

# Ethereum based Charity Application

# Project Proposal

## Overview

This is a dApp built on the Ethereum blockchain. It helps the Charity organization to receive donations. Since Ether is payment currency, transnational donations are hassle free. The application is built using solidity smart contracts which enable transparency, immutability, and security in the donation process, making it difficult for any party to manipulate the process.

## Proposed System

The decentralised application works with the help of a smart contract deployed by the charitable organizations on the Ethereum blockchain. A web user interface is provided to interact with this smart contract and carry out the below tasks.

The admin receives a charity request that outlines the details of their fundraising campaign, such as the fundraising goal, donation address, and the deadline and register them on the dApp.

The donors can view the request and donate. Purpose, Target limit, date and the Organization commission are displayed on the page. There is a provision to check the achieved amount and donate.

The admin manually closes the account and disburses the fund on achieving the goal or on the target date.

The donor has an option to get a receipt for the total donations by him.

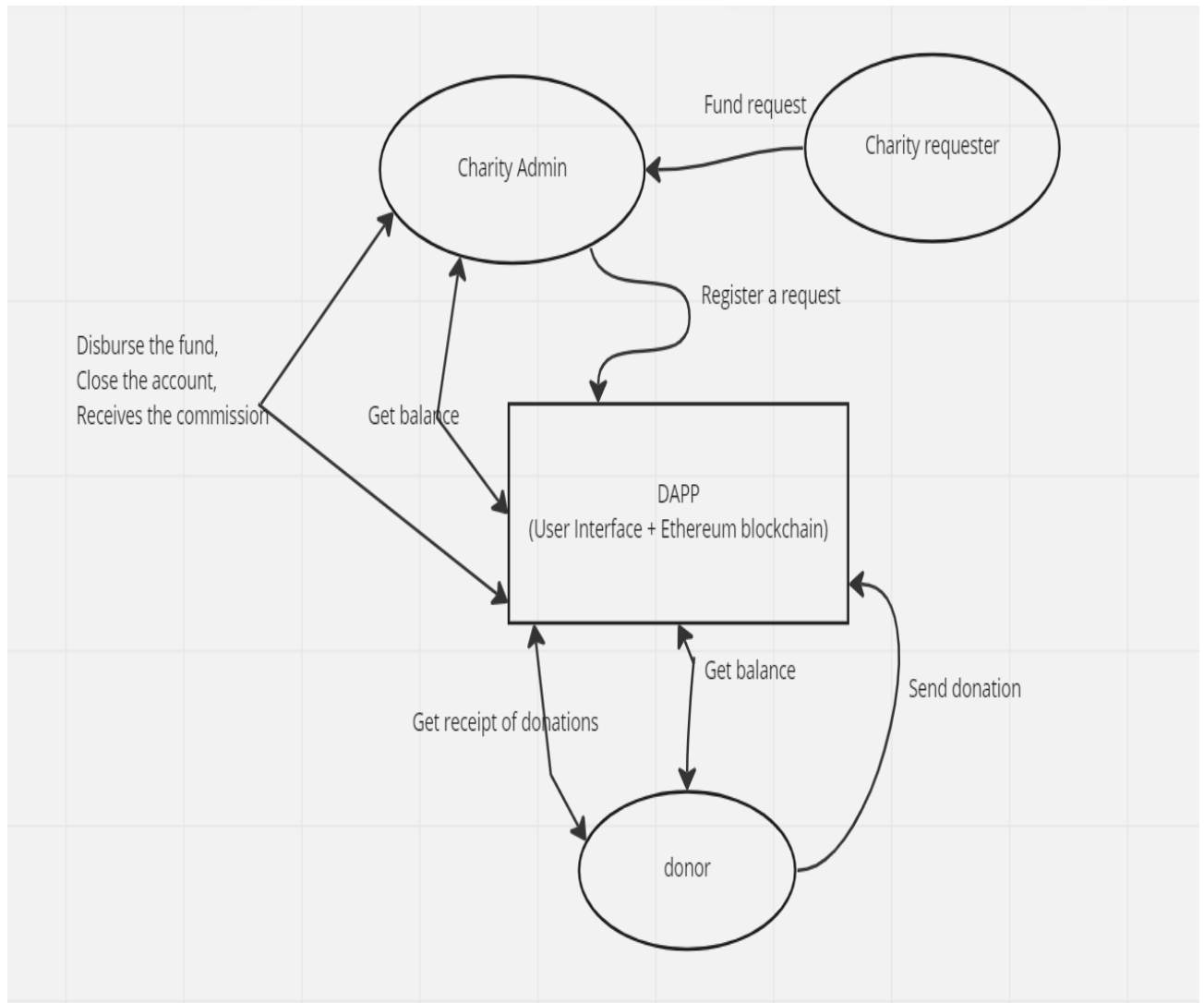
## Existing System

Existing system may have the user interface similar to the above. But the backend process is different. Instead of the smart contract, they may be using a database for storage and their own business logic which is not transparent. There is no way to identify the collected amount and also the fund disbursal to the needy. Its easy to manipulate the whole process.

## Need for Ethereum blockchain

1. Ethereum is public blockchain: Ethereum blockchain provides a transparent and immutable record of all transactions, allowing donors to track how their donations are being used by charities. This level of transparency can help build trust between charities and their donors and improve accountability for the use of funds.
2. Smart contract feature: which can automatically execute the terms of an agreement between two parties without the need for intermediaries. Here, the smart contracts can be used to automate the distribution of funds. The public deployment of smart contract ensure that funds are only used for their intended purposes, and reduce the administrative burden on charities.
3. Decentralised: Since centralisation is not possible here, its very difficult for fraud and corruption. All transactions are recorded on a public ledger that is immutable.
4. Global reach: Ethereum blockchain can facilitate cross-border transactions, allowing charities to reach people in remote or underdeveloped areas. This can help increase the impact of charitable organizations and ensure that donations are reaching those who need them the most.

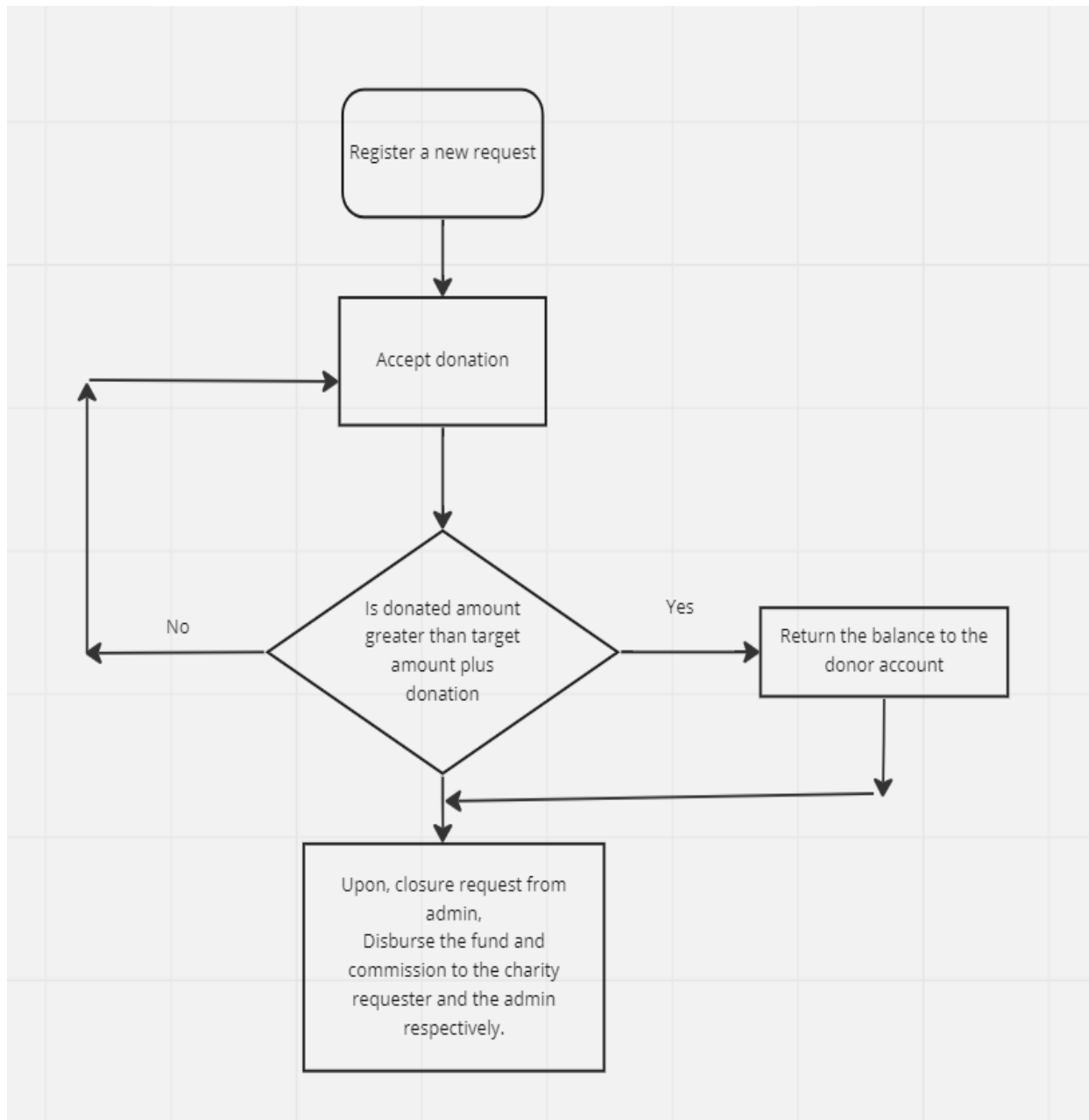
## Decentralised Application work flow



The process flow is as below:

- 1 The charity requester submits a charity request to the charitable trust admin which includes details such as fundraising goal, donation address, and deadline.
2. The admin of the dApp reviews and approves the charity request, registering it on the dApp.
3. Donors can view the details the fundraising goal, donation address, and deadline.
4. The donor can make a donation by inputting the required ether and clicking the donate button
- 5 The dApp keeps track of the amount of Ether received for each charity request and displays the progress towards the fundraising goal on clicking the achieved amount button.
6. If the fundraising goal is met before the deadline, the admin closes the charity request and disburses the funds to the charity requester. The commission is credited to the admin account
7. If the deadline is reached and the fundraising goal is not met, the admin sends the received amount minus commission to the requester. The commission gets credited to the admin account
8. Donors can request a receipt for their total donations on the dApp.

## Smart Contract Logic Process Flow diagram



## Shortcomings and future enhancements.

The DAPP developed as part of this project is just a prototype model to demonstrate charity as a blockchain application. There could be many enhancements made.

1. The User Interface could be made better.
2. Receipts could be made available for the chosen time period.
3. By using Mongo dB to store the receiver address, multiple charity requests can be displayed on the page. (Currently, local storage is used and at a time single charity request is open)
4. Charity application can be implemented as Decentralised Autonomous Organization (DAO) model also. Here the Organization collects money throughout the year irrespective of the requirement and decides on the spending by voting.