



Thakur College of Engineering & Technology



TCET's NATIONAL LEVEL HACKATHON

HACKANOVA

4.0

Redefining Norms Through Intelligence

DaanSetu - Blockchain-Powered Financial Emergency Relief & Real-Time Response System for Rural India.

By

Team \$-cide

Team Member Details

Team Name	Team \$-cide		
Team Members >>	1 (Leader)	2	3
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Blockchain-Powered Financial Emergency Relief & Real-Time Response System for Rural India.

Problem Statement :

Access to emergency financial aid in rural India faces **delays, fund mismanagement, and fraud** due to inefficient traditional systems. This project builds a **blockchain-powered relief system** using **Polygon, smart contracts, and decentralized identity (DID)** to ensure **instant, automated fund disbursement** with **real-time tracking and fraud prevention**. It **integrates geolocation-based verification** to validate beneficiaries and uses an **immutable audit trail** for transparency.

Project Objective :

- **Automated Disbursement** – Smart contracts execute **instant, trust-less** fund transfers, eliminating manual intervention.
- **On-Chain Transparency** – Immutable blockchain records ensure **verifiable and tamper-proof** audit trails for all transactions.
- **Geolocation-Based Allocation** – GPS integration enables **precise** fund distribution and targeted relief deployment.
- **Decentralized Identity (DID) Authentication** – Blockchain-based identity verification ensures **secure and fraud-resistant** donor and beneficiary validation.
- **Scalable & Cost-Efficient Transactions** – Polygon blockchain ensures **high-speed, low-cost** fund transfers, making the system suitable for **large-scale rural deployment**.



Idea/Approach

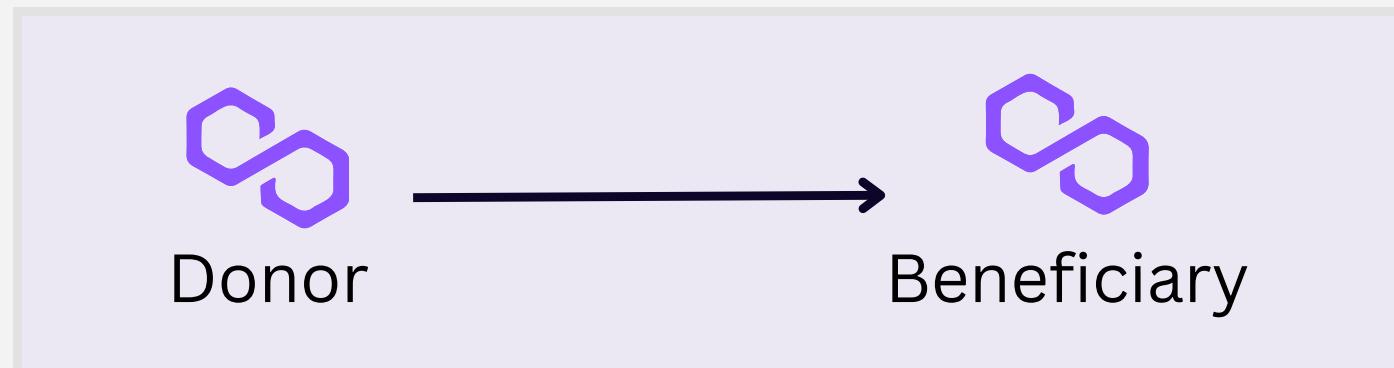
Type of Users:

- **Beneficiary:** Applies & receives aid (Crypto/UPI)
- **Donor** – Donates crypto/UPI
- **Relief Worker/NGO** – Registers beneficiaries
- **Admin** – Manages platform & campaigns

Verification & Fraud Prevention:

- Aadhaar & Mobile Verification
- Geo-Location & IP Tracking
- Decentralized Identity (DID)
- Crypto Wallet-Based Transactions

Fund Flow



Crypto Distribution



INR Distribution

Tools/Items used

Frontend



React.js



Tailwind CSS



Ethers.js



Axios

Backend



Node.js



Ethers.js



MongoDB

API



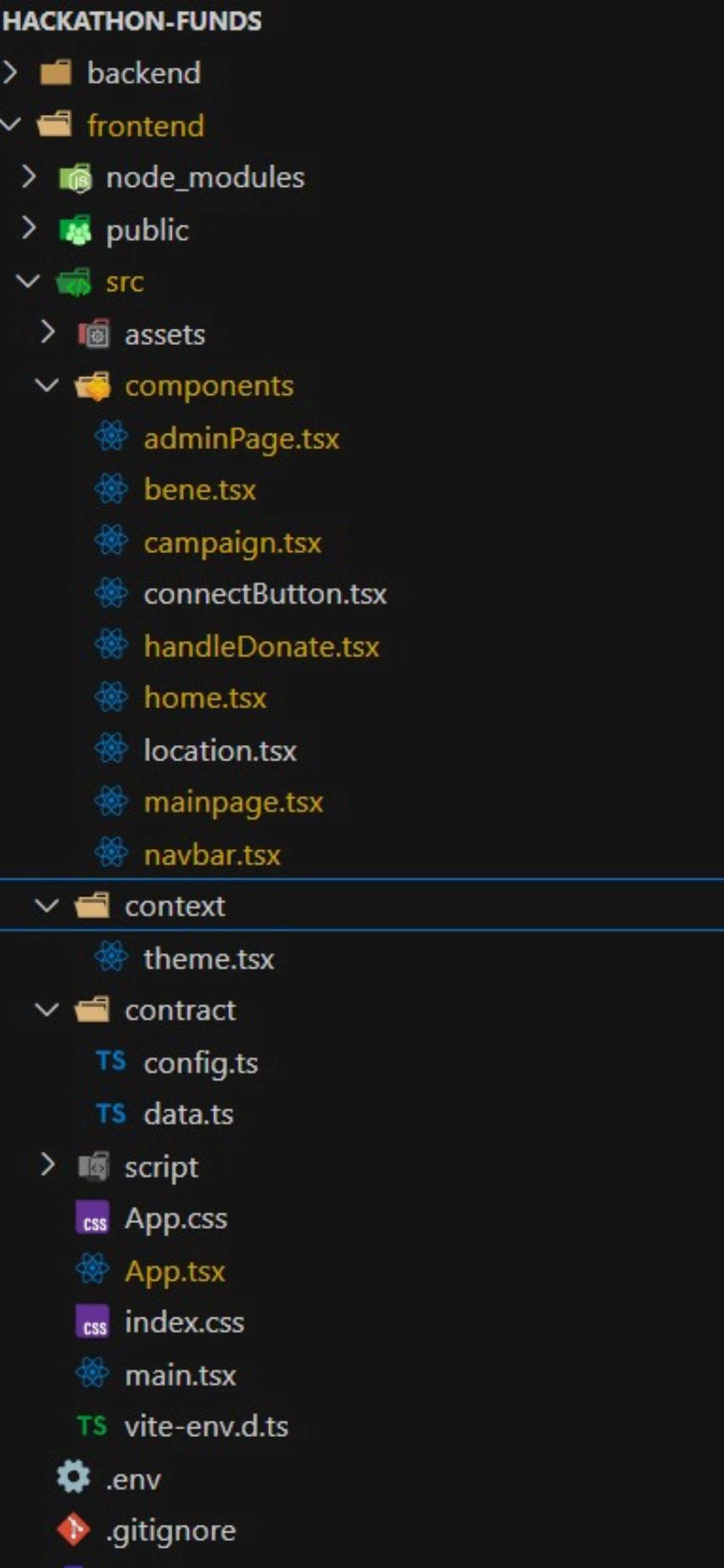
Twilio

Security

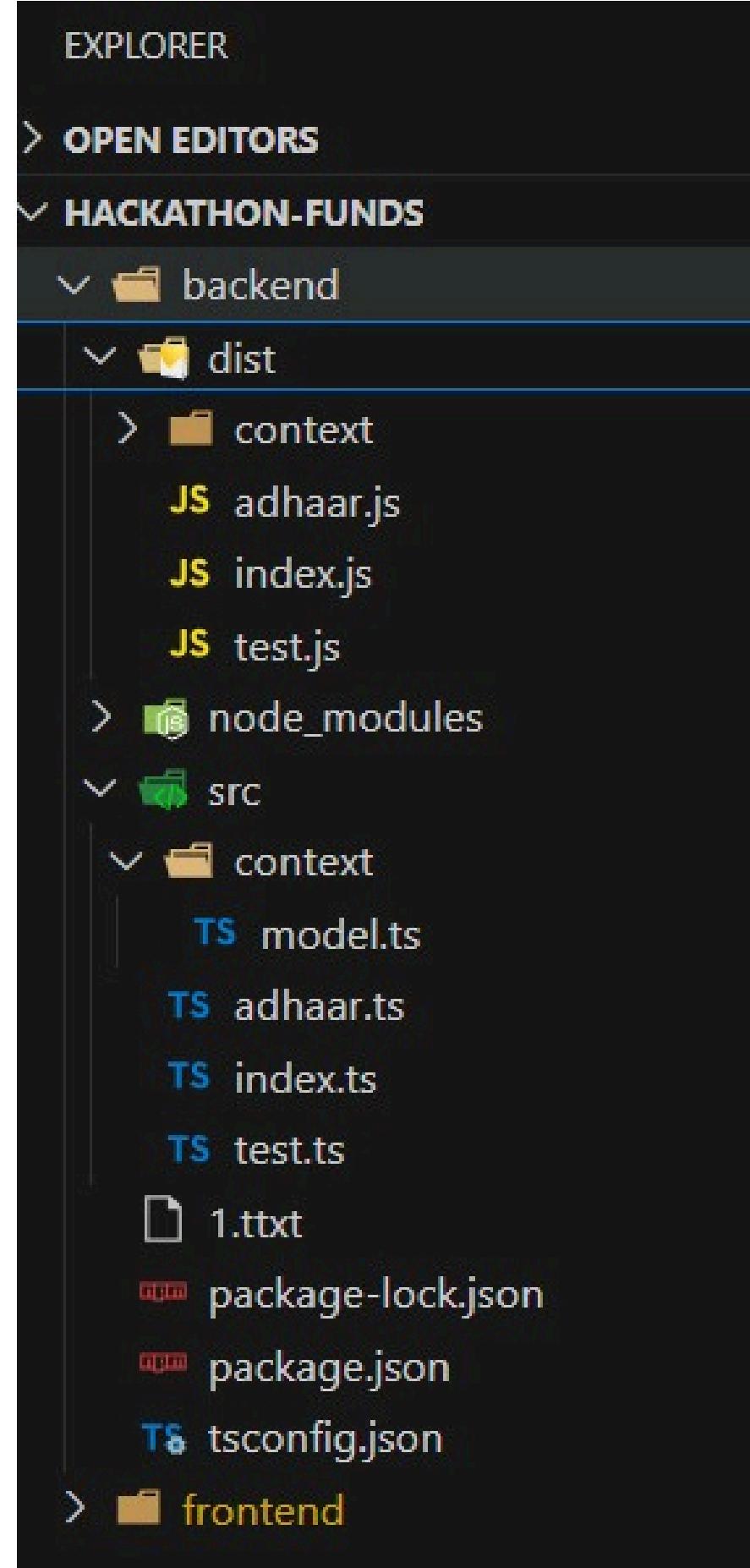
KECCAK256 Hashing algorithm

Architecture

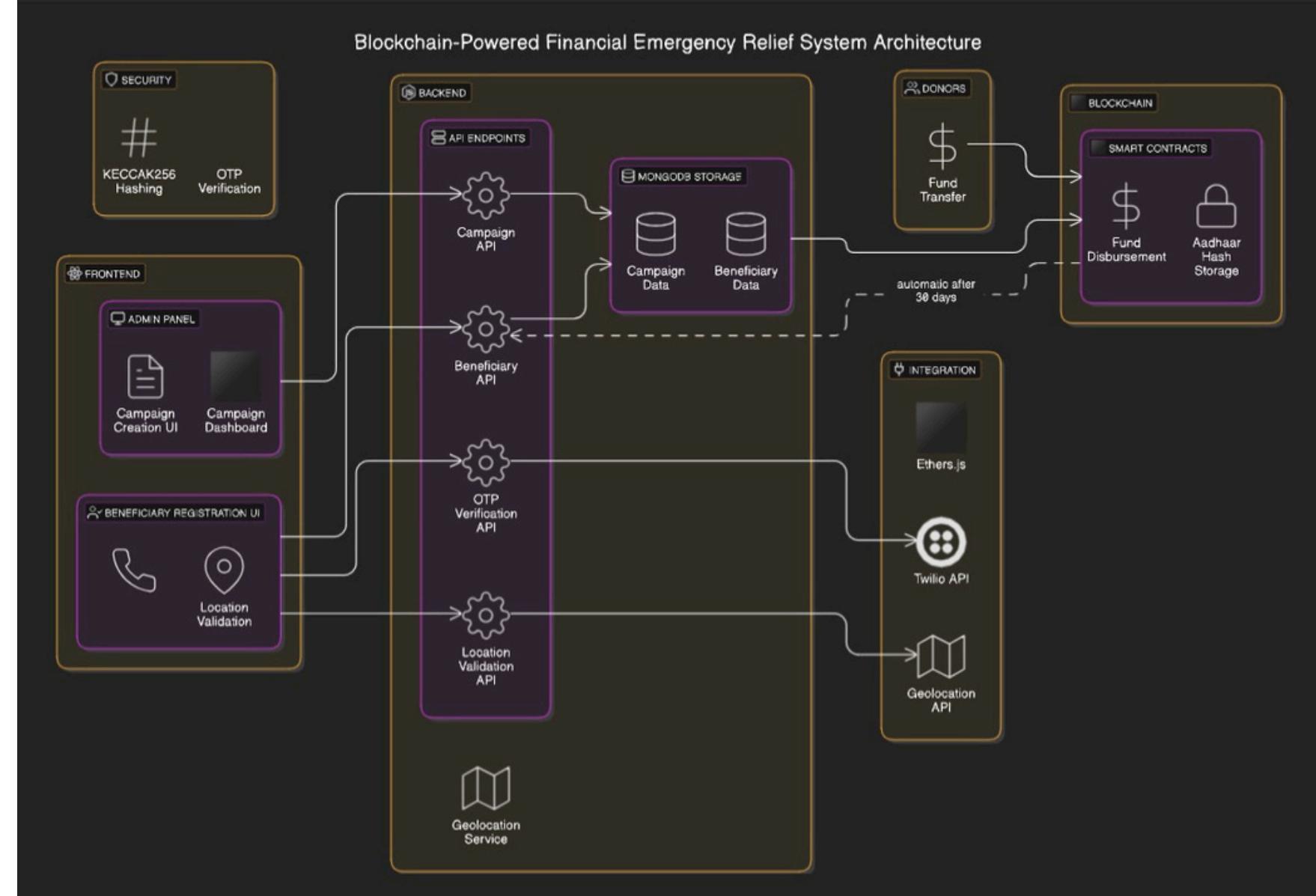
FRONTEND



BACKEND



SYSTEM ARCHITECTURE



NGOs/Admins can create emergency relief campaigns. A unique campaign ID is automatically generated and stored in MongoDB and Blockchain, making it visible on the website. People in need can register as beneficiaries by providing their Aadhaar number, which is verified. The system then checks their location—if they are within the campaign's radius, they qualify for aid. For privacy, the Aadhaar number is converted into a hash before being stored on the blockchain.

SWOT Analysis

Strength:

- **Transparency** - Blockchain ensures all transactions are immutable and publicly verifiable, reducing corruption.
- **Accessibility** - SMS/USSD integration makes the system accessible to rural users with limited tech literacy.
- **Security** - Blockchain provides a secure and tamper-proof system for financial transactions.

Weakness:

- **Dependence on Mobile Network** - SMS/USSD relies on mobile network coverage, which may be unreliable in remote areas.
- **Initial Setup Cost** - Setting up the blockchain infrastructure and integrating SMS services may require significant investment.
- **Adoption Challenges** - Rural users may be hesitant to adopt new technology due to lack of awareness or trust.

Opportunities:

- **Scalability** - The system can be scaled to cover other regions or countries facing similar challenges.
- **Integration with Government Schemes** - The system can be integrated with existing government relief programs to improve efficiency.
- **AI for Emergency Detection** - AI can be used to predict emergencies (e.g., floods, droughts) and trigger relief efforts proactively.

Threats:

- **Regulatory Challenges** - Governments may impose restrictions on blockchain-based financial systems.
- **Cybersecurity Risks** - The system may be vulnerable to hacking or phishing attacks.
- **Competition** - Other organizations may develop similar systems, leading to market competition

Project Overview

localhost:5173

By donating to our Disaster Relief Fund, you can help families and communities devastated by wildfires and other natural disasters.

Daan Setu

Home About

Partners in Humanitarian

Daan Setu is an international network of six humanitarian support hubs located strategically around the world, that provide supply chain solutions to the international humanitarian community.

Donate Now Apply For Aid

localhost:5173/donateCrypto?campaignId=2

By donating to our Disaster Relief Fund, you can help families and communities devastated by wildfires and other natural disasters.

Setu

Total Funds Allocated: 0.0 POL

Donate Now

41.263 POL 0x53...80ba0e

Enter Donation Amount (USDC):

1

Donate

Cancel Confirm

MetaMask Account 2 Amoy Transaction request

Request from HTTP localhost:5173 Interacting with 0xecA73...71908

Amount 1 POL

Network fee 0.0001 POL < \$0.01

Speed Advanced -15 sec

localhost:5173/admin

By donating to our Disaster Relief Fund, you can help families and communities devastated by wildfires and other natural disasters.

Setu

Home About Admin

New Campaign

0.000 0x28...fc1fe2

Enter Campaign Name:

Enter Campaign details:

Enter Affected Region (District):

Enter Image Url:

Create Campaign

localhost:5173/campaigns

Live Campaigns

Campaign Name: mumbai

Contract Address: 0xbf021fFEAb5e52807c03E4Eb0DF35bbFd6388d0
Campaign ID: 67b99ede7f770dd4b01f6003
campaign Detail: mumbai flood
affected City: mumbai

Donate Add Beneficiary

Campaign Name: amethi drought

Contract Address: 0xa94bD2Be47e2e9A02A7742c1168eDf650d84faDc
Campaign ID: 67b99f7e7f770dd4b01f6009
campaign Detail: amethi drought
affected City: amethi

Donate Add Beneficiary

HACKNOW

Thank You

~ Team \$-cide