ACKNOWLEDGEMENT

I express my sincere gratitude to our beloved principal **Dr.Sabeena M V** for providing me an opportunity with the required facilities for doing this project. I express my hearty thanks to **Mrs. Sruti Sudevan**, Head of the department of Computer Application, **Miss. Ashwini M**, Assistant Professor for her guidance. I am thankful to all other staff of the MCA department for their encouragement, timely guidance, valuable suggestions and inspiring ideas given throughout this project. I am grateful to my friends for the way they have cooperated, expected me to achieve success and have always stirred my ambition to do the best. Above all, I am grateful to the almighty, who has showered His blessings on me throughout my life and throughout the project.

MV FIDHA MARIYAM NAJEEB

ABSTRACT

Crowdfunding is an online cash raising platform which is a path for the people to contribute a limited quantity of money to enable innovative individuals to fund the venture. Using crowdfunding, people can put resources into pioneering businesses through a middle medium or platform. The issue with the current crowdfunding platform is that third party medium don't give the assurance of the money investor contributed for the project and investors don't have control over the cash they contributed. This system proposes blockchain based crowdfunding by using which the platform can give a private, secure and decentralized path for crowdfunding. Blockchain in crowdfunding allows decentralization which means that no individual platform or group of platforms control the smart contracts which makes it transparent to everyone in the blockchain.

The main objective of this system is to let investors contribute to any project effectively through which the contributors can have a control over the invested money and also both the project creators and investors can effectively make and reserve funding for the project.

CONTENTS

	Page No
1. INTRODUCTION	1
2. SYSTEM ANALYSIS	3
2.1 Existing System	4
2.2 Proposed System	4
2.3 Module Description	5
2.4 Sprint	7
2.5 User Stories	11
3. FEASIBILITY STUDY	12
3.1 Economical Feasibility	13
3.2 Technical Feasibility	13
3.3 Behavioral Feasibility	13
3.4 Software Feasibility	13
4. SOFTWARE ENGINEERING PARADIGM	14
4.1 Agile Model	15
4.2 Scrum	16
5. SYSTEM REQUIREMENT SPECIFICATIONS	18
5.1 Software Requirements	19
5.2 Hardware Requirements	19
5.3 Blockchain Requirements	19
6. SYSTEM DESIGN	20
6.1 Database Design	21
6.2 Tables	23
6.3 UML Design	26
6.4 Use Case Diagram	28
6.5 Scenario	29

6.6 Sequential Diagram	31
7. SYSTEM DEVELOPMENT	34
7.1 Coding	35
8. SYSTEM TESTING AND IMPLEMENTATION	47
8.1 Types of Testing	48
8.2 Implementation	50
9. SYSTEM MAINTENANCE	52
10. FUTURE ENHANCEMENT	54
11. CONCLUSION	56
12. APPENDIX	58
13. GANACHE	77
14. BIBLIOGRAPHY	80

INTRODUCTION

1. INTRODUCTION

Crowdfunding using blockchain refers to the use of blockchain technology to raise funds for a project or venture by pooling small contributions from a large number of individuals. In traditional crowdfunding, a centralized platform facilitates the collection and distribution of funds. However, with blockchain technology, the process can be decentralized, transparent, and secure. Smart contracts are used to automate the collection, distribution, and tracking of funds, as well as ensure that funds are released only when certain conditions are met. Blockchain-based crowdfunding can also offer benefits such as reduced fees, faster transactions, and greater security compared to traditional crowdfunding platforms. It can also potentially enable a more democratic and inclusive form of fundraising, where anyone can contribute to a project, regardless of their location or financial status.

Crowdfunding is a method to raise money from a large number of individual investors or companies for any project they are interested in. However, traditional crowdfunding platforms often take a significant portion of the funds, leaving investors with empty promises. Crowdfunding using blockchain technology changes this by offering a new way to fund-raise for business ventures. With this model, the project initiator proposes the idea or venture, individuals or investors invest in it, and a platform brings them together to make the project successful. This model is used to finance a wide range of innovative projects, including medical advances, social entrepreneurship ventures, and more

SYSTEM ANALYSIS

2. SYSTEM ANALYSIS

2.1 Existing system

Traditional crowdfunding involves pitching investors, either in person or through a pitch deck or video, to convince them to invest in a particular project or idea. The pitch typically includes information about the project, its potential market, and the team behind it, as well as financial projections and a timeline for development and launch. Investors may include friends and family, angel investors, or venture capital firms, depending on the size and scope of the project. Once the funding goal is met, the project team can begin development and launch the product or service. However, traditional crowdfunding can be a difficult and time-consuming process, and success is not guaranteed.

The existing crowdfunding system typically involves a centralized platform that connects project initiators with individual investors or companies interested in funding the project. The platform acts as an intermediary and takes a percentage of the funding as a fee for their services. Project initiators must present their ideas and plans on the platform in order to attract investors, and investors must trust the platform to facilitate the transaction and ensure the project is legitimate. However, this traditional model has been criticized for its high fees, lack of transparency and potential for fraud.

The existing crowdfunding system has several disadvantages:

- It is often centralized and controlled by a few intermediaries such as banks, venture capitalists, and crowdfunding platforms. These intermediaries may take a significant portion of the raised funds as their fees and commissions, reducing the amount of money available for the project creators.
- There may be a lack of transparency and accountability in the existing system, as the intermediaries may not always disclose how they are using the funds and whether the projects are meeting their intended goals.

2.2 Proposed system

The proposed system of crowdfunding using blockchain aims to revolutionize the traditional crowdfunding model by eliminating the need for

intermediaries and providing a secure, transparent and decentralized platform for funding. In this system, investors can directly invest in projects using cryptocurrency and smart contracts, which ensures automatic and secure execution of funding agreements. The use of blockchain technology also provides transparency and accountability by maintaining an immutable record of all transactions. Additionally, the proposed system offers more flexibility and global reach for both investors and project initiators, thereby enabling a wider range of projects to be funded.

The proposed crowdfunding system has several advantages:

- No need for intermediaries
- Use of cryptocurrency as the means of investment and profit distribution provides an added layer of security and eliminates the need for intermediaries
- No fees

2.3 Module Description

This project has 3 modules:

Admin

:

- View and approve Business
- View approved Business
- View rejected Business
- View and approve Users
- View approved Users
- View rejected Users
- View Startup request
- View Approved Startup
- View Complaints and send Reply
- Change Password

Business:

- Sign-up
- Login
- Change Password
- View Profile

- Manage Startups
- View Fund Request for Startups
- View Funds
- Add Profit
- View Profit distribution
- Manage Spending

User (Investors):

- Sign-up
- Login
- Change Password
- View Business
- View Startups
- Send Payment
- View own transaction
- View Profit
- Send Complaints
- View Reply
- View Spending

2.4 Sprint

Sprint 1

MODULE	TASK	PENDING TASK ANY	HOURS FOR COMPL ETION	EXPECTE D DATE OF COMPLET ION	ACTUAL DATE OF COMPLET ION	REASO N FOR DEVIAT ION
Requirement analysis	Observation and brainstorming	-	12 hours	02/02/2023	03/02/2023	-
	Mvc architecture	-	6 hours	06/02/2023	06/02/2023	-
	Use case	-	6 hours	07/02/2023	07/02/2023	-
	Sequence diagram	-	6 hours	08/02/2023	08/02/2023	-
	User stories	-	5 hours	09/02/2023	09/02/2023	-
Admin, user, business	Table design	-	5 hours	10/02/2023	10/02/2023	-
	Installing packages	-	5 hours	13/02/2023	13/02/2023	-
	Login	-	5 hours	14/02/2023	14/02/2023	-
	Testing	-	6 hours	27/04/2023	27/04/2023	-

Sprint 2

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
Admin	Form design	-	6 hours	16/02/2023	16/02/2023	-
	Approve/Reject Business	-	7 hours.	17/02/2023	20/02/2023	Need time for coding
	Approve/Reject Users	-	6 hours.	20/02/2023	20/02/2023	-
	Approve Startups	-	6 hours.	21/02/2023	21/02/2023	-
	View Approved Startups	-	7 hours.	22/02/2023	23/02/2023	Development Study
	View Complaints		6 hours	23/02/2023	23/02/2023	-
	Send Reply	-	7 hours	24/02/2023	24/02/2023	-
	Change Password	-	6 hours	27/02/2023	27/02/2023	-
	Template	-	7 hours	28/02/2023	28/02/2023	-
	Design	-	6 hours	01/03/2023	01/03/2023	-

Sprint 3

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
Business	Form Design	-	6 hours.	02/03/2023	02/03/2023	-
	Signup	-	5 hours	03/03/2023	03/03/2023	-
	View Profile	-	6 hours.	06/03/2023	06/03/2023	-
	Add startups	-	5 hours.	07/03/2023	07/03/2023	-
	View, Edit Startups	-	6 hours.	09/03/2023	09/03/2023	-
	View Fund Request	-	5 hour	10/03/2023	10/03/2023	-
	Payment changes in ganache	-	6 hours	13/03/2023	13/03/2023	-
	View Investments(Funds)	-	6 hour	14/03/2023	14/03/2023	-
	Update Profit	-	5 hour	15/03/2023	15/03/2023	-
	View Profit Distribution	-	6 hour	16/03/2023	16/03/2023	-
	Add Expenses	-	6 hour	17/03/2023	17/03/2023	-
	Validation	-	4 hour	20/03/2023	20/03/2023	-
	Design	-	6 hour	21/03/2023	21/03/2023	-

Sprint 4

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
User	Form Design	-	8 hours.	24/03/2023	27/03/2023	Development Study
	Signup	-	6 hours	28/03/2023	28/03/2023	-
	View Business	-	6 hours.	29/03/2023	29/03/2023	-
	View Startups	-	5 hours.	31/03/2023	31/03/2023	-
	Send Request for fund	-	6 hour	03/04/2023	03/04/2023	-
	Send Payment through Ganache	-	6 hour	05/04/2023	05/04/2023	-
	View Own Transaction	-	8 hour	07/04/2023	10/04/2023	Retrive datafrom ganache
	View Profit	-	6 hour	10/04/2023	10/04/2023	-
	Send Complaint	-	4 hour	11/04/2023	11/03/2023	-
	View Reply	-	4 hour	14/04/2023	14/04/2023	-
	View Expenses	-	4 hour	17/04/2023	17/04/2023	-
	Validation	-	5 hours	18/04/2023	18/04/2023	-
	Design	-	6 hours	20/04/2023	20/04/2023	-

2.5 User Stories

Crowdfunding using Blockchain is a web application which consists of 3 modules as Admin, User and Business. Admin is responsible for managing the Business and Users by authentication. Admin is also responsible for accepting newly created startup request and also view the accepted startups. Admin is also able to view the complaints received from users and give appropriate response.

Business owner can sign-up for the crowdfunding platform, in-order to use its services, logging in to account to access information and use the platform's features. Business Owner is responsible to manage the startups, in-order to add new startups, edit existing ones, or delete ones that are no longer active. Business owner can view the requests for startups to find potential investment opportunities, view the investments to keep track of funding and monitor the portfolio, view the profit distribution to see how profits are being shared among investors and is able to manage spending to allocate resources efficiently and effectively. Business owner can change the password for security purposes.

User can sign-up for the platform by providing personal information and credentials and then log in to account using username and password also change password for security purposes. User will be able to view business information and profile on the platform, view available startups and their details to make an informed decision for investment, will be able to send payments securely for the investment that the user have made, view own transaction history for investment and payments made, view the profit earned from investments on the platform, will be able to send complaints or issues related to the platform or investments made, view the reply or resolution for the complaints or issues raised and also view the spending details of the platform for transparency and accountability purposes.

FEASIBILITY STUDY

3. FEASIBILITY STUDY

System study is the best of system proposed according to work ability, impact on the organization ability to meet user needs, and effective use of resources. The prime focus of the feasibility study is evaluating the practicability of the proposed system keeping in mind a number of factors.

3.1 Economical Feasibility

The system being developed is economic with respect to users point of view. The cost of development is very less, all the requirements such as data, hardware and software requirements etc were provided by the management. Additional resources like blockchain ethereum need only small amount can also be easily acquired. So, it is economically feasible.

3.2 Technical Feasibility

The technical requirements for the system is economic and it does not use any other additional hardware. In the basics of software it only uses blockchain which is easily available. Since all the requirements are within the reach of modern technology, developers would say that this system is technically feasible.

3.3 Operational Feasibility

Operational feasibility is a measure of how well a proposed system meets all requirements. Since the system is user friendly, this considered to be operationally feasible. The system is user friendly. There is not much manual work involved which ultimately reduces the pressure of work of all the entities.

3.4 Software Feasibility

Even though this application is developed in very high software environment, this also supported by many other environments with minimum changes. Ganache is used as the blockchain technology. The system is fully feasible to be executed on any kind of operating systems and browsers.

SOFTWARE ENGINEERING PARADIGM

4. SOFTWARE ENGINEERING PARADIGM

The software engineering paradigm which is also referred to as a software process model or Software Development Life Cycle (SDLC) model is the development strategy that encompasses the process, methods and tools. SDLC describes the period of time that starts with the software system being conceptualized.

4.1 Agile model

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product. Agile Methods break the product into small incremental builds. These builds are provided in iterations. Each iteration typically lasts from about one to three weeks. At the end of the iteration, a working product is displayed to the customer and important stakeholders. Agile Methods break the product into small incremental builds. These builds are provided in iterations. Each iteration typically lasts from about one to three weeks.

At the end of the iteration, a working product is displayed to the customer and important stakeholders. Agile model believes that every project needs to be handled differently and the existing methods need to be tailored to best suit the project requirements. In Agile, the tasks are divided to time boxes (small time frames) to deliver specific features for a release.

Agile software development is an umbrella term for a set of frameworks and practices based on the values and principles expressed in the Manifesto for Agile Software Development and the 12 Principles behind it. When user approach software development in a particular manner, it's generally good to live by these values and principles and use them to help figure out the right things to do given users particular context. One thing that separates Agile from other approaches to software development is the focus on the people doing the work and how they work together. Solutions evolve through collaboration between self-organizing cross-functional teams utilizing the appropriate practices for their context.

4.2 Scrum

Scrum is an agile framework for managing knowledge work, with an emphasis on software development. It is designed for teams of three to nine members, who break their work into actions that can be completed within time boxed iterations, called "sprints", no longer than one month and most commonly two weeks, then track progress and re-plan in 15-minute stand-up meetings, called daily scrums.

Scrum is an iterative and incremental framework for managing product development. It defines "a flexible, holistic product development strategy where a development team works as a unit to reach a common goal", challenges assumptions of the "traditional, sequential approach to product development, and enables teams to self organize by encouraging physical co-location or close online collaboration of all team members, as well as daily face-to-face communication among all team members and disciplines involved.

In the project management, scrum, sometimes written Scrum or SCRUM, is a framework for developing, delivering, and sustaining products in a complex environment, with an initial emphasis on software development, although it has been used in other fields including research, sales, marketing and advanced technologies. It is designed for teams of ten or fewer members, who break their work into goals that can be completed within time-boxed iterations, called sprints, no longer than one month and most commonly two weeks. The scrum team assess progress in time-boxed daily meetings of 15 minutes or less, called daily scrums (a form of stand-up meeting). At the end of the sprint, the team holds two further meetings: the sprint review which demonstrates the work done to stakeholders to elicit feedback, and sprint retrospective which enables the team to reflect and improve.

A key principle of Scrum is the dual recognition that customers will change their minds about what they want or need and that there will be unpredictable challenges-for which a predictive or planned approach is not suited. As such, Scrum adopts an evidence based empirical approach accepting that the problem cannot be fully understood or defined up front, and instead focusing on how to maximize the team's ability to deliver quickly, to respond to emerging requirements, and to adapt to evolving technologies and changes in market

conditions. Many of the terms used in Scrum (e.g., scrum master) are typically written with leading capitals (e.g., Scrum Master) or as conjoint words written in camel case (e.g., Scrum Master). To maintain an encyclopedic tone, however, this article uses normal sentence case for these terms-unless they are recognized marks. This is occasionally seen written in all -capitals, as SCRUM. The word is not an acronym, so this is not correct; however, it likely arose due to an early paper by Ken Schwaber which capitalized SCRUM in its title. While the trademark on the term Scrum itself has been allowed to lapse, so that it is deemed as owned by the wider community rather than an individual, the leading capital is retained-except when used with other words.

SYSTEM REQUIREMENT SPECIFICATION

5.SYSTEM REQUIREMENTS SPECIFICATION

5.1 Software Requirements

- Operating system :Windows 7
- Frontend :HTML,CSS,Bootstrap,Javascript
- Backend :SQLyog
- Language used : python
- IDE :PyCharm
- Web browser :Internet Explorer/Google Chrome/Firefox
- Framework :Flask

5.2 Hardware Requirements

- A device with an internet connection
- Processor :intel core i3 or above
- Hard Disk :128GB and above processor
- RAM :4 GB
- Storage :500GB Hard disk

5.3 Blockchain

- Smart Contracts
- Backend: Ethereum Virtual Machine(Ganache)
- Truffle
- Web3 py

SYSTEM DESIGN

6. SYSTEM DESIGN

System design is the first in the development phase for many engineered product or system. It may define the process of applying various techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization.

6.1. Database Design

Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language, which can then be used to create a database. The term database design can be used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data.

In the relational model these are the tables and views. In an object database the entities and relationships map directly to object classes and named relationships. However, the term database design could also be used to apply to the overall process of designing, not just the base data structures, but also the forms and queries used as part of the overall database application within the database management system. The process of doing database design generally consists of a number of steps which will be carried out by the database designer. Usually, the designer must: Determine the relationships between the different data elements and superimpose a logical structure upon the data on the basis of these relationships.

Normalization

It is a process of converting a relation to a standard form. The process is used to handle the problems that can arise due to data redundancy i.e., repetition of data in the database, maintain data integrity as well as handling problems that can arise due to insertion, updation, deletion anomalies.

Insertion anomaly: Inability to add data to the database due to absence of other data.

Deletion anomaly: Unintended loss of data due to deletion of other data.

Update anomaly: Data inconsistency resulting from data redundancy and partial update.

Normal Forms: These are the rules for structuring relations that eliminate anomalies.

1. First Normal Form (1NF)

A relation is said to be in first normal form if the values in the relation are atomic for every attribute in the relation. This mean simply that no attribute value can be a set of values or, as it is sometimes expressed, a repeating group.

2. Second Normal Form (2NF)

A relation is said to be in second Normal form is it is in first normal form and it should satisfy any one of the following rules.

- Primary key is a not a composite primary key
- No non key attributes are present
- Every non key attribute is fully functionally dependent on full set of primarykeys.

3.Third normal Form(3NF)

A relation is said to be in third normal form if there exist no transitive dependencies.

Transitive dependency: If two non-key attributes depend on each other as well on the primary key then they are said to be transitively dependent. the above normalization principle was applied to decompose the data in multiple tables thereby making the data to be maintained in a consistent state.

6.2 Tables

login

Field	Datatype	Description
logid	int(11)	Primary Key
user	varchar(100)	Not Null
password	varchar(100)	Not Null
type	varchar(20)	Not Null

Business

Field	Data type	Description
B_id	int(11)	Primary Key
Name	varchar(50)	Not null
Description	varchar(100)	Not null
Email	varchar(50)	Not null
phone_no	varchar(50)	Not null
Place	varchar(50)	Not null
Post	varchar(50)	Not null
District	varchar(50)	Not null
Pin	int(11)	Not null
photo	varchar(50)	Not null
BLoginId	int(11)	Foreign Key
Authentication	varchar(50)	Not null
AuthenticationType	varchar(50)	Not null
IssuedBy	varchar(50)	Not null
status	varchar(50)	Not null

User

Field	Datatype	Description
Uid	int(11)	Primary Key
Name	varchar(50)	Not Null
Email	varchar(50)	Not Null
Phone	varchar(50)	Not Null
Place	varchar(50)	Not Null
Post	varchar(50)	Not Null
District	varchar(50)	Not Null
Pin	varchar(50)	Not Null
Photo	varchar(50)	Not Null
Age	int(11)	Not Null
Gender	varchar	Not Null
Ulogin	int(11)	Foreign key
AuthenticationType	varchar(50)	Not Null
Authentication	varchar(50)	Not Null
Status	varchar(50)	Not Null

Startup

Field	Datatype	Description
startup_id	int(11)	Primary Key
B_id	int(11)	Foreign Key
StartupName	varchar(50)	Not Null
details	varchar(100)	Not Null
amount	int(11)	Not Null
profit	int(11)	Not Null
video	varchar(50)	Not Null

patent	varchar(50)	Not null
status	varchar(50)	Not null

startuprequest

Field	Datatype	Description
ReqId	int(11)	Primary Key
Startup_id	int(11)	Foreign Key
U_id	int(11)	Foreign Key
amount	int(11)	Not Null
date	date	Not null
status	varchar(50)	Not null

spendingdetails

Field	Datatype	Description
spend_id	int(11)	Primary Key
startup_id	int(11)	Foreign Key
Details	varchar(100)	Not null
Amount_spent	int(11)	Not null
Date	date	Not null

profit

Field	Datatype	Description
profit_id	int(11)	Primary Key
user_id	int(11)	Foreign Key
startup_id	int(11)	Foreign Key
profit	int(11)	Not null
title	varchar(50)	Not null
date	date	Not null

profit_distribution

Field	Datatype	Description
distribution_id	int(11)	Primary Key
startup_id	int(11)	Foreign Key
user_id	int(11)	Foreign Key
amount	varchar(50)	Not null

complaint

Field	Datatype	Description
c_id	int(11)	Primary Key
Uid	int(11)	Foreign Key
B_id	int(11)	Foreign Key
Complain_details	varchar(50)	Not Null
Reply	varchar(50)	Not Null
Status	varchar(50)	Not Null
Date	date	Not Null

6.3 UML Designs

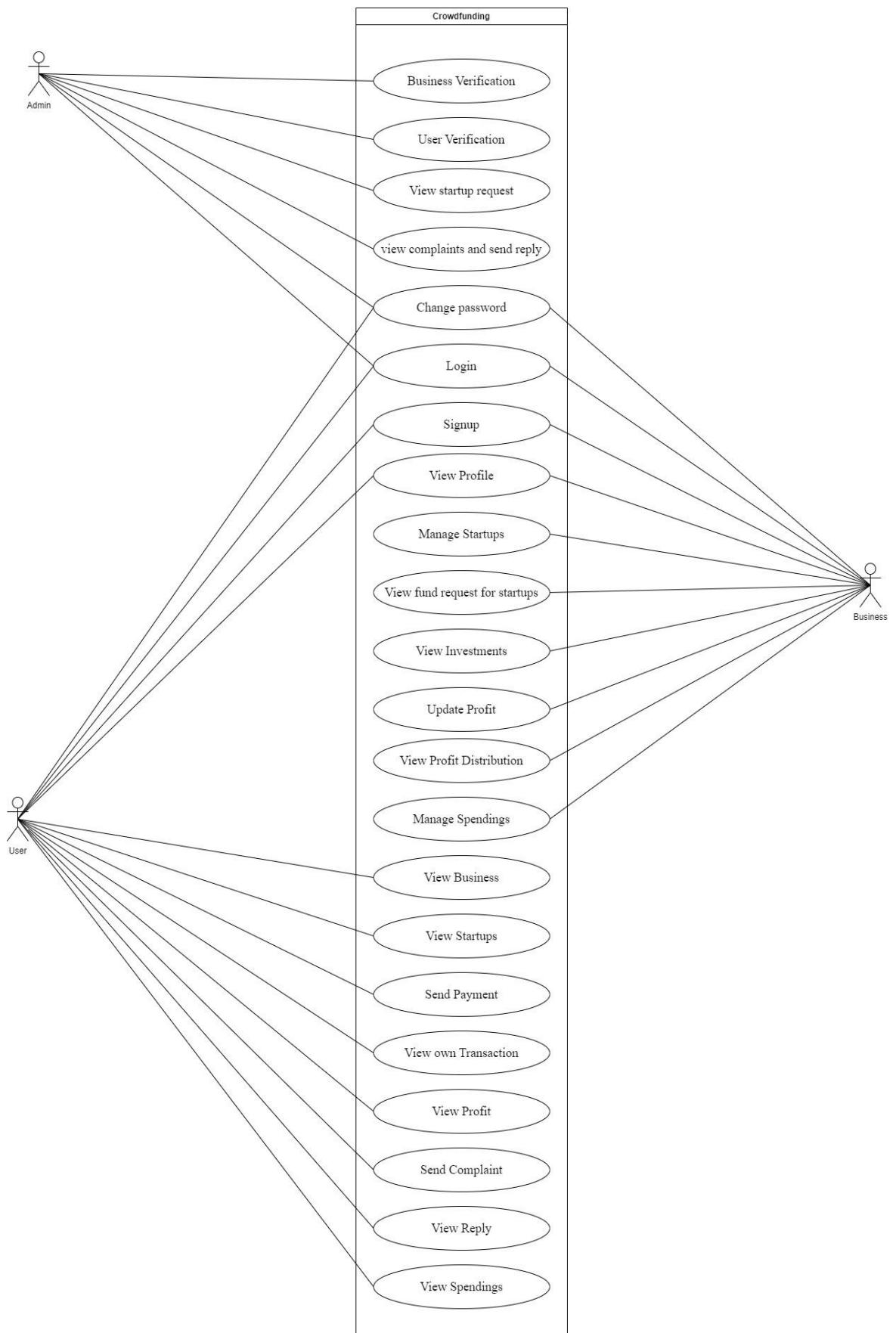
The Unified Modelling Language (UML) is a standard language for specifying, visualising, constructing, and documenting the artefacts of the software systems, as well as for business modelling and other non-software systems. The UML represents a collection of best engineering practices that have proven successful in the modelling of large and complex systems. The UML is a very important part of developing object-oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects. Using the UML helps project teams communicate, explore potential designs, and validate the architectural design of the software.

A sequence diagram is a type of UML diagram that visualizes the

interactions and message exchanges between different objects or components in a system over a specific period of time. It shows the flow of control and the order of message invocations, allowing you to understand the dynamic behavior of the system. Sequence diagrams are commonly used to model the behavior of a single use case or a specific scenario.

A use case diagram is a type of UML diagram that represents the functionality of a system from the user's perspective. It provides a high-level view of the system's behavior and shows how users or actors interact with the system to accomplish specific goals or tasks. Use case diagrams are useful for capturing and visualizing the requirements of a system and identifying the actors involved and the use cases they participate in.

6.4 Use case diagram



6.5 Scenario

Admin:

- 6.1.1 Can approve, view, reject Business
- 6.1.2 Can approve, view, reject Users
- 6.1.3 Can view startup request
- 6.1.4 Can view approved startup
- 6.1.5 Can View Complaints and Send reply
- 6.1.6 Can change password

Business

- 6.1.7 Can sign up and login
- 6.1.8 Can change password
- 6.1.9 Can view and manage profile
- 6.1.10 Can manage startups
- 6.1.11 Can view fund request for startups
- 6.1.12 Can View Investments
- 6.1.13 Can update profit
- 6.1.14 Can view profit distribution
- 6.1.15 Can manage Expenses

User

- 6.1.16 Can Sign up and login
- 6.1.17 Can change password
- 6.1.18 Can view profile
- 6.1.19 Can change password
- 6.1.20 Can View Business
- 6.1.21 Can view Startups
- 6.1.22 Can send payment
- 6.1.23 Can view own transaction
- 6.1.24 Can view profit

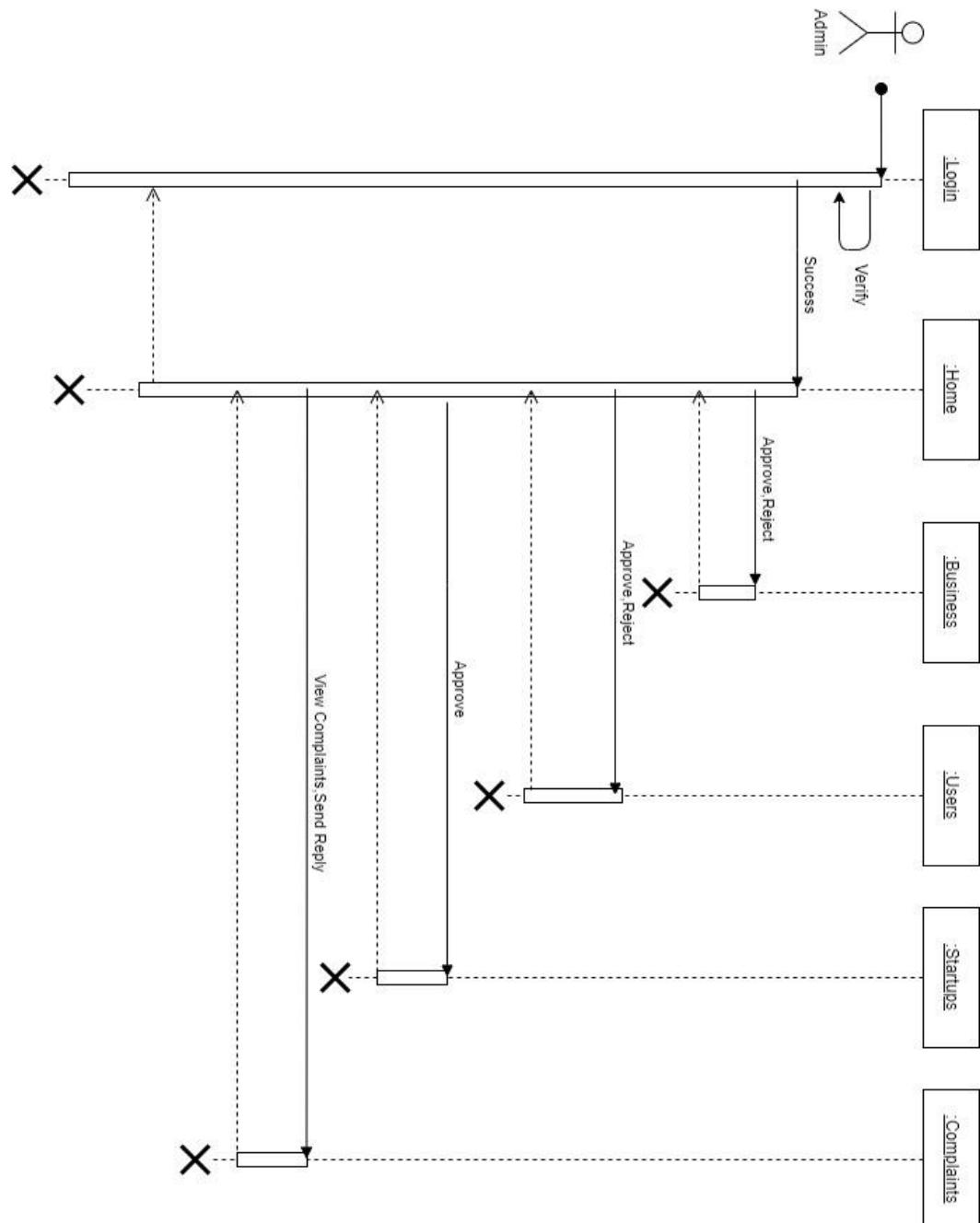
6.1.25 Can send complaints

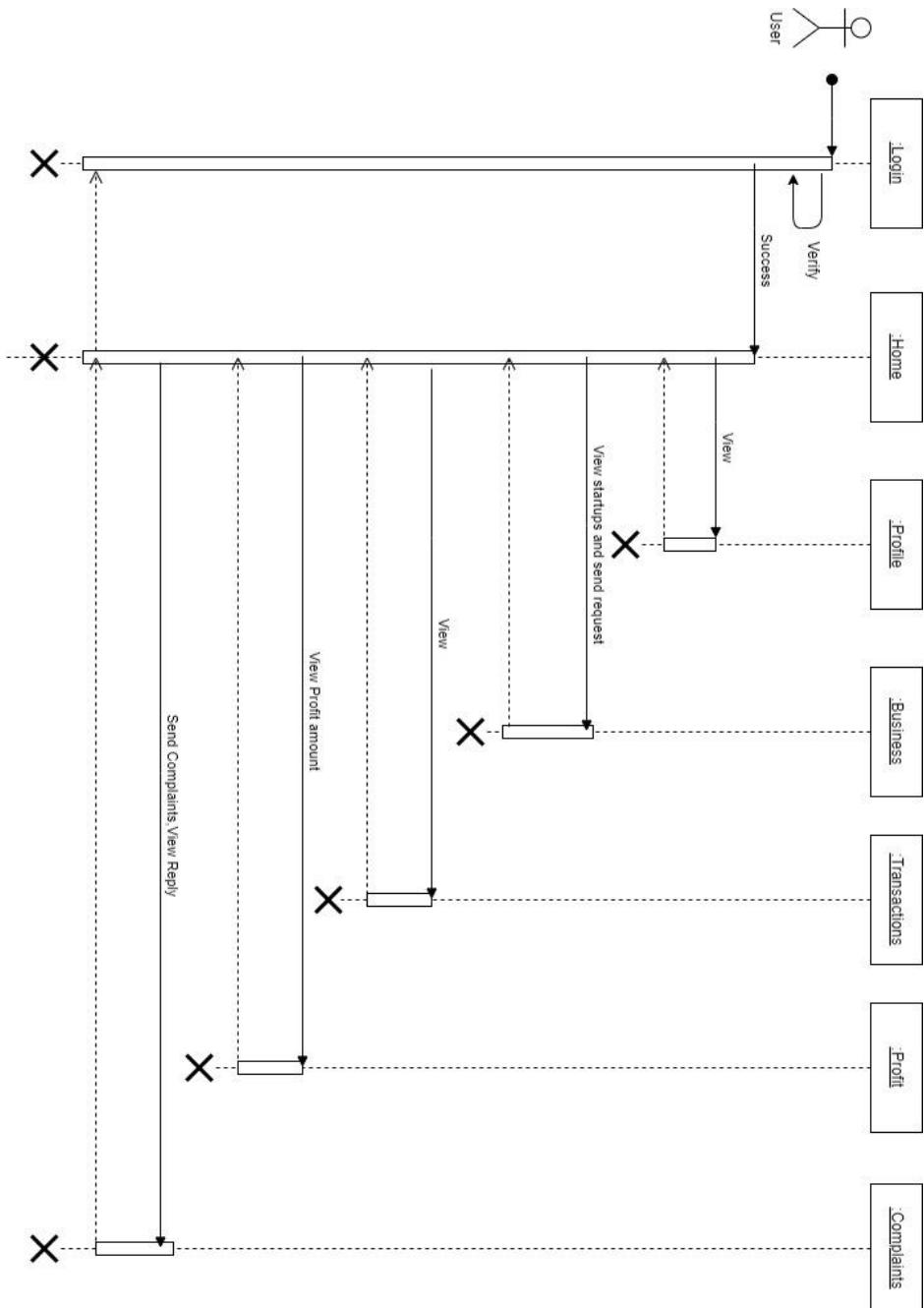
6.1.26 Can view reply

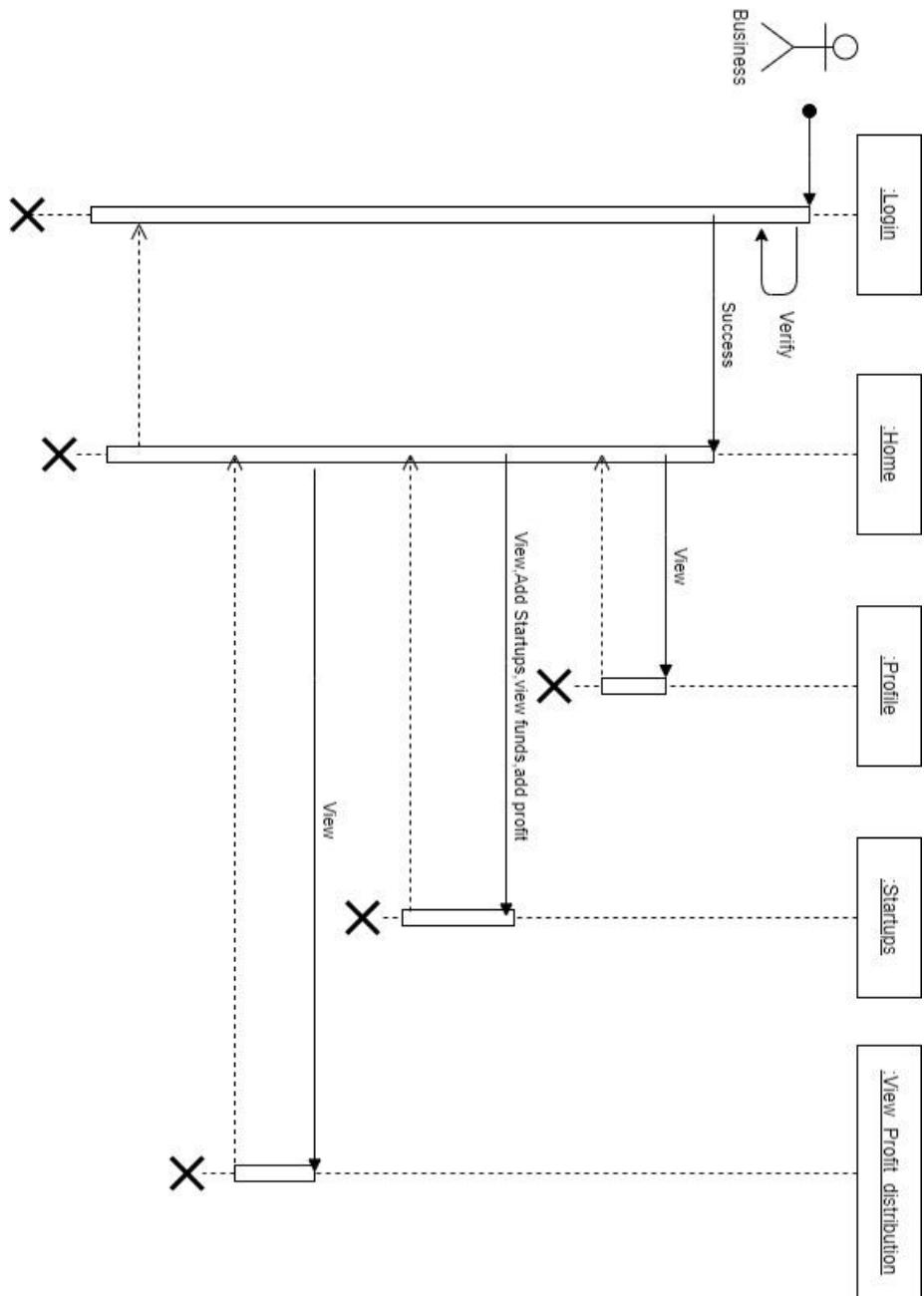
6.1.27 Can view spending

6.6 Sequence Diagram

Admin



User

Business

SYSTEM DEVELOPMENT

7. SYSTEM DEVELOPMENT

System development is series of operations to manipulate data to produce output from computer system. The principal activities performed during the development phase can be divided into two major related sequences.

- External system development
- Internal system development

The major external system activities are:

- Implementation
- Planning
- Equipment acquisition
- Installation

7.1 Coding

The purpose of code is to facilitate the identification and retrieval of items of information. A code is an ordered collection of symbols designed to provide unique identification of entity or an attribute. Code also show interrelationship among different items. Codes are used to identify, access, sort, matching records. The code ensures that only one value of code with a single meaning is applied to give entity or attribute as described in various ways.

PYTHON

Python is a multi-paradigm programming language. Object- oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented. Python uses dynamic typing, and a combination of reference counting and a cycle detecting garbage collector for memory management. It also features dynamic name resolution (late binding), which binds method and variable names during program execution.

Python is a multi-paradigm programming language. Object-oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented programming (including

meta programming and meta objects(magic methods). Many other paradigms are supported via extensions, including design by contract and logic programming.

Python uses dynamic typing and a combination of reference counting and a cycle-detecting garbage collector for memory management. It also features dynamic numeric solution(latebind-ing),which binds method and variable names during program execution.

JAVASCRIPT

JavaScript often abbreviated as JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for webpage behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on users' devices.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML(including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of content and presentation, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a

separate .css file, which reduces complexity and repetition in the structural content and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

HTML

The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It is often assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for its appearance.

BOOTSTRAP

Bootstrap is a popular open-source front-end framework that provides a collection of pre-built HTML, CSS, and JavaScript components for creating responsive and visually appealing web pages and web applications. It aims to simplify web development by offering a consistent set of design patterns, responsive grid system, and ready-to-use UI components.

Libraries

Python's large standard library, commonly cited as one of its greatest strengths, provides tools suited too many tasks. For Internet-facing applications, many standard formats and protocols such as MIME and HTTP are supported. It includes modules for creating graphical user interfaces, connecting to relational databases, generating pseudo random numbers, arithmetic with arbitrary precision decimals, manipulating regular expressions, and unit testing.

Flask

Flask is a web framework, it's a Python module that lets you develop web applications easily. It's having a small and easy-to-extend core: it's a micro framework that doesn't include an ORM (Object Relational Manager) or such features. It does have many cool features like URL routing, template engine. It is a WSGI web app framework

SQLyog

SQLyog is a powerful GUI tool to manage MySQL and MariaDB servers and databases in physical, virtual, and cloud environments. SQLyog is developed by Webyog Inc. SQLyog was available free of charge, but with closed source code, until v3.0 when it was made a fully commercial software. SQLyog's intuitive graphical user interface makes managing all aspects of your MySQL databases easy. Simple operations can be accomplished using the many pre-defined tools and functions while more complicated tasks can be built using the graphical editor which helpfully generates queries in correct SQL syntax to perform and learn from. SQLyog is able to handle databases of all sizes and can use SSH and HTTP tunneling to make remote access simple and secure. Data transfer from external ODBC-compliant databases is also easy using the in-built import tool.

Prominent features of SQLyog are:

- 64-bit binaries are available from version 11.0.
- Editor with syntax highlighting and various automatic formatting options
- Intelligent Code Completion
- Data manipulations (INSERT, UPDATE, DELETE) may be done from a spreadsheet-like interface. Both raw table data and a result set from a query can be manipulated.
- Visual Schema Designer
- Visual Query Builder
- Query Formatter

- Connectivity options: Direct client/server using MySQL API (SSL supported), HTTP/HTTPS tunneling, SSH tunneling
- Wizard-driven tool for import of data from ODBC-databases
- Backup Tool for performing unattended backups. Backups may be compressed and optionally stored as a file-per-table as well as identified with a timestamp.
- "SQL Scheduler and Reporting Tool" - a tool for scheduling and automating execution of any sequence of SQL statements. Result of queries may be sent as HTML-formatted reports.
- Schema/Structure Synchronization and Data Synchronization
- Query Profiler and Redundant Index Finder
- All automated jobs have mail alerting and reporting options.
- Full character set/Unicode support
- A "Data Search" feature using a Google-type search syntax translated transparently for user to SQL.
- Form view to display one row at a time
- Foreign key lookup
- Visual Data Compare

MYSQL

MySQL is an open-source relational database management system (RDBMS). The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL is offered under two different editions: the open source MySQL Community Server and the proprietary Enterprise Server. MySQL Enterprise Server is differentiated by a series of proprietary extensions which install as server plugins, but otherwise share the version numbering system and are built from the same code base.

BLOCKCHAIN

A blockchain is a growing list of records, called blocks, that are securely linked together using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data (generally represented as a Merkle tree, where data nodes are represented by leafs). The timestamp proves that the transaction data existed when the block was published to get into its hash. As blocks each contain information about the block previous to it, they form a chain, with each additional block reinforcing the ones before it. Therefore, blockchains are resistant to modification of their data because once recorded, the data in any given block cannot be altered retroactively without altering all subsequent blocks.

Blockchains are typically managed by a peer-to-peer network for use as a publicly distributed ledger, where nodes collectively adhere to a protocol to communicate and validate new blocks. Although blockchain records are not unalterable as forks are possible, blockchains may be considered secure by design and exemplify a distributed computing system with high Byzantine fault tolerance. The blockchain was popularized by a person (or group of people) using the name Satoshi Nakamoto in 2008 to serve as the public transaction ledger of the cryptocurrency bitcoin, based on work by Stuart Haber, W. Scott Stornetta, and Dave Bayer. The identity of Satoshi Nakamoto remains unknown to date. The implementation of the blockchain within bitcoin made it the first digital currency to solve the double-spending problem without the need of a trusted authority or central server. The bitcoin design has inspired other applications and blockchains that are readable by the public and are widely used by cryptocurrencies. The blockchain is considered a type of payment rail. A blockchain is a distributed database or ledger that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known for their crucial role in cryptocurrency systems, such as Bitcoin, for maintaining a secure and decentralized record of transactions. The innovation with a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party.

One key difference between a typical database and a blockchain is how the data is structured. A blockchain collects information together in groups, known as blocks, that hold sets of information. Blocks have certain storage capacities and,

when filled, are closed and linked to the previously filled block, forming a chain of data known as the blockchain. All new information that follows that freshly added block is compiled into a newly formed block that will then also be added to the chain once filled. A database usually structures its data into tables, whereas a blockchain, as its name implies, structures its data into chunks (blocks) that are strung together. This data structure inherently makes an irreversible timeline of data when implemented in a decentralized nature. When a block is filled, it is set in stone and becomes a part of this timeline. Each block in the chain is given an exact timestamp when it is added to the chain. Blockchain is a type of shared database that differs from a typical database in the way that it stores information; blockchains store data in blocks that are then linked together via cryptography. As new data comes in, it is entered into a fresh block. Once the block is filled with data, it is chained onto the previous block, which makes the data chained together in chronological order. Different types of information can be stored on a blockchain, but the most common use so far has been as a ledger for transactions. In Bitcoin's case, blockchain is used in a decentralized way so that no single person or group has control—rather, all users collectively retain control. Decentralized blockchains are immutable, which means that the data entered is irreversible. For Bitcoin, this means that transactions are permanently recorded and viewable to anyone.

Imagine that a company owns a server farm with 10,000 computers used to maintain a database holding all of its client's account information. This company owns a warehouse building that contains all of these computers under one roof and has full control of each of these computers and all of the information contained within them. This, however, provides a single point of failure.

What a blockchain does is to allow the data held in that database to be spread out among several network nodes at various locations. This not only creates redundancy but also maintains the fidelity of the data stored therein—if somebody tries to alter a record at one instance of the database, the other nodes would not be altered and thus would prevent a bad actor from doing so. If one user tampers with Bitcoin's record of transactions, all other nodes would cross-reference each other and easily pinpoint the node with the incorrect information. This system helps to establish an exact and transparent order of events. This way, no single node within the network can alter information held within it.

Because of this, the information and history (such as of transactions of a cryptocurrency) are irreversible. Such a record could be a list of transactions (such as with a cryptocurrency), but it also is possible for a blockchain to hold a variety of other information like legal contracts, state identifications, or a company's product inventory.

Let's say that a hacker, who also runs a node on a blockchain network, wants to alter a blockchain and steal cryptocurrency from everyone else. If they were to alter their own single copy, it would no longer align with everyone else's copy. When everyone else cross-references their copies against each other, they would see this one copy stand out, and that hacker's version of the chain would be cast away as illegitimate. Succeeding with such a hack would require that the hacker simultaneously control and alter 51% or more of the copies of the blockchain so that their new copy becomes the majority copy and, thus, the agreed-upon chain. Such an attack would also require an immense amount of money and resources, as they would need to redo all of the blocks because they would now have different timestamps and hash codes.

Due to the size of many cryptocurrency networks and how fast they are growing, the cost to pull off such a feat probably would be insurmountable. This would be not only extremely expensive but also likely fruitless. Doing such a thing would not go unnoticed, as network members would see such drastic alterations to the blockchain. The network members would then hard fork off to a new version of the chain that has not been affected. This would cause the attacked version of the token to plummet in value, making the attack ultimately pointless, as the bad actor has control of a worthless asset. The same would occur if the bad actor were to attack the new fork of Bitcoin. It is built this way so that taking part in the network is far more economically incentive than attacking it.

Blockchain technology was first outlined in 1991 by Stuart Haber and W. Scott Stornetta, two researchers who wanted to implement a system where document timestamps could not be tampered with. But it wasn't until almost two decades later, with the launch of Bitcoin in January 2009, that blockchain had its first real-world application.

The Bitcoin protocol is built on a blockchain. In a research paper introducing the digital currency, Bitcoin's pseudonymous creator, Satoshi Nakamoto, referred to it as "a new electronic cash system that's fully peer-to-peer, with no

trusted third party. The key thing to understand here is that Bitcoin merely uses blockchain as a means to transparently record a ledger of payments, but blockchain can, in theory, be used to immutably record any number of data points. As discussed above, this could be in the form of transactions, votes in an election, product inventories, state identifications, deeds to homes, and much more. Currently, tens of thousands of projects are

looking to implement blockchains in a variety of ways to help society other than just recording transactions—for example, as a way to vote securely in democratic elections. The nature of block chain's immutability means that fraudulent voting would become far more difficult to occur. For example, a voting system could work such that each citizen of a country would be issued a single cryptocurrency or token. Each candidate would then be given a specific wallet address, and the voters would send their token or crypto to the address of whichever candidate for whom they wish to vote. The transparent and traceable nature of blockchain would eliminate both the need for human vote counting and the ability of bad actors to tamper with physical ballots.

Benefits of Blockchain in Crowdfunding platform includes:

- Increased transparency and security: Transactions and investments are recorded on a decentralized and immutable ledger, which ensures transparency and prevents fraud.
- Lower transaction costs: Blockchain eliminates intermediaries, such as banks or crowdfunding platforms, which reduces transaction fees and time.
- Improved efficiency: Blockchain allows for automated smart contracts and streamlined processes, which increases efficiency and reduces human errors.
- Global reach: Blockchain-based crowdfunding platforms can be accessed from anywhere in the world, which increases the pool of potential investors and investments.

GANACHE

Ganache is part of the Truffle Suite ecosystem. Specifically, the Truffle Suite consists of Ganache and an additional pair of tools Truffle and Drizzle. Truffle is a development environment, asset pipeline, and testing framework using the EMV (Ethereum Virtual Machine) meanwhile, Drizzle is a collection of frontend libraries. On the other hand, Ganache is a high-end development tool used to run your

own local blockchain for both Ethereum and Corda dApp development. Ganache is helpful in all parts of the development process. The local chain allows you to develop, deploy and test your projects and smart contracts in a deterministic and safe environment. There are two different "versions" of Ganache, one desktop application, and one command-line tool. The desktop application is called Ganache UI, and it supports development for both Ethereum and Corda; meanwhile, the command-line tool is called ganache-CLI, which solely supports Ethereum development. Furthermore, all the different versions of Ganache are available for Mac, Windows, and Linux. Web3 development has never been more in vogue than now, with frantic activity in the Web3 and decentralized application (dApp) fields.

However, when developing dApps you might find that Web3 development is unnecessarily convoluted. This is partly due to the fact that Web3 development still has not evolved to the same extent as traditional Web2 development. This, by extension, is not particularly strange, since as the dApp scene remains somewhat in its infancy. However, Web3 development is still booming, and there are some useful tools and platforms to aid development. You will likely already know that Moralis provides the best blockchain middleware for dApp development, with an impressive suite of powerful features. Moralis should always be your go-to choice for building dApps – but you can supercharge your development by learning more about other Moralis-compatible tools, like Ganache. When developing dApps, it is highly beneficial to set up a local Ethereum blockchain where your dApps can be tested in a safe environment.

Furthermore, it's worth repeating that the easiest way to develop dApps, with or without Ganache, is through Moralis. Moralis is the premier middleware for Web3 development, and provides users with a fully managed, infinitely scalable backend infrastructure which solves the traditional hassle associated with building Web3 apps or dApps. Furthermore, Moralis has native support for Ganache. As this is the case, we will also walk you through connecting Ganache to Moralis. If you are interested in becoming a dApp developer, we recommend signing up with Moralis. Signing up is completely free, and you are provided with several valuable tools that will shorten your development process from months to only days.

As mentioned, Ganache allows you to set up your blockchain, which in turn provides a safe testing environment for your dApps and smart contracts. There

are two main reasons for utilizing Ganache, the first one is to save money, and the other one is to save time. When developing, we want to do things as cost-effective and efficient as possible – which will sound familiar to anyone using Moralis. Nevertheless, when uploading smart contracts to the Ethereum chain, we must always pay gas fees. This means that we need to pay a transaction fee for every smart contract that we want to test. This can become very costly, since the gas prices can be quite high and unpredictable. As this is the case, it is much more beneficial to test smart contracts on a local chain since we can avoid the fees. This means that we can wait to pay the transaction costs for deploying the contracts until they are flawless. Furthermore, we can also upload our work instantly with our local blockchain. It takes time to upload to both the main- and testnets of Ethereum, and it can be an issue when trying to develop at a rapid pace. This means that we need to wait for our contracts to deploy on the chain before testing them, which can be avoided with a local blockchain set up with Ganache.

Setting up your local blockchain with Ganache is relatively easy. The first thing that you need to do is to install Ganache. To download Ganache, all you need to do is visit their official website and hit the "Download" button. Once clicked, the download will start immediately, and all you need to do is install the application. When you have finalized the installation, you can set up your local blockchain with one simple click. All you need to do to get going is to hit the "QUICKSTART" button in the Ganache UI. Once clicked, the application will launch your own Ethereum blockchain. As soon

as the blockchain is up and running, you will see several different tabs at the top of the screen, such as "Accounts", "Blocks", "Transactions", etc., that you are free to explore.

SMART CONTRACT

A smart contract is a computer program or a transaction protocol which is intended to automatically execute, control or document legally relevant events and actions according to the terms of a contract or an agreement. The objectives of smart contracts are the reduction of need in trusted inter-mediators, arbitration and enforcement costs, fraud losses, as well as the reduction of malicious and accidental exceptions.

Smart contracts are simply programs stored on a blockchain that run when predetermined conditions are met. They typically are used to automate the execution of an agreement so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss. They can also automate a workflow, triggering the next action when conditions are met.

Vending machines are mentioned as the oldest piece of technology equivalent to smart contract implementation. 2014's white paper about the cryptocurrency Ethereum describes the Bitcoin protocol as a weak version of the smart contract concept as defined by computer scientist, lawyer and cryptographer Nick Szabo. Since Bitcoin, various cryptocurrencies support scripting languages which allow for more advanced smart contracts between untrusted parties. Smart contracts should be distinguished from smart legal contracts. The latter refers to a traditional natural language legally binding agreement which has certain terms expressed and implemented in machine-readable.

SYSTEM TESTING AND IMPLEMENTATION

8.SYSTEM TESTING AND IMPLEMENTATION

Testing is the vital to the success of the system. It makes a logical assumption that if all the parts of the system are correct, the goal will be successfully achieved in this project. It is the stage of implementation, which ensures that system works accurately and effectively before the live operation commences. It is a confirmation that all are correct and opportunity to show users that the system must be tested and show that the system will operate successfully and produce expected results under expected conditions. Software testing is a crucial element of software quality assurance and represents the unlimited review of specification, design and coding. Testing represents an interesting anomaly for the software. During the earlier definition and development phase, it was attempted to build the software from an abstract concept to implement. Testing is a set of activity that can be planned in advance and conducted. Systematically, this is aimed at ensuring that the system works accurately and efficiently before live operations commences.

8.1 Types of Testing

Different types of testing are:

- Unit testing
- Black box testing
- White box testing

Unit testing

Unit testing is a software testing technique that focuses on testing individual units or components of a software system in isolation. The purpose of unit testing is to ensure that each unit functions correctly and produces the expected outputs when provided with specific inputs. A unit can be a function, method, class, module, or any other discrete part of the software.

The benefits of unit testing include:

- Early detection of defects: Unit testing helps catch bugs and issues early in the development cycle, reducing the cost and effort required to fix them.
- Improved code quality: Unit tests serve as documentation and ensure that units

are designed with testability and modularity in mind, resulting in cleaner and more maintainable code.

- Regression prevention: By having a comprehensive suite of unit tests, developers can easily rerun the tests to ensure that any changes or modifications to the codebase do not introduce new bugs or regressions.

However, unit testing also has some limitations. It does not guarantee the absence of defects in the integrated system, as issues can arise when units interact with each other. Integration testing is necessary to validate the proper integration and interaction between units. Additionally, achieving complete code coverage can be challenging, especially in complex systems with conditional logic and exceptional cases.

Black box testing

Black box testing is a software testing technique where the tester examines and tests the software without having knowledge of its internal structure, implementation details, or code. The focus is on validating the functionality and behavior of the software based on the specified requirements or user expectations.

In black box testing, the software is treated as a "black box," where the tester interacts with the system through its input interfaces and examines the output or response generated by the system. The internal workings or logic of the software are not considered or known to the tester.

Black box testing provides several benefits, including:

- Independence from the internal structure of the software, allowing testers to focus on user perspectives and requirements.
- Early detection of defects and issues that users may encounter during real-world usage.
- Effective validation of the software's functionality without requiring knowledge of implementation details.
- Facilitation of test reusability, as test cases can be designed based on requirements and specifications rather than specific implementations.

However, black box testing also has limitations. It may not uncover certain defects that can only be detected through white box testing or code-level analysis. Additionally, the test coverage may not be exhaustive, and the quality of

testing depends on the tester's understanding of the requirements and the effectiveness of the test cases designed.

White box testing

White box testing is a software testing technique that focuses on examining and validating the internal structure, design, and code of the software. Testers have access to the internal components, implementation details, and source code, allowing them to assess the internal logic and behavior of the software.

White box testing offers several advantages, including:

- Deep understanding of the software's internal workings, allowing for precise identification of defects and potential improvements.
- Thorough coverage of the code, ensuring that all critical paths and conditions are tested.
- Early detection of defects and potential issues before the software reaches the production environment.
- Validation of design and architectural considerations, promoting robust and maintainable code.

However, white box testing also has limitations. It relies on the tester's knowledge of the internal structure, requiring expertise and understanding of programming languages and coding practices. Additionally, it may not fully simulate real-world user interactions or scenarios, and it may be time-consuming and resource-intensive, particularly for large and complex systems.

8.2 Implementation

Implementation is the stage of project, when theoretical design is turned in to a working system. The most crucial stage is achieving a successful system and confidence that the new system will work effectively. It involves careful planning, investigation of the manual system and the new system. Implementation means converting a new or revised system design into an operational one. The implementation includes all those activities that take place to convert from the old system to the new one.

There are several activities involved while implementing a project:

- Careful planning.

- Investigating the current system and its constraints on implementation.
- Design of methods to achieve the changeover.
- Training of the staff in the changeover procedure and evaluation of change over method.

Implementation is the final stage and it is an importance phase. The first task in implementation was the implementation planning, that is deciding on methods to be adopted. After the system was implemented successfully, training of the user was one of the most important sub tasks of the developer. For this purpose, the user or system manual were prepared and handled over to the user to operate the developed system. So, change over plays a vital role, which checks the developed tool for the following requirements, and then only the user accepted the developed tool. The changeover took place only when the system had been proved to the satisfaction of the system analysis and other implementation activities have been completed.

SYSTEM MAINTENANCE

9.SYSTEM MAINTENANCE

Maintenance is making adaptation of the software for external changes (requirements changes or enhancements) and internal changes (fixing bugs). When changes are made during the maintenance phase all preceding steps of the model must be revisited.

There are 3 types of maintenance:

- Corrective (Fixing bugs/errors)
- Adaptive (Updates due to environment changes)
- Perfective (Enhancements, requirements changes)

Maintenance is enigma of the system development. The definition of the software maintenance can be given describing four activities that are undertaken after the program is released for use. The maintenance activity occurs since it is unreasonable to assume that software testing will uncover all in a large system. The second activity that contributes the definition of maintenance occurs since rapid changes are encountered in every aspects of computing. The third activity involves recommendation for new capabilities, modification to the existing functions and general enhancements when the software is used. The fourth maintenance activity occurs when software is changed to improve future maintainability or reliability.

FUTURE ENHANCEMENT

10. FUTURE ENHANCEMENT

The proposed system currently uses only one cryptocurrency for investment. Integration with other popular cryptocurrencies such as Bitcoin can attract a wider range of investors. Additional security features such as multi-factor authentication and biometric verification can make the system more secure and prevent fraud. Integration of AI and machine learning algorithms can help to identify potential fraud, predict market trends, and improve investment decision-making.

CONCLUSION

11.CONCLUSION

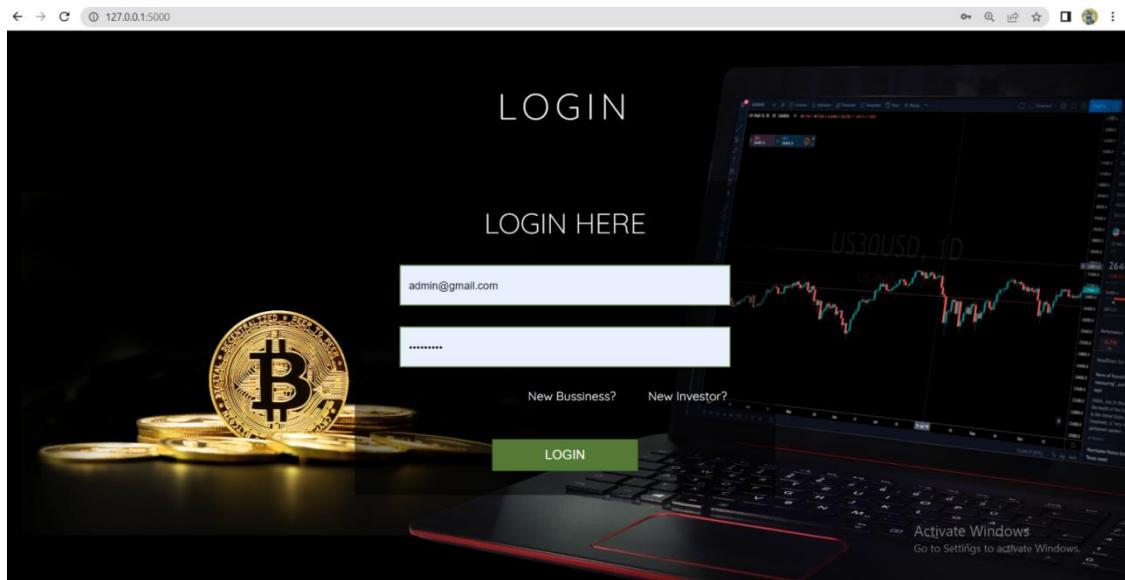
The project entitled “CROWDFUNDING” has been developed for reducing the stress and strain of traditional way of collecting funds. This system is more advanced than the existing system. The system is very user friendly, so the user with minimum knowledge about the computer is able to operate the system easily.

By utilizing the security and transparency of blockchain, this platform ensures that investors funds are secure and that they can easily track their investments. The use of smart contracts automates the process of investment making it faster, more reliable, and cost-effective. Additionally, the use of cryptocurrency as the means of investment and profit distribution provides an added layer of security and eliminates the need for intermediaries. Overall, the proposed system offers a promising solution for individuals and businesses looking for a secure and transparent way to raise funds and invest in innovative ideas. This platform could become a widely adopted solution for crowdfunding initiatives.

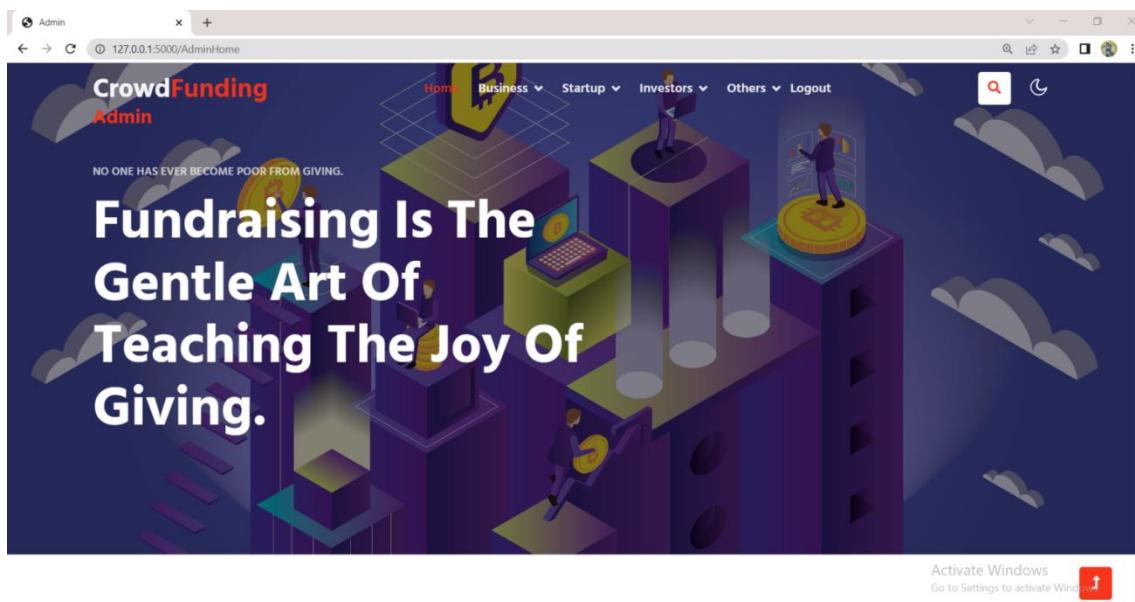
APPENDIX

12. APPENDIX

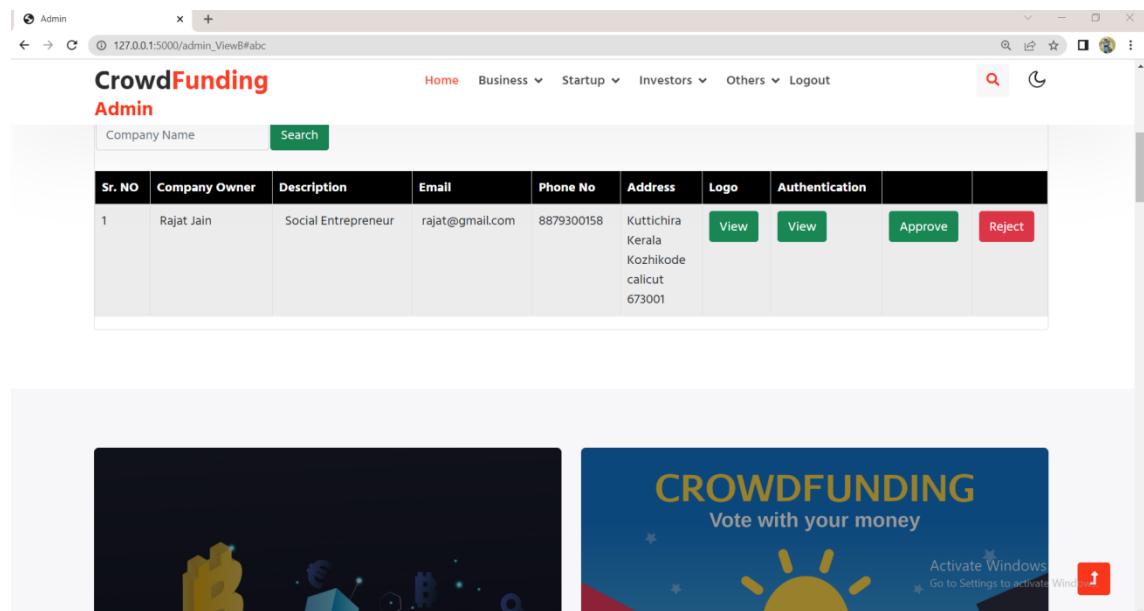
Login



Admin Home page



Admin View Business

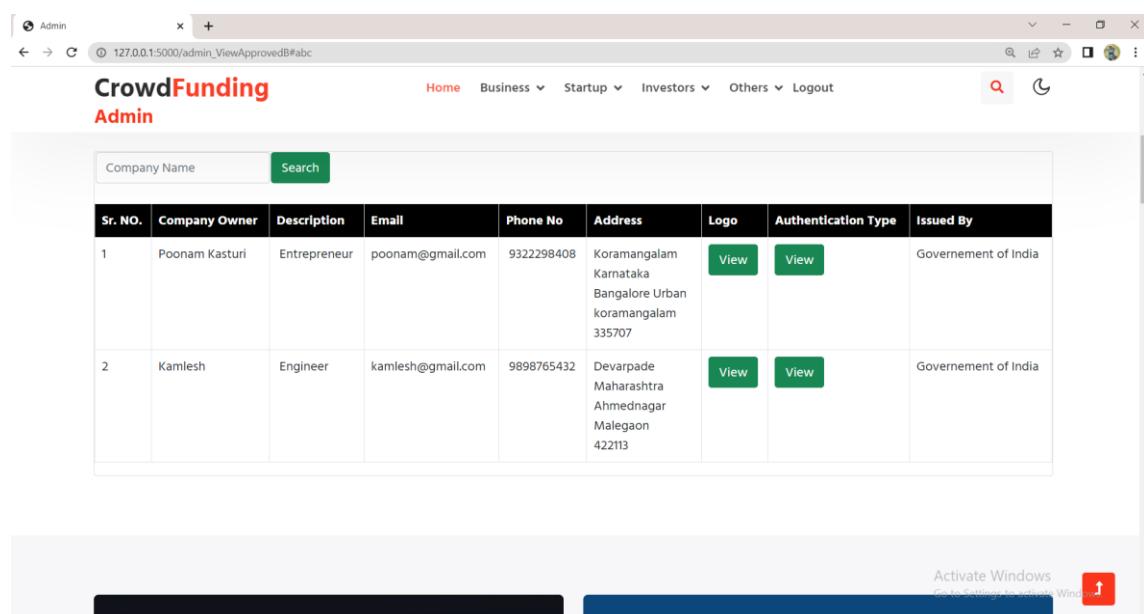


The screenshot shows a web browser window titled "Admin" with the URL "127.0.0.1:5000/admin_ViewB#abc". The page is titled "CrowdFunding Admin". A search bar at the top has "Company Name" and a "Search" button. Below it is a table with columns: Sr. NO, Company Owner, Description, Email, Phone No, Address, Logo, Authentication, and two buttons (Approve and Reject). One entry is shown:

Sr. NO	Company Owner	Description	Email	Phone No	Address	Logo	Authentication		
1	Rajat Jain	Social Entrepreneur	rajat@gmail.com	8879300158	Kuttichira Kerala Kozhikode calicut 673001	View	View	Approve	Reject

Below the table are two decorative banners: one with a dark background and abstract icons, and another with a blue background and the text "CROWDFUNDING Vote with your money".

Admin View Approved Business



The screenshot shows a web browser window titled "Admin" with the URL "127.0.0.1:5000/admin_ViewApprovedB#abc". The page is titled "CrowdFunding Admin". A search bar at the top has "Company Name" and a "Search" button. Below it is a table with columns: Sr. NO, Company Owner, Description, Email, Phone No, Address, Logo, Authentication Type, and Issued By. Two entries are shown:

Sr. NO.	Company Owner	Description	Email	Phone No	Address	Logo	Authentication Type	Issued By
1	Poonam Kasturi	Entrepreneur	poonam@gmail.com	9322298408	Koramangalam Karnataka Bangalore Urban koramangalam 335707	View	View	Governement of India
2	Kamlesh	Engineer	kamlesh@gmail.com	9898765432	Devarpade Maharashtra Ahmednagar Malegaon 422113	View	View	Governement of India

Below the table is a decorative banner with a dark background and a blue section at the bottom right containing the text "Activate Windows Go to Settings to activate Windows" and a Microsoft logo.

Admin View Rejected Business

The screenshot shows a web browser window titled "Admin" at the URL "127.0.0.1:5000/admin_ViewRejectedB#abc". The page has a header with "CrowdFunding Admin" and navigation links for Home, Business, Startup, Investors, Others, and Logout. Below the header is a search bar with "Company Name" and a "Search" button. A table header row includes columns for Sr. No., Company Owner, Description, Email, Phon No, Address, Logo, Authentication Type, and Issued By. Two rejected business banners are displayed below the table:

- Banner 1:** "Everything Will Be Tokenized And Connected By A Blockchain One Day." It features a large golden Bitcoin symbol and a blue hexagonal background.
- Banner 2:** "CROWDFUNDING Vote with your money Fundraisers Are The Catalysts Of Change." It features a yellow sun icon and hands holding a lightbulb.

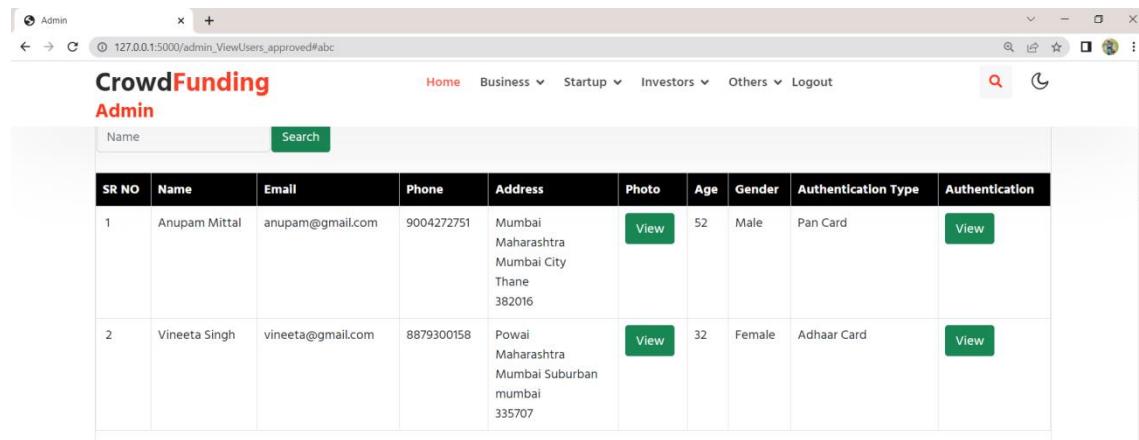
Admin View Investors

The screenshot shows a web browser window titled "Admin" at the URL "127.0.0.1:5000/admin_ViewUsers#abc". The page has a header with "CrowdFunding Admin" and navigation links for Home, Business, Startup, Investors, Others, and Logout. Below the header is a search bar with "Name" and a "Search" button. A table displays investor information:

SR NO	Name	Contact	Address	Age	Gender	Authentication	Photo		
1	Peyush Bansal	peyush@gmail.com 9167222716	Delhi Delhi North Delhi delhi 382016	38	Male	Pan Card View	View	Approve	Reject

Below the table are two banners: "Everything Will Be Tokenized And Connected By A Blockchain One Day." and "CROWDFUNDING Vote with your money Fundraisers Are The Catalysts Of Change."

Admin view Approved Investors



The screenshot shows a web browser window titled "Admin" with the URL "127.0.0.1:5000/admin_ViewUsers_approved#abc". The page header includes "CrowdFunding Admin" and navigation links for Home, Business, Startup, Investors, Others, and Logout. Below the header is a search bar with the placeholder "Name" and a "Search" button. A table lists two approved investors:

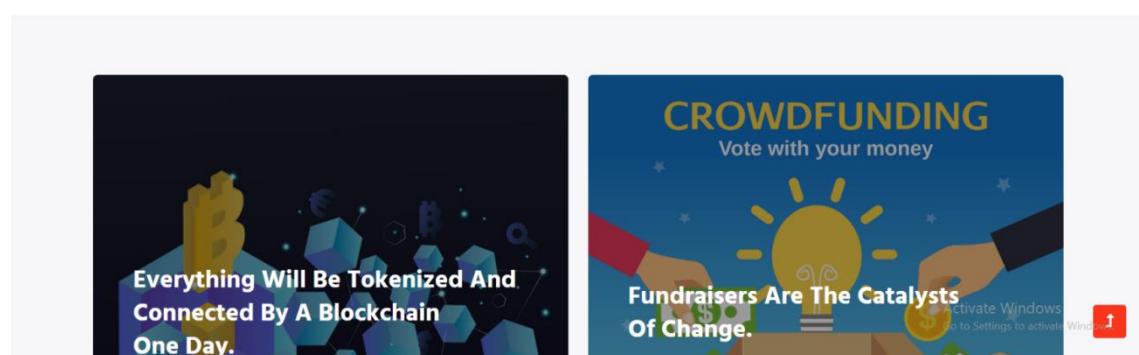
SR NO	Name	Email	Phone	Address	Photo	Age	Gender	Authentication Type	Authentication
1	Anupam Mittal	anupam@gmail.com	9004272751	Mumbai Maharashtra Mumbai City Thane 3B2016	<button>View</button>	52	Male	Pan Card	<button>View</button>
2	Vineeta Singh	vineeta@gmail.com	8879300158	Powai Maharashtra Mumbai Suburban mumbai 335707	<button>View</button>	32	Female	Adhaar Card	<button>View</button>



Admin View Rejected Investors



The screenshot shows a web browser window titled "Admin" with the URL "127.0.0.1:5000/admin_ViewUsers_rejected#abc". The page header includes "CrowdFunding Admin" and navigation links for Home, Business, Startup, Investors, Others, and Logout. Below the header is a search bar with the placeholder "Name" and a "Search" button. A table is present but currently empty.



Admin View Startup Requests

The screenshot shows a web browser window titled "Admin" with the URL "127.0.0.1:5000/admin_StartupRequest#abc". The page header includes "Home", "Business", "Startup", "Investors", "Others", and "Logout" links. A search bar labeled "Startup Name" with a "Search" button is present. Below the search bar is a table header with columns: Sno, Company name, Startup Name, Amount Raised, Profit Offered, Patent No, and Details.

Two promotional banners are displayed below the table:

- Banner 1:** "Everything Will Be Tokenized And Connected By A Blockchain One Day." It features a large yellow Bitcoin symbol and various digital currency icons.
- Banner 2:** "CROWDFUNDING Vote with your money". It features a hand holding a coin over a lightbulb, with the text "Fundraisers Are The Catalysts Of Change."

Admin View approved Startups

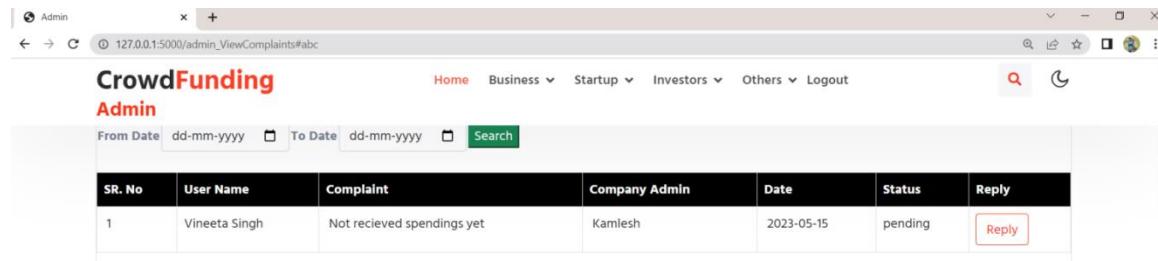
The screenshot shows a web browser window titled "Admin" with the URL "127.0.0.1:5000/admin_view_approved_StartupRequest#abc". The page header includes "Home", "Business", "Startup", "Investors", "Others", and "Logout" links. A search bar labeled "Startup Name" with a "Search" button is present. Below the search bar is a table header with columns: Sr. No, Company Owner, Startup Name, Details, Amount Required, Profit, and Video.

Sr. No	Company Owner	Startup Name	Details	Amount Required	Profit	Video
1	Poonam Kasturi	Daily Dump	View	4	30	View
2	Kamlesh	Jugaadu Kamlesh	View	5	25	View

Two promotional banners are displayed below the table:

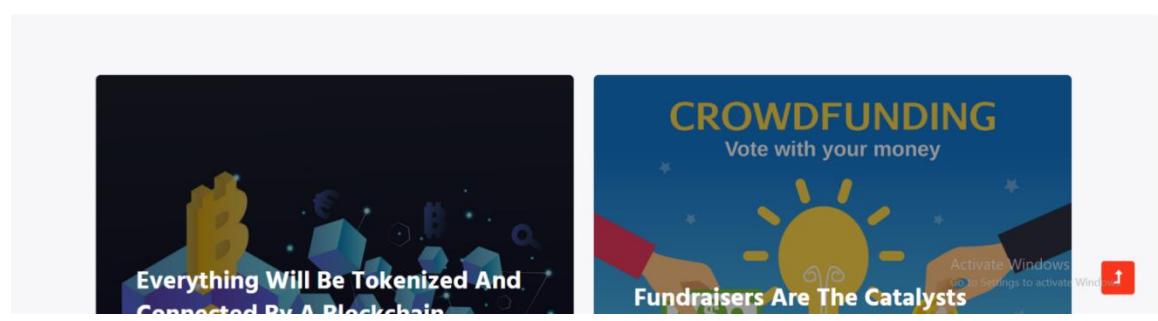
- Banner 1:** "Everything Will Be Tokenized And Connected By A Blockchain One Day." It features a large yellow Bitcoin symbol and various digital currency icons.
- Banner 2:** "CROWDFUNDING Vote with your money". It features a hand holding a coin over a lightbulb, with the text "Fundraisers Are The Catalysts Of Change."

Admin View Complaints

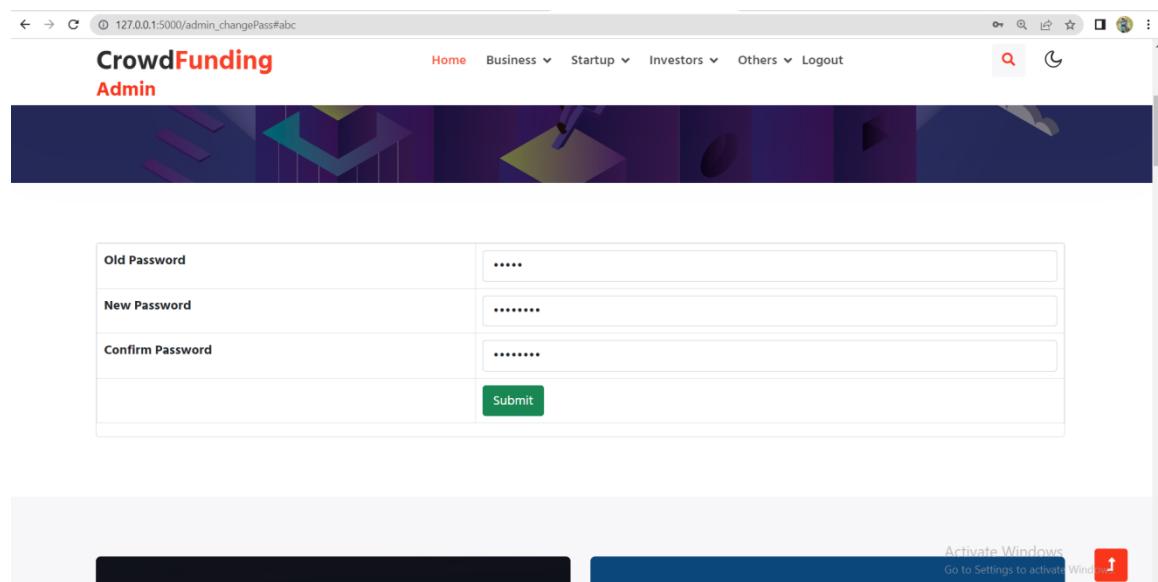


The screenshot shows a table with the following data:

SR. NO	User Name	Complaint	Company Admin	Date	Status	Reply
1	Vineeta Singh	Not received spendings yet	Kamlesh	2023-05-15	pending	<button>Reply</button>

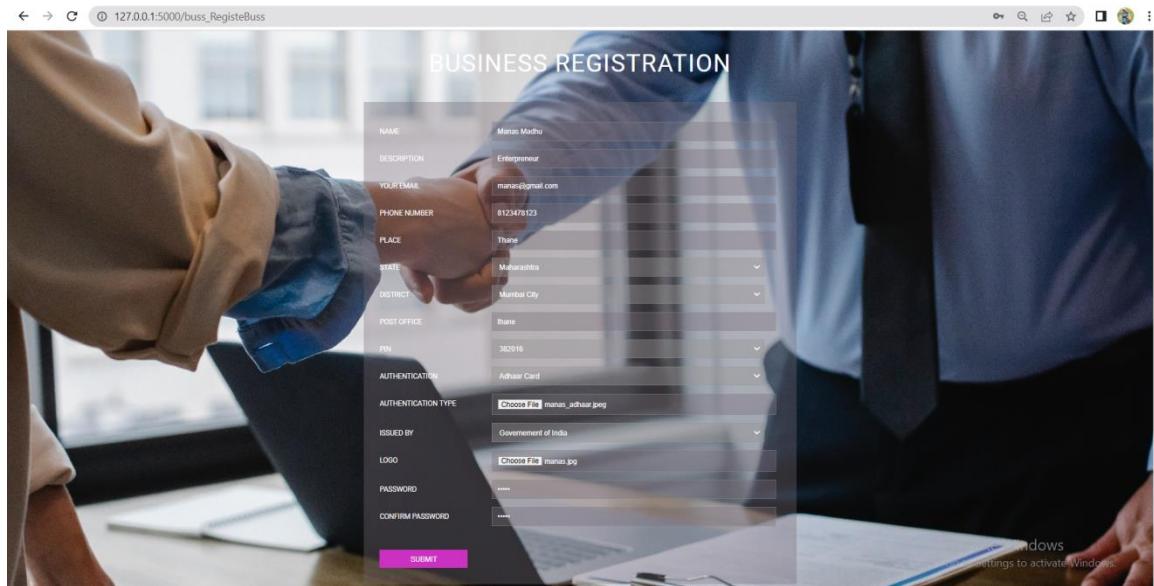


Admin Change Password



Old Password
New Password
Confirm Password
<input type="button" value="Submit"/>	

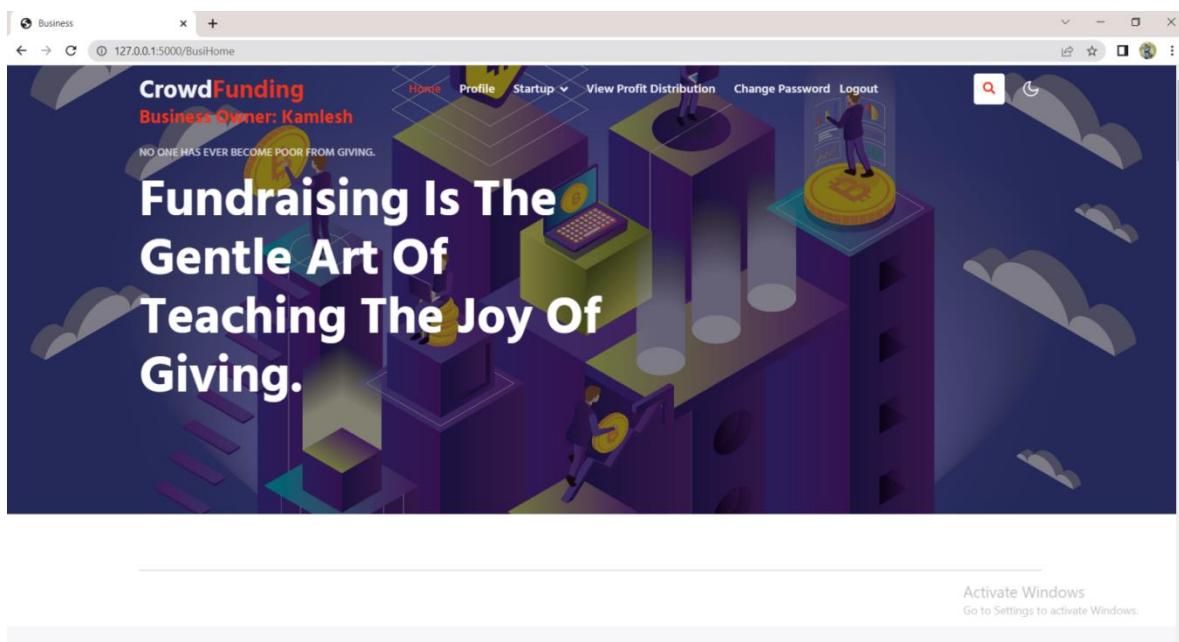
Business Registration



The screenshot shows a 'BUSINESS REGISTRATION' form overlaid on a background image of two business people shaking hands. The form contains fields for Name, Description, Your Email, Phone Number, Place, State, District, Post Office, PIN, Authentication, Authentication Type, Issued By, Logo, Password, and Confirm Password. A 'SUBMIT' button is at the bottom.

NAME	Manas Madhu
DESCRIPTION	Entrepreneur
YOUR EMAIL	manas@gmail.com
PHONE NUMBER	9123456789
PLACE	Thane
STATE	Maharashtra
DISTRICT	Mumbai City
POST OFFICE	Thane
PIN	400601
AUTHENTICATION	Adhaar Card
AUTHENTICATION TYPE	Choose File manas_adhaar.jpg
ISSUED BY	Government of India
LOGO	Choose File manas.jpg
PASSWORD	*****
CONFIRM PASSWORD	*****

Business Home



The screenshot shows the 'Business Home' page for 'CrowdFunding'. The top navigation bar includes links for Home, Profile, Startup, View Profit Distribution, Change Password, and Logout. The main banner features a quote: 'Fundraising Is The Gentle Art Of Teaching The Joy Of Giving.' Below the banner, there's a large call-to-action button labeled 'Start Fundraising'.

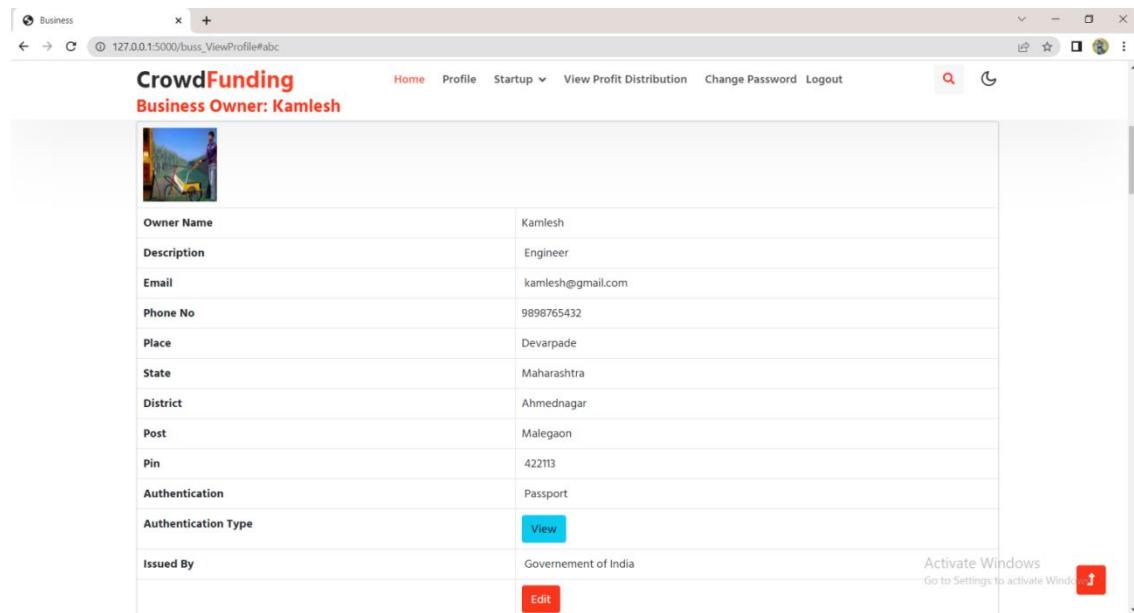
CrowdFunding
Business Owner: Kamlesh
NO ONE HAS EVER BECOME POOR FROM GIVING.

Fundraising Is The Gentle Art Of Teaching The Joy Of Giving.

Start Fundraising

Activate Windows
Go to Settings to activate Windows.

Business Profile

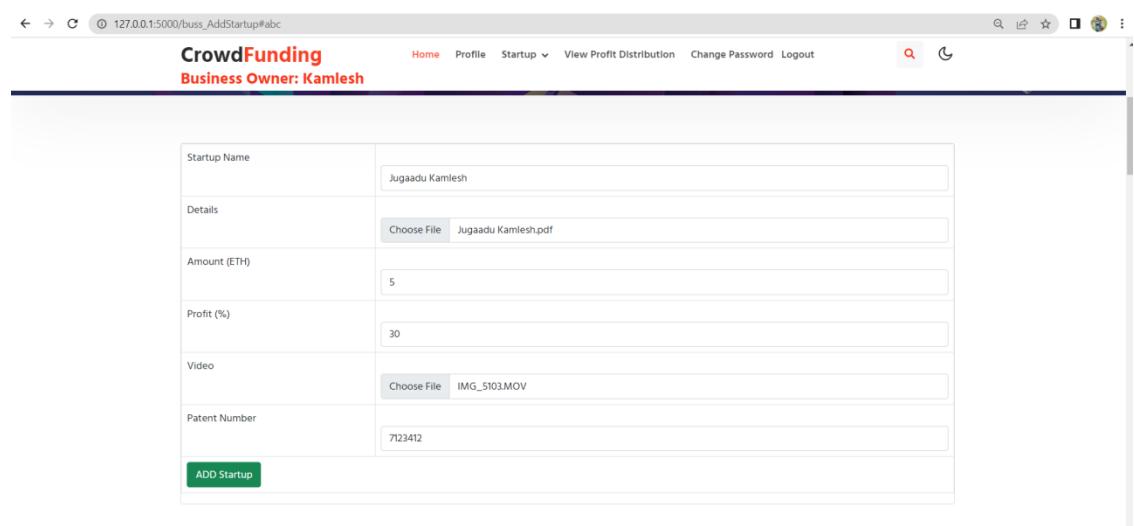


The screenshot shows a web browser window for a 'Business' profile. The title bar says 'Business'. The address bar shows '127.0.0.1:5000/buss_ViewProfile#abc'. The main content area has a header 'CrowdFunding' and 'Business Owner: Kamlesh'. Below is a table with the following data:

Owner Name	Kamlesh
Description	Engineer
Email	kamlesh@gmail.com
Phone No	9898765432
Place	Devarpade
State	Maharashtra
District	Ahmednagar
Post	Malegaon
Pin	422113
Authentication	Passport
Authentication Type	View
Issued By	Government of India
Edit	

On the right, there's a 'Activate Windows' message: 'Go to Settings to activate Windows' with a red 'Get Started' button.

Business Add Startup



The screenshot shows a web browser window for 'Business Add Startup'. The address bar shows '127.0.0.1:5000/buss_AddStartup#abc'. The main content area has a header 'CrowdFunding' and 'Business Owner: Kamlesh'. Below is a form with the following fields:

Startup Name	Jugaadu Kamlesh
Details	<input type="button" value="Choose File"/> Jugaadu Kamlesh.pdf
Amount (ETH)	5
Profit (%)	30
Video	<input type="button" value="Choose File"/> IMG_5103.MOV
Patent Number	7123412
ADD Startup	

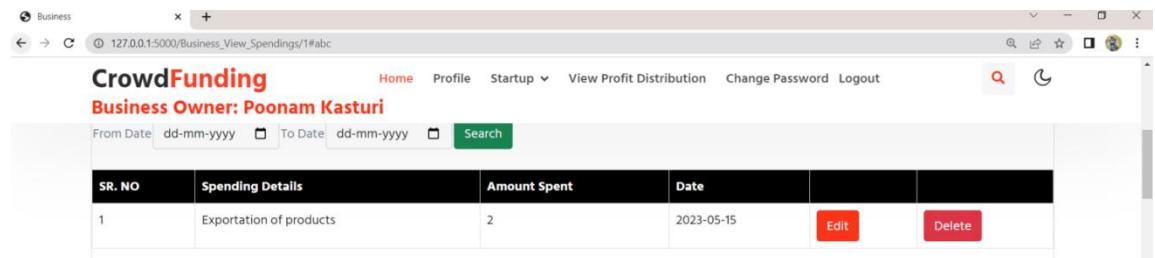
Business View Startup

The screenshot shows a web application interface for managing startups. At the top, there's a navigation bar with links for Home, Profile, Startup, View Profit Distribution, Change Password, and Logout. Below the navigation is a search bar labeled "Startup Name" and a "Search" button. The main content area features a table with columns: SR NO., Startup Name, Amount, Profit, Details, Expenses, Request & Funds, and a black header row. One row is visible, showing "1" in the SR NO. column, "Jugaadu Kamlesh" in the Startup Name column, "5" in the Amount column, and "25" in the Profit column. Under the "Details" column, there are "Video" and "Details" buttons. Under "Expenses", there are "Add", "Requests", "View", and "Funds" buttons. A red "Delete" button is in the "Request & Funds" column. Below the table is a "Edit Startup" button. To the right of the table is a sidebar with a dark background featuring a yellow dollar sign icon and some small icons. The sidebar has the text "CROWDFUNDING" and "Vote with your money". At the bottom right of the sidebar, there's a "Activate Windows" link.

Startup Add Expenses

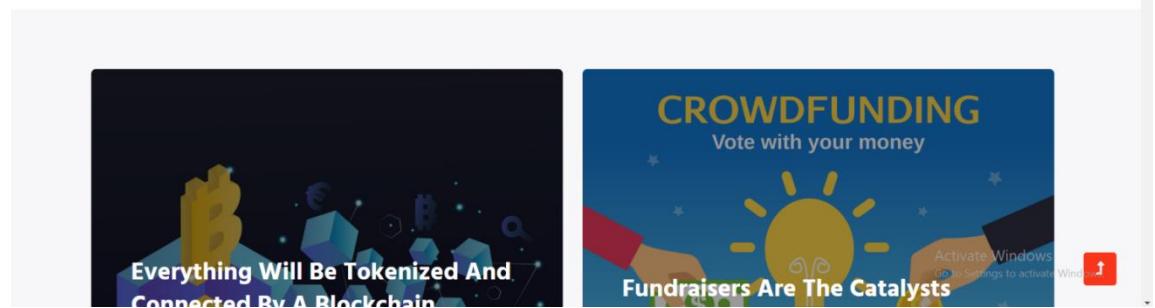
The screenshot shows a form for adding expenses. The title bar includes the "CrowdFunding" logo and "Business Owner: Kamlesh". The form has two input fields: "Spending Details" containing "transport" and "Amount Spent" containing "2". A green "Submit" button is at the bottom. To the left of the form is a dark banner with the text "Everything Will Be Tokenized And Connected By A Blockchain". To the right is a "CROWDFUNDING" banner with the subtext "Fundraisers Are The Catalysts Of Change". Both banners feature a yellow lightbulb icon.

Startup View Expenses

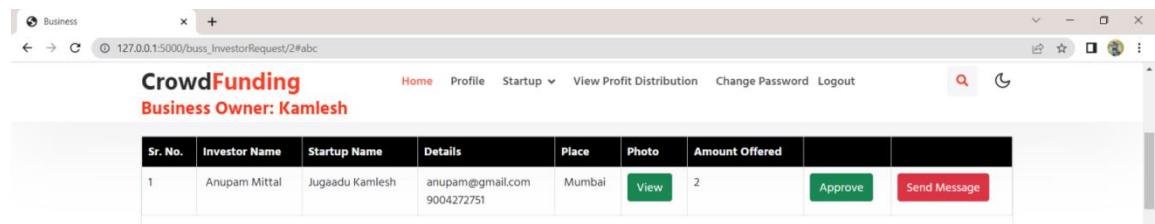


CrowdFunding
Business Owner: Poonam Kasturi

SR. NO	Spending Details	Amount Spent	Date		
1	Exportation of products	2	2023-05-15	Edit	Delete

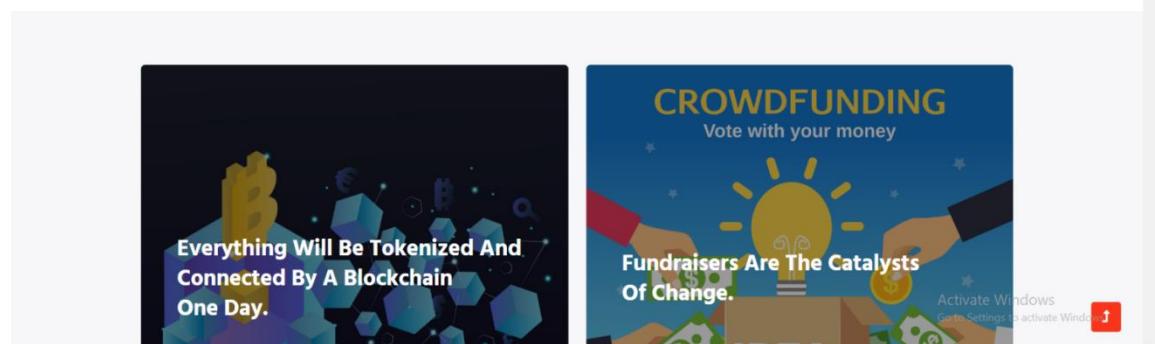


Startup Investor Fund Requests

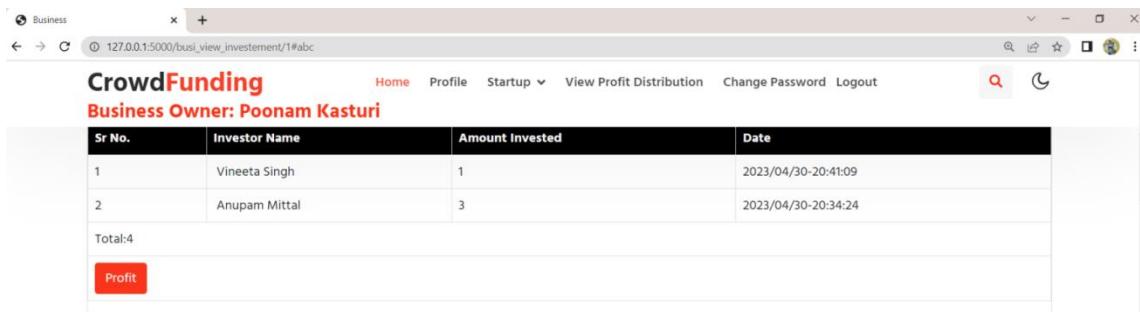


CrowdFunding
Business Owner: Kamlesh

Sr. No.	Investor Name	Startup Name	Details	Place	Photo	Amount Offered		
1	Anupam Mittal	Jugaadu Kamlesh	anupam@gmail.com 9004272751	Mumbai	View	2	Approve	Send Message



Investors Funds and add profit

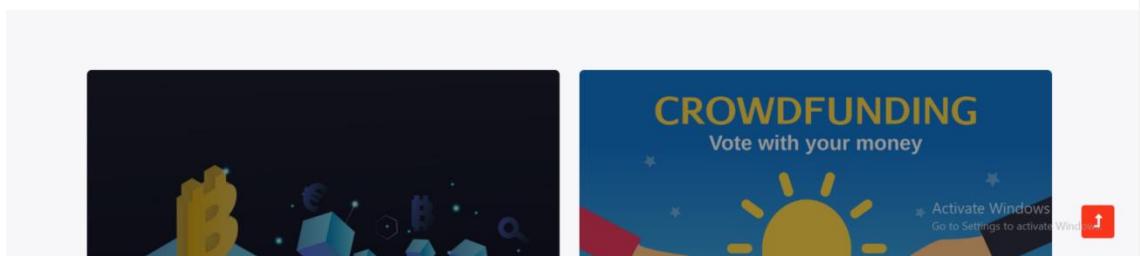


The screenshot shows a web browser window for 'Business' at address 127.0.0.1:5000/bus_view_investement/1#abc. The page title is 'CrowdFunding' and the business owner is 'Poonam Kasturi'. The main content is a table showing two investors:

Sr No.	Investor Name	Amount Invested	Date
1	Vineeta Singh	1	2023/04/30-20:41:09
2	Anupam Mittal	3	2023/04/30-20:34:24

Total:4

Profit

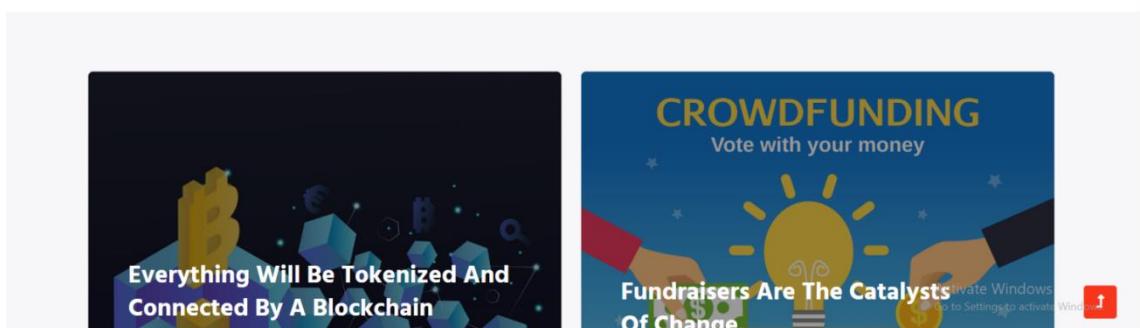


Business View Profit Distribution



The screenshot shows a web browser window for 'Business' at address 127.0.0.1:5000/view_profit_distribution#abc. The page title is 'CrowdFunding' and the business owner is 'Poonam Kasturi'. The main content is a table showing profit distribution:

Startup Name	User Name	Amount
Daily Dump	Anupam Mittal	11.25
Daily Dump	Vineeta Singh	3.75



Business Change Password

CrowdFunding
Business Owner: Kamlesh

Old Password

New Password

Confirm Password

Submit

Investor Registration

INVESTOR REGISTRATION

NAME: Anupam Mittal

YOUR EMAIL: anupam@gmail.com

PHONE NUMBER: 9004272751

PLACE: Mumbai

STATE: Maharashtra

DISTRICT: Mumbai City

POST OFFICE: Thane

PIN: 431022

PHOTO: Choose File Anupam_mittal.jpg

AGE: 62

GENDER: Male

AUTHENTICATION TYPE: Pan Card

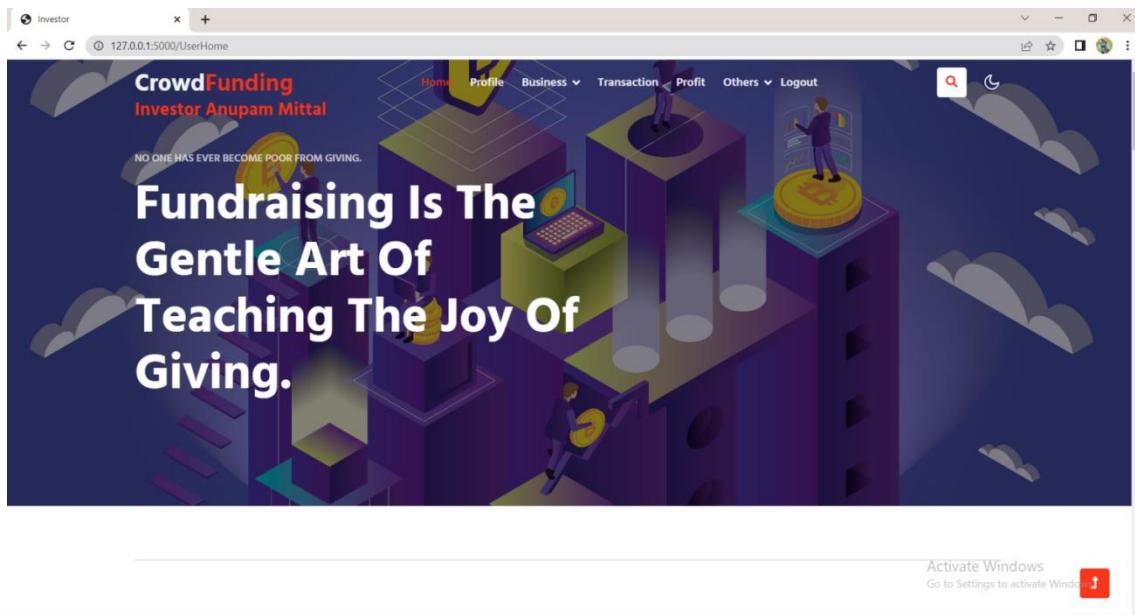
AUTHENTICATION: Choose File Anupam_pancard.jpg

PASSWORD:

CONFIRM PASSWORD:

SUBMIT

Investor Home



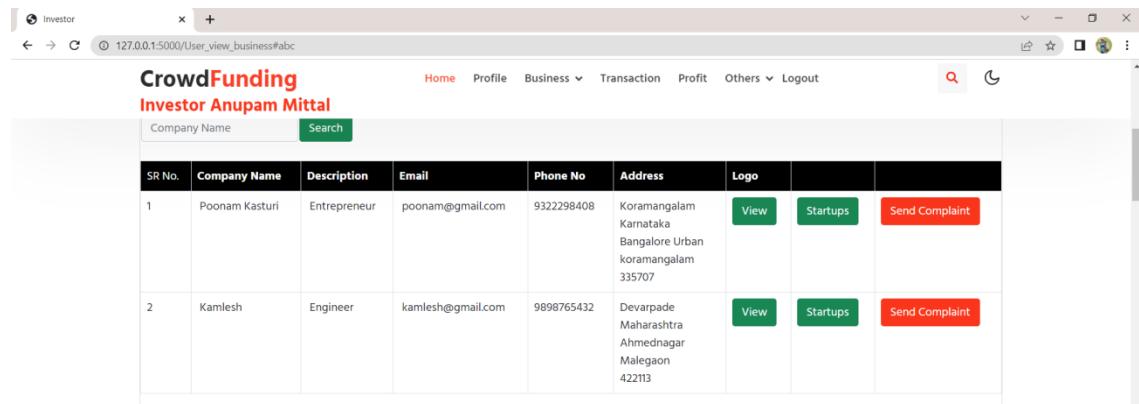
Investor Profile

A screenshot of a web browser showing the 'Investor Profile' page. The title bar says 'Investor' and the address bar shows '127.0.0.1:5000/user_view_profile#abc'. The main content displays a profile for 'Investor Anupam Mittal' with a small thumbnail photo. Below the photo is a table with the following data:

Name	Anupam Mittal
Email	anupam@gmail.com
Phone No	9004272751
Place	Mumbai
State	Maharashtra
District	Mumbai City
Post	Thane
Pin	382016
Age	52
Gender	Male
Authentication Type	Pan Card
Authentication	View
	Edit

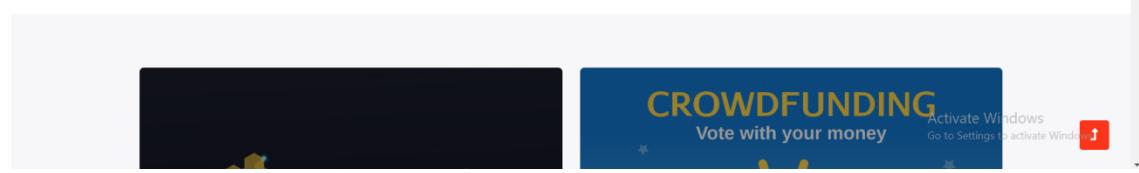
Activate Windows
Go to Settings to activate Windows

Investor View Business

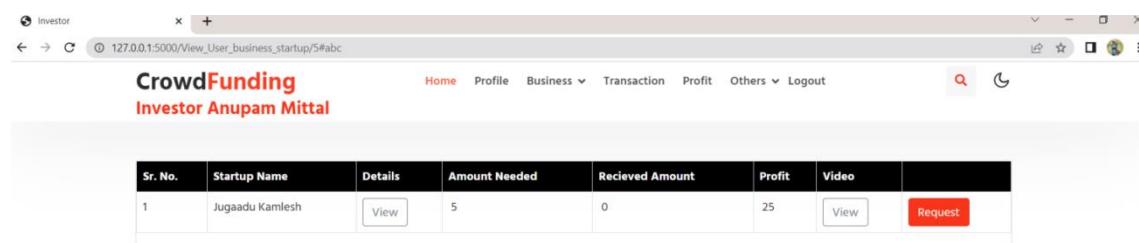


The screenshot shows a web browser window titled "Investor" displaying a list of businesses. The title bar includes the URL "127.0.0.1:5000/User_view_business#abc". The page header features the "CrowdFunding" logo and the user's name "Investor Anupam Mittal". A navigation menu at the top right includes links for Home, Profile, Business, Transaction, Profit, Others, and Logout. Below the menu is a search bar with a "Search" button. The main content area is a table with the following columns: SR No., Company Name, Description, Email, Phone No, Address, Logo, View, Startups, and Send Complaint. Two rows of data are listed:

SR No.	Company Name	Description	Email	Phone No	Address	Logo	View	Startups	Send Complaint
1	Poonam Kasturi	Entrepreneur	poonam@gmail.com	9322298408	Koramangalam Karnataka Bangalore Urban koramangalam 335707		View	Startups	Send Complaint
2	Kamlesh	Engineer	kamlesh@gmail.com	9898765432	Devarpade Maharashtra Ahmednagar Malegaon 422113		View	Startups	Send Complaint

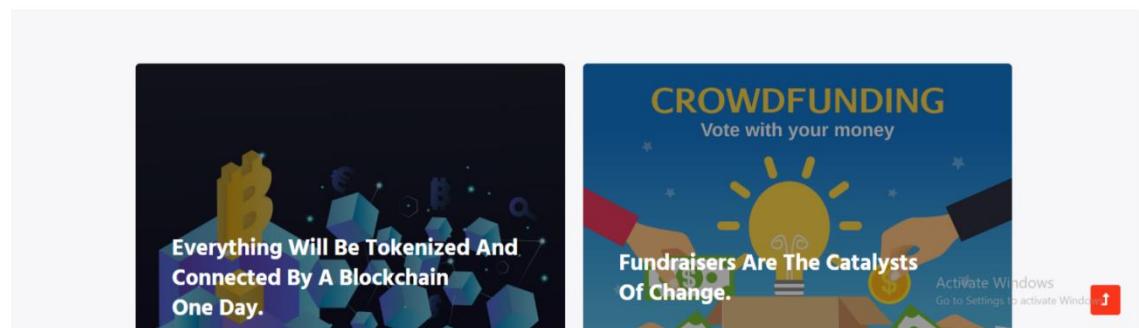


Investor View Startups

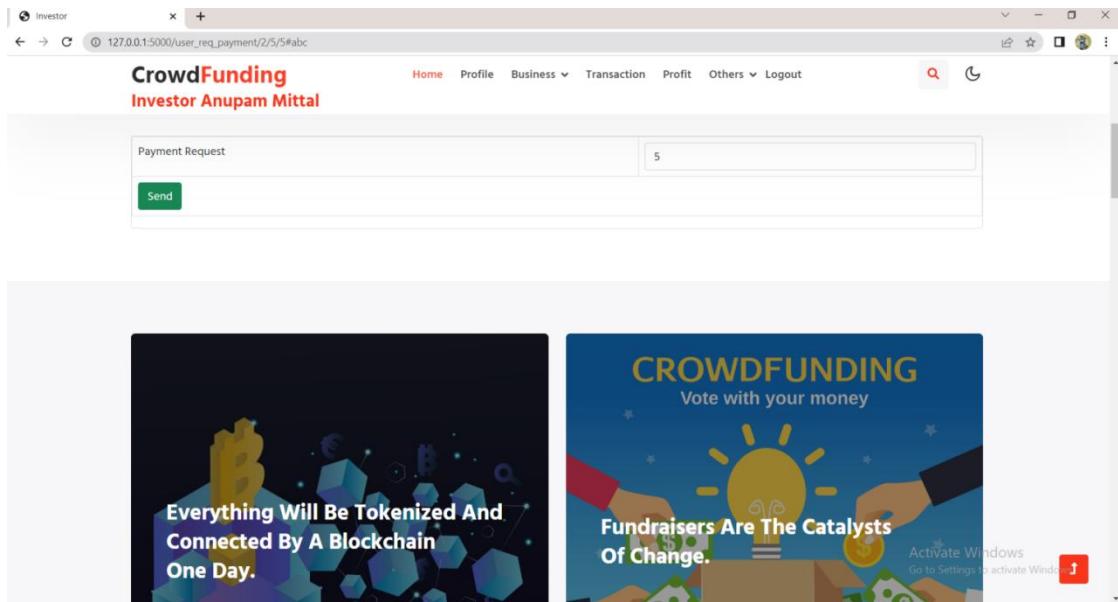


The screenshot shows a web browser window titled "Investor" displaying a startup profile. The title bar includes the URL "127.0.0.1:5000/View_User_business_startup/5#abc". The page header features the "CrowdFunding" logo and the user's name "Investor Anupam Mittal". A navigation menu at the top right includes links for Home, Profile, Business, Transaction, Profit, Others, and Logout. Below the menu is a search bar with a "Search" button. The main content area is a table with the following columns: Sr. No., Startup Name, Details, Amount Needed, Received Amount, Profit, Video, and Request. One row of data is listed:

Sr. No.	Startup Name	Details	Amount Needed	Received Amount	Profit	Video	Request
1	Jugaadu Kamlesh	View	5	0	25	View	Request



Investor send Request



The screenshot shows a web browser window titled 'Investor' with the URL '127.0.0.1:5000/user_req_payment/2/5/5#abc'. The page header includes 'Home', 'Profile', 'Business', 'Transaction', 'Profit', 'Others', and 'Logout'. Below the header, there's a search bar and a link to 'CrowdFunding Investor Anupam Mittal'. The main content area is titled 'Payment Request' and contains a text input field with the value '5' and a green 'Send' button.

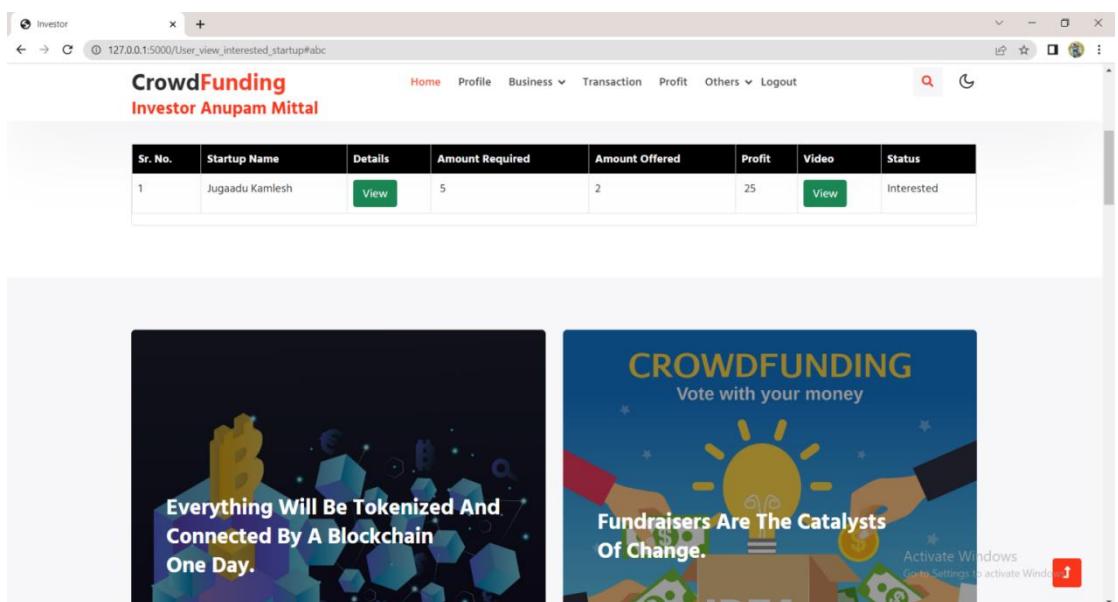


**Everything Will Be Tokenized And
Connected By A Blockchain
One Day.**



CROWDFUNDING
Vote with your money
**Fundraisers Are The Catalysts
Of Change.**

Investor View Interested Business and send payment



The screenshot shows a web browser window titled 'Investor' with the URL '127.0.0.1:5000/User_view_interested_startup#abc'. The page header is identical to the previous screenshot. The main content area displays a table with one row of data:

Sr. No.	Startup Name	Details	Amount Required	Amount Offered	Profit	Video	Status
1	Jugaadu Kamlesh	View	5	2	25	View	Interested

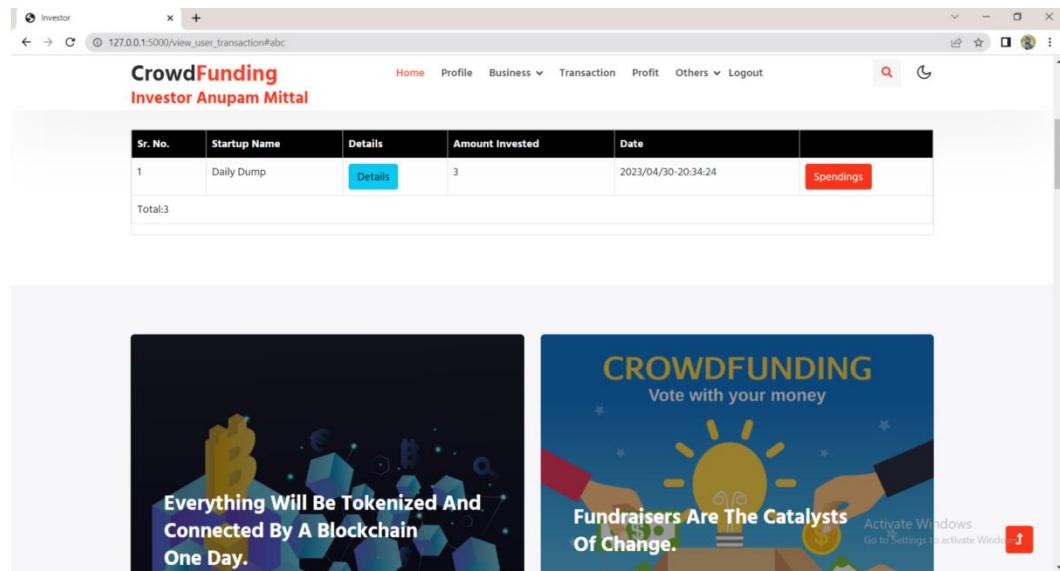


**Everything Will Be Tokenized And
Connected By A Blockchain
One Day.**



CROWDFUNDING
Vote with your money
**Fundraisers Are The Catalysts
Of Change.**

Investor View Own Transaction



The screenshot shows a web browser window titled "Investor" with the URL "127.0.0.1:5000/view_user_transaction#abc". The page header includes "CrowdFunding" and "Investor Anupam Mittal". The main content is a table with the following data:

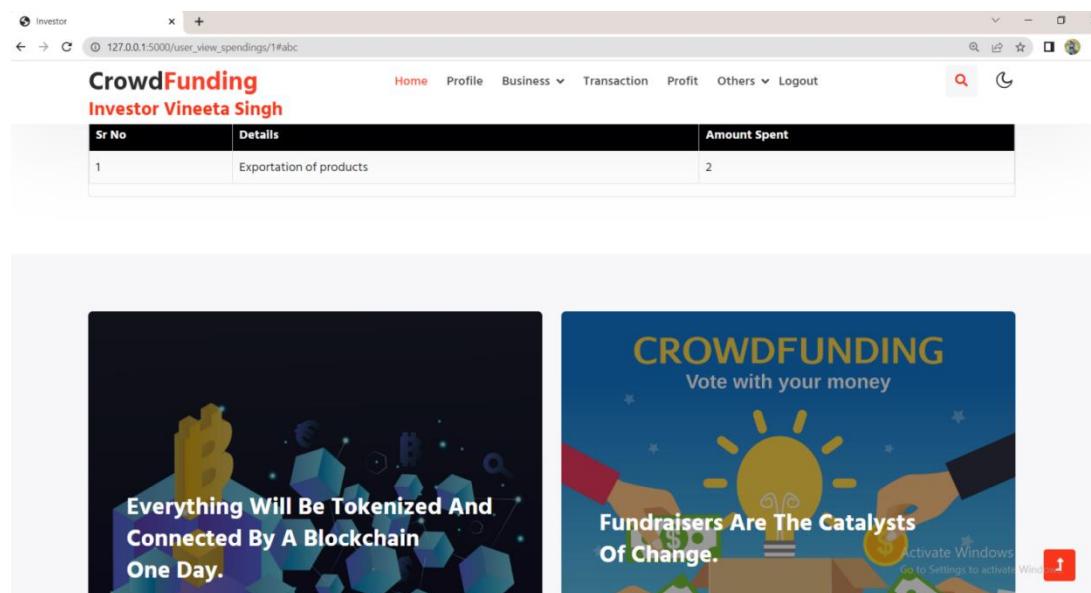
Sr. No.	Startup Name	Details	Amount Invested	Date	
1	Daily Dump	Details	3	2023/04/30-20:34:24	Spendings

Total:3

Below the table, there are two promotional banners:

- Left Banner:** "Everything Will Be Tokenized And Connected By A Blockchain One Day." featuring a large yellow Bitcoin symbol.
- Right Banner:** "CROWDFUNDING Vote with your money" featuring hands reaching towards a sun-like lightbulb.

Investor View Expenses



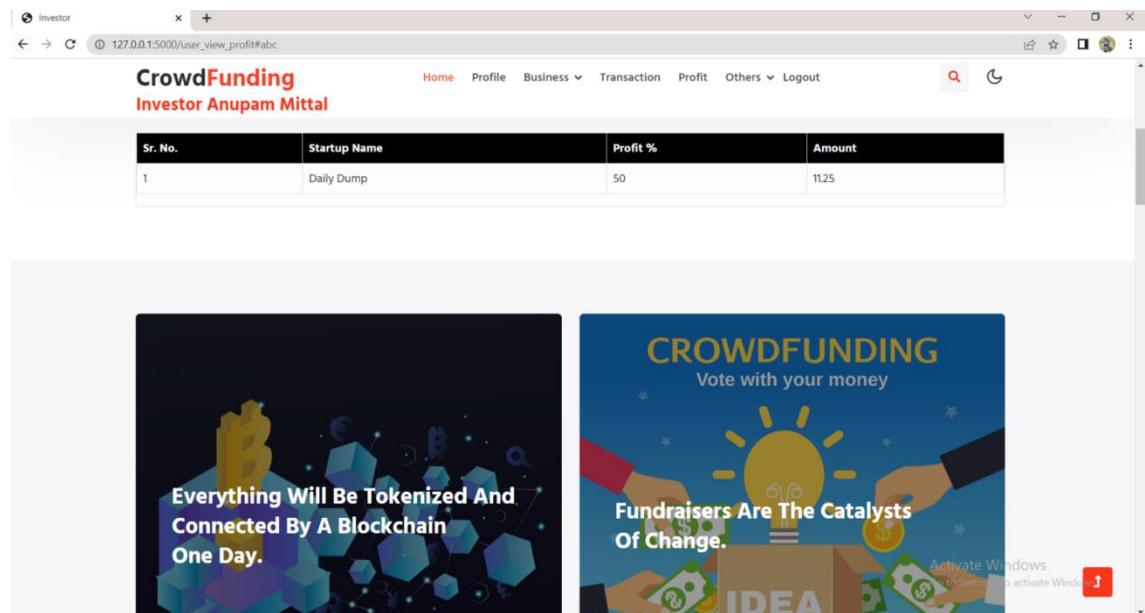
The screenshot shows a web browser window titled "Investor" with the URL "127.0.0.1:5000/user_view_spending/1#abc". The page header includes "CrowdFunding" and "Investor Vineeta Singh". The main content is a table with the following data:

Sr No	Details	Amount Spent
1	Exportation of products	2

Below the table, there are two promotional banners:

- Left Banner:** "Everything Will Be Tokenized And Connected By A Blockchain One Day." featuring a large yellow Bitcoin symbol.
- Right Banner:** "CROWDFUNDING Vote with your money" featuring hands reaching towards a sun-like lightbulb.

Investor received profit amount



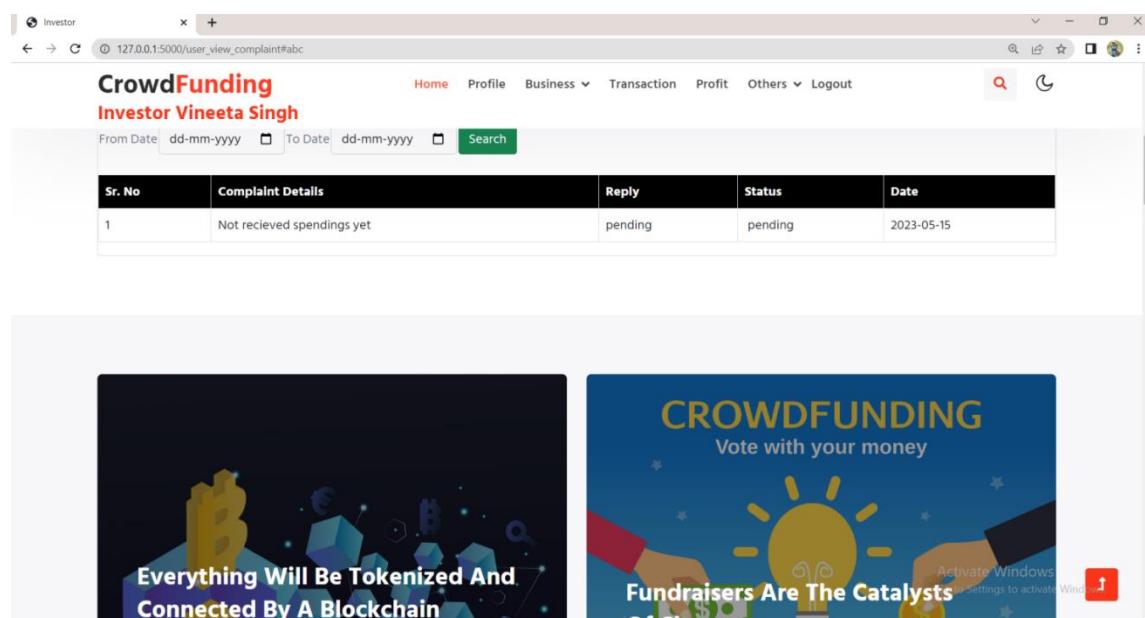
The screenshot shows a web browser window for the 'Investor' section of the CrowdFunding platform. The URL is 127.0.0.1:5000/user_view_profit#abc. The page title is 'Investor Anupam Mittal'. The main content is a table with the following data:

Sr. No.	Startup Name	Profit %	Amount
1	Daily Dump	50	11.25

Below the table are two promotional banners:

- Banner 1:** Everything Will Be Tokenized And Connected By A Blockchain One Day. It features a large golden Bitcoin symbol and various digital currency icons.
- Banner 2:** CROWDFUNDING Vote with your money. Fundraisers Are The Catalysts Of Change. It features a hand holding a lightbulb over a box labeled 'IDEA'.

Investor View Complaint



The screenshot shows a web browser window for the 'Investor' section of the CrowdFunding platform. The URL is 127.0.0.1:5000/user_view_complaint#abc. The page title is 'Investor Vineeta Singh'. The main content includes a search bar with 'From Date dd-mm-yyyy' and 'To Date dd-mm-yyyy' fields, and a 'Search' button. Below the search bar is a table with the following data:

Sr. No	Complaint Details	Reply	Status	Date
1	Not received spendings yet	pending	pending	2023-05-15

Below the table are two promotional banners:

- Banner 1:** Everything Will Be Tokenized And Connected By A Blockchain. It features a large golden Bitcoin symbol and various digital currency icons.
- Banner 2:** CROWDFUNDING Vote with your money. Fundraisers Are The Catalysts Of Change. It features a hand holding a lightbulb over a box labeled 'IDEA'.

Investor Change Password

The screenshot shows a web browser window with the URL `127.0.0.1:5000/user_changePass#abc`. The page title is "CrowdFunding" and the subtitle is "Investor Anupam Mittal". The main content is a form for changing a password, with fields for Old Password, New Password, and Confirm Password, each containing several dots as placeholders. A green "Submit" button is at the bottom left of the form. The browser's navigation bar includes back, forward, and search icons. The status bar at the bottom right shows "Activate Windows" and a red "UPGRADE" button.

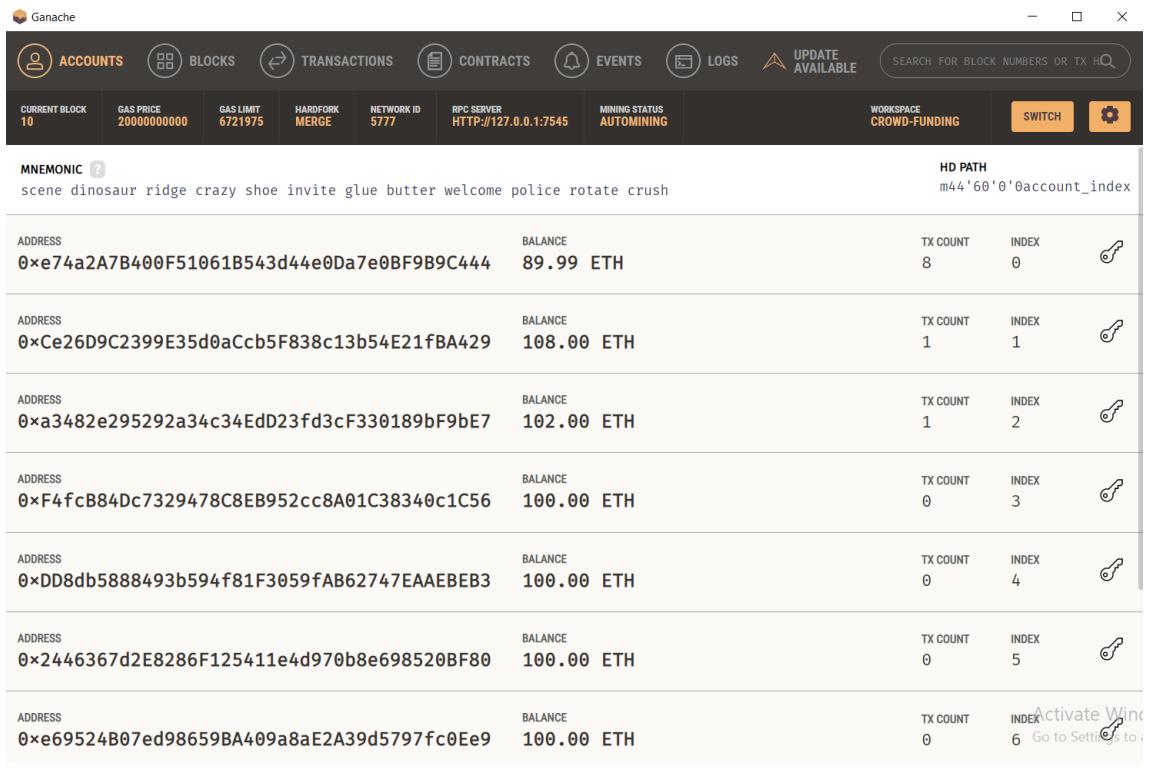
Old Password
New Password
Confirm Password

Submit

Ganache(Blockchain)

13. GANACHE

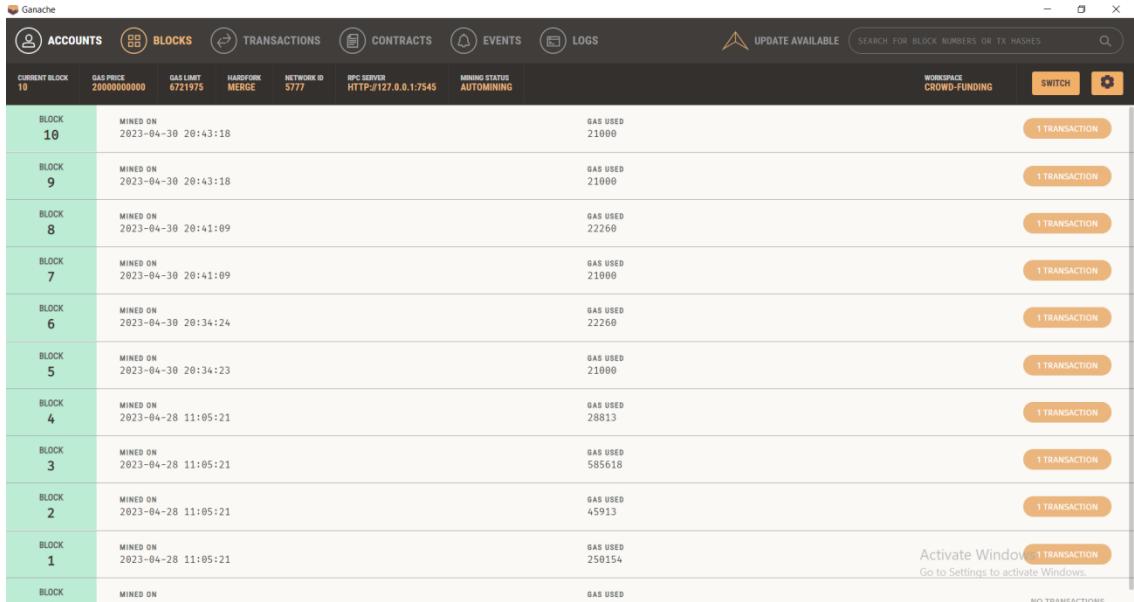
Account(Ganache)



The screenshot shows the Ganache interface with the following details:

ADDRESS	BALANCE	TX COUNT	INDEX	KEY
<code>0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C444</code>	<code>89.99 ETH</code>	8	0	🔑
<code>0xCe26D9C2399E35d0aCcb5F838c13b54E21fBA429</code>	<code>108.00 ETH</code>	1	1	🔑
<code>0xa3482e295292a34c34EdD23fd3cF330189bF9bE7</code>	<code>102.00 ETH</code>	1	2	🔑
<code>0xF4fcB84Dc7329478C8EB952cc8A01C38340c1C56</code>	<code>100.00 ETH</code>	0	3	🔑
<code>0xDD8db5888493b594f81F3059fAB62747EAAEBEB3</code>	<code>100.00 ETH</code>	0	4	🔑
<code>0x2446367d2E8286F125411e4d970b8e698520BF80</code>	<code>100.00 ETH</code>	0	5	🔑
<code>0xe69524B07ed98659BA409a8aE2A39d5797fc0Ee9</code>	<code>100.00 ETH</code>	0	6	Activate Window Go to Settings

Mined Blocks



The screenshot shows the Ganache interface with the following details:

BLOCK	MINED ON	GAS USED	TRANSACTIONS
10	2023-04-30 20:43:18	21000	1 TRANSACTION
9	2023-04-30 20:43:18	21000	1 TRANSACTION
8	2023-04-30 20:41:09	22260	1 TRANSACTION
7	2023-04-30 20:41:09	21000	1 TRANSACTION
6	2023-04-30 20:34:24	22260	1 TRANSACTION
5	2023-04-30 20:34:23	21000	1 TRANSACTION
4	2023-04-28 11:05:21	28813	1 TRANSACTION
3	2023-04-28 11:05:21	585618	1 TRANSACTION
2	2023-04-28 11:05:21	45913	1 TRANSACTION
1	2023-04-28 11:05:21	250154	Activate Window Go to Settings to activate Windows.
0	-----	-----	NO TRANSACTIONS

Transactions

TX HASH: 0x630f89fe9481d180f5a7437bf6ceb67baf26f42aeb5288fbf19a922eec066fb5

FROM ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

TO ADDRESS: 0xCe26D9C2399E35d0aCcb5F838c13b54E21fBA429

GAS USED: 21000

VALUE: 11000000000000000000

TX HASH: 0x667e221e1c4c624ba20dfc43b193db99e9a3fd9c5cd90cb2aa17124a7d7aafa1

FROM ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

TO ADDRESS: 0xa3482e295292a34c34EdD23fd3cf330189bf9bE7

GAS USED: 21000

VALUE: 30000000000000000000

TX HASH: 0x23237f7ca31bdf7133dfec0ace13eb3aab8317261e13b7821ba96564c91999e9

FROM ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

TO CONTRACT ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

GAS USED: 22260

VALUE: 0

TX HASH: 0x5efb7c2ffabed7cae8514869c80a9cc73d42978ea8f84db20f95bae6963feb8

FROM ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

TO ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

GAS USED: 21000

VALUE: 10000000000000000000

TX HASH: 0x473e9590259a99ff3b02e46fe6fbca8cadbe18d6b3b634f07d0322e006723d9b

FROM ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

TO CONTRACT ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

GAS USED: 22260

VALUE: 0

Viewing Address

TX 0x630f89fe9481d180f5a7437bf6ceb67baf26f42aeb5288fbf19a922eec066fb5

SENDER ADDRESS: 0xe74a2A7B400F51061B543d44e0Da7e0BF9B9C44

TO ADDRESS: 0xCe26D9C2399E35d0aCcb5F838c13b54E21fBA429

VALUE: 11.00 ETH

GAS USED: 21000

GAS PRICE: 50000000000

GAS LIMIT: 200000

MINED IN BLOCK: 10

TX DATA: 0x

EVENTS

NO EVENTS

BIBLIOGRAPHY

14. BIBLIOGRAPHY

Websites

- [1] <https://www.tutorialspoint.com/flask/index.html>
- [2] <https://sqlyogkb.webyog.com>
- [3] <https://docs.ipfs.io/how-to/>
- [4] https://www.tutorialspoint.com/ethereum/ethereum_smart_contracts.html
- [5] <https://trufflesuite.com/ganache/>

Books

- [1] ThinkPython: An Introduction to Software Design by Allen B. Downey
- [2] IPFS - Building Blockchain Projects - O'Reilly Media
- [3] Building Rest Apps With Flask by Kunal Relan
- [4] Smart Contract Development with Solidity and Ethereum-Akhil Mittal
- [5] Mastering Ethereum Building Smart Contracts And dapps by Andreas M. Antonopoulos