

Blockchain & Distributed Ledger Technologies Course

CR7s Crowdfunding Reinvented

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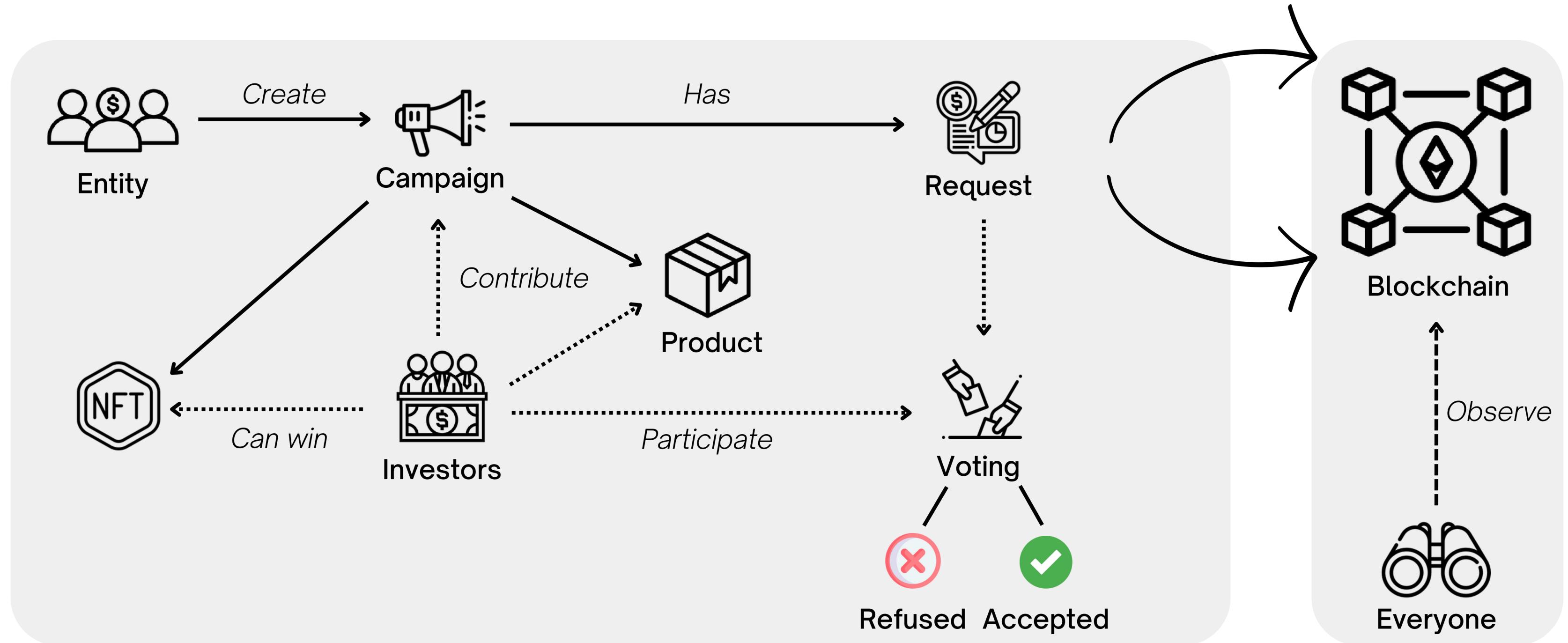
Context

01 | Problem

Currently, existing Crowdfunding platforms don't allow contributors to track how their money is being used, which might lead to fraud.



01 | Solution



01 | Benefits of Blockchain



Security

A network of computers holds records that can't be altered and are encrypted end-to-end.



Transparency

All network participants can view the entire history of transactions.

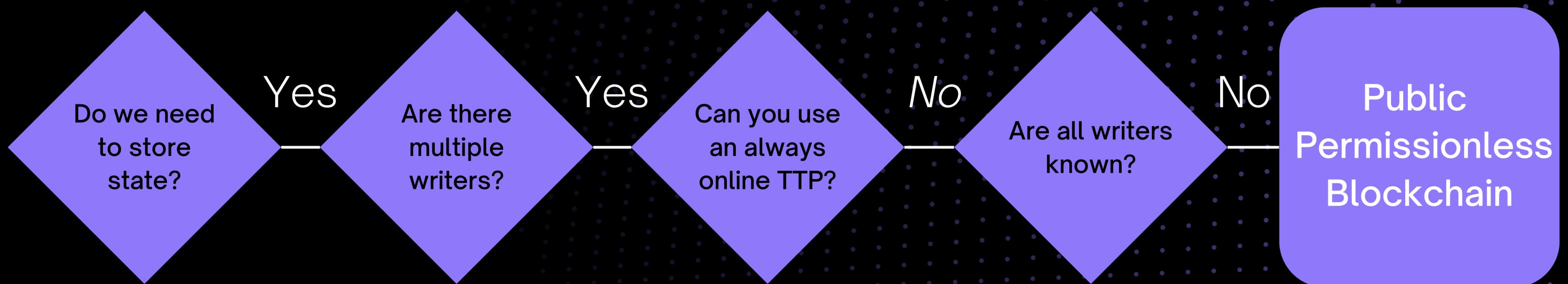


Traceability

Creates an audit trail that documents the origin of an asset at every step on its journey.

01 | Type of Blockchain

(Wüst & Gervais)



Approach

02 | Approach

Contracts



CampaignFactory

Data Structures

```
address[] public campaigns;  
address public crowdCreator;  
address public crowdNFTContractAddr;
```

Functions

```
function deployCampaign(uint256  
minimumContribution, uint256 targetValue,  
uint8 maximumNFTContributors, uint256  
openDays, uint256 productPrice) external;
```



Campaign



```
event  
NewCampaignDeployed  
(address campaignAddr);
```



CrowdNFT

Data Structures

```
Counters.Counter private _tokenIds;
```

Functions

```
function mintNFT(address recipient, string  
memory tokenURI) external returns (uint256);
```

02 | Approach

Contracts



CampaignFactory



Campaign



CrowdNFT

Data Structures

```
struct Request {  
    uint256 value;  
    bool complete;  
    mapping(address =>  
RequestState) approvals;  
    uint256 approvalValue;  
    uint256 openDate;  
}  
  
Request[] public requests;  
mapping(address => uint256)  
public approvers;
```

```
address payable public campaignCreator;  
address payable public crowdCreator;  
address public crowdNFTContractAddr;  
uint256 public minimumContribution;  
uint8 public maximumNFTContributors;  
uint256 public approversCount;  
uint256 public unitsSold;  
uint256 public productPrice;  
uint256 public raisedValue;  
uint256 public targetValue;  
uint256 public endDate;
```

Modifiers

```
modifier onlyCampaignOwner();  
modifier onlyCrowdOwner();  
modifier requestNotCompleted(uint256 idx);  
modifier sentEnoughValue(uint256 value);  
modifier onlyOpenCampaign();
```

Events

```
event NFTMinted(uint256 tokenID);
```

Errors

```
error OnlyCampaignOwner();  
error OnlyCrowdOwner();  
error RequestNotCompleted();  
error SentEnoughValue();  
error OnlyOpenCampaign();
```

02 | Approach

Contracts



CampaignFactory



Campaign



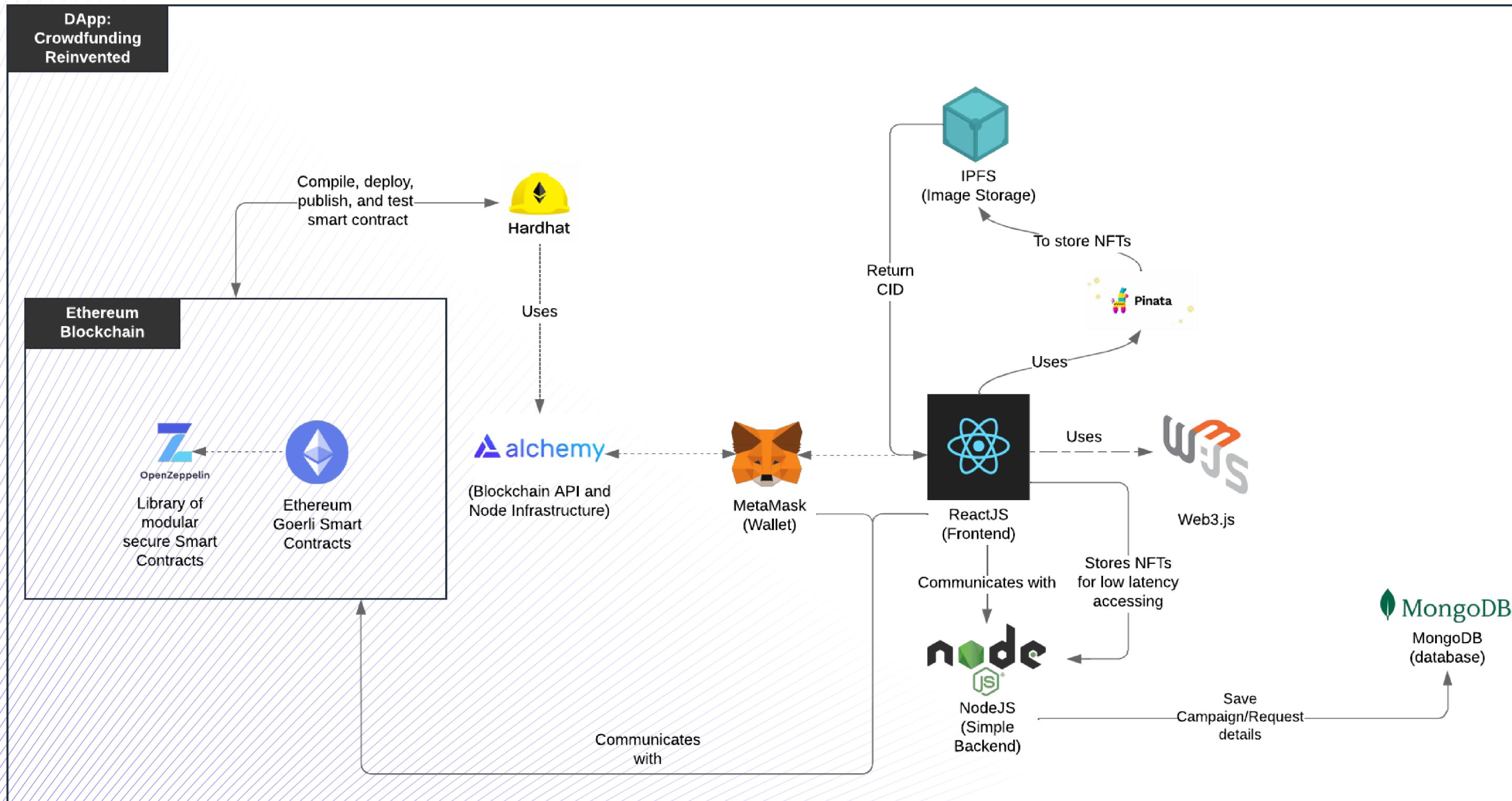
CrowdNFT

Functions

```
function contribute(string memory tokenURI) private;
function createRequest(uint256 _value) external onlyCampaignOwner;
function approveRequest(uint256 idx) external requestNotCompleted(idx);
function completeRequest(uint256 idx) external onlyCampaignOwner requestNotCompleted(idx);
function donate(string memory tokenURI) external payable onlyOpenCampaign sentEnoughValue(minimumContribution) ;
function buyProduct(string memory tokenURI) external payable onlyOpenCampaign sentEnoughValue(productPrice) ;
function getRequestsCount() public view returns (uint256 requestsCount);
function terminate() external onlyCrowdOwner;
```

Architecture & Prototype

03 | Architecture



03 | Prototype

≡ DApp: Crowdfunding Reinvented Search...

Campaigns



Cyplus MOTOR Drive Smart Trainer

Thinking on cycling enthusiasts, we have designed a bike trainer that best suits you and your goals, environment, and most importantly, your budget.

2 ETH raised  25%

⌚ 3 days left



Weapon X - Full Suspension Carbon

The Weapon X features a hand laid carbon fiber frame which beautifully integrates a lot of features.

2 ETH raised  25%

⌚ 3 days left



SHARGEEK: Charger With Power Display

Combines vintage with modern technology for a unique charging style suitable for any device.

2 ETH raised  25%

⌚ 3 days left



Peanut Butter Gallery Short Film

A dark comedy short film about four puppet friends who make the deadly decision to test their allergy anaphylactic.

2 ETH raised  25%

⌚ 3 days left

< 1 2 3 >

03 | Prototype

DApp: Crowdfunding Reinvented

Search...

Campaigns

Campaign Title

DETAILS CONTRIBUTE REQUESTS



FEATURED

CYPLUS Gadget x 1

10 ETH ~~15 ETH~~ (33% OFF)

\$10 303,70

Thinking on cycling enthusiasts, we have designed a bike trainer that best suits you and your goals, environment, and most importantly, your budget.

23 already claimed.

Ships worldwide.

BUY PRODUCT

3 days left

3 days left

< 1 2 3 >

03 | Prototype

The screenshot shows a web-based crowdfunding application interface. At the top, a dark blue header bar displays the text "DApp: Crowdfunding Reinvented" on the left and a search bar with a magnifying glass icon and the placeholder "Search..." on the right.

The main content area has a dark grey background. In the center, the word "Campaigns" is displayed in a large, bold, black font. Below it, a white rectangular card represents a specific campaign.

The card has a title "Campaign Title" at the top. Below the title are three tabs: "DETAILS" (disabled), "CONTRIBUTE" (selected and highlighted in blue), and "REQUESTS".

The "CONTRIBUTE" section contains the following information:

- Address of Manager:** 0x12345678901123456782345...
- Open Until:** 12/10/2022
- Amount to Contribute:** ETH (with a dropdown arrow)
- CONTRIBUTE** button (blue)

The card also features four data cards arranged in a grid:

- 1** Minimum Contribution (ETH)
You must contribute at least this much ETH to become an approver.
- 10** Number of NFT Awards
Number of initial contributors eligible to win an NFT.
- 5** Number of Approvers
Number of people who have already donated to this campaign.
- 120** Campaign Balance (ETH)
The balance is how much money this campaign has left to spend.

At the bottom of the card, there are two small status indicators: "3 days left" with a clock icon on the left and "3 days left" with a clock icon on the right. Below the card, a navigation bar shows a left arrow, a central number "1" (highlighted in blue), a right arrow, and page numbers "2", "3", and "4".

03 | Prototype

The screenshot shows a web-based crowdfunding application interface. At the top, a dark blue header bar displays the text "DApp: Crowdfunding Reinvented" on the left and a search bar with a magnifying glass icon and the placeholder "Search..." on the right. Below the header, a large, semi-transparent modal window is centered over a dark gray background. The modal has a white header section with the title "Campaigns" in bold black font. Below the header is a sub-modal titled "Campaign Title" in bold black font. Underneath the title, there are three tabs: "DETAILS", "CONTRIBUTE", and "REQUESTS". The "REQUESTS" tab is currently selected and highlighted in blue. The main content area of the modal is a table with a light gray border. The table has columns for "ID", "Description", "Value (ETH)", "Approval Count (ETH)", "Open Date", "Approve", and "Finalize". There are five rows of data in the table, each representing a campaign request:

ID	Description	Value (ETH)	Approval Count (ETH)	Open Date	Approve	Finalize
1	Buy new bikes for testing.	2	10/120	10/12/2022	<button>APPROVE</button>	<button>FINALIZE</button>
2	Buy new cases for device.	1	50/120	10/12/2022	<button>APPROVE</button>	<button>FINALIZE</button>
3	Hire personnel.	20	2/250	10/12/2022	<button>APPROVE</button>	<button>FINALIZE</button>
4	New office furniture.	4	3/120	10/12/2022	<button>APPROVE</button>	<button>FINALIZE</button>
5	Participate in famous conference and advertise product.	10	5/120	10/12/2022	<button>APPROVE</button>	<button>FINALIZE</button>

At the bottom of the modal, there is a small text indicator "1–5 of 5" followed by navigation arrows (< and >). Below the modal, two dark gray rectangular bars are visible, each containing a circular icon with a timer and the text "3 days left". At the very bottom center of the page, there is a navigation bar with a dark blue background and white text, featuring a left arrow, a central number "1" in a blue circle, and right arrows.

03 | Prototype

≡ DApp: Crowdfunding Reinvented

Search...

Create Campaign

1 Campaign Details 2 NFT Awards

Title

Description

Minimum Contribution
ETH 1

Target Contribution
ETH 10

Product Price
ETH 0.25

Open Until
12/22/2022

UPLOAD PRODUCT IMAGE 

RESET 



BACK  **NEXT** 

03 | Prototype

≡ DApp: Crowdfunding Reinvented

Search...

Create Campaign

1 Campaign Details ————— 2 NFT Awards

UPLOAD IMAGE(S) 

RESET 



◀ BACK

SUBMIT ➤

My Profile

My Campaigns



Cyplus MOTOR Drive Smart Trainer

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2 ETH raised

3 days left



Weapon X - Full Suspension Carbon

The Weapon X features a hand laid carbon fiber frame which beautifully integrates a lot of features.

2 ETH raised

3 days left



SHARGEEK: Charger With Power Display

Combines vintage with modern technology for a unique charging style suitable for any device.

2 ETH raised

3 days left



Peanut Butter Gallery Short Film

A dark comedy short film about four puppet friends who make the deadly decision to test their allergy anaphylactic.

2 ETH raised

3 days left

< 1 2 3 >

Contributed Campaigns



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2 ETH raised

3 days left

< 1 2 3 >

Awarded NFTs



< 1 2 3 >

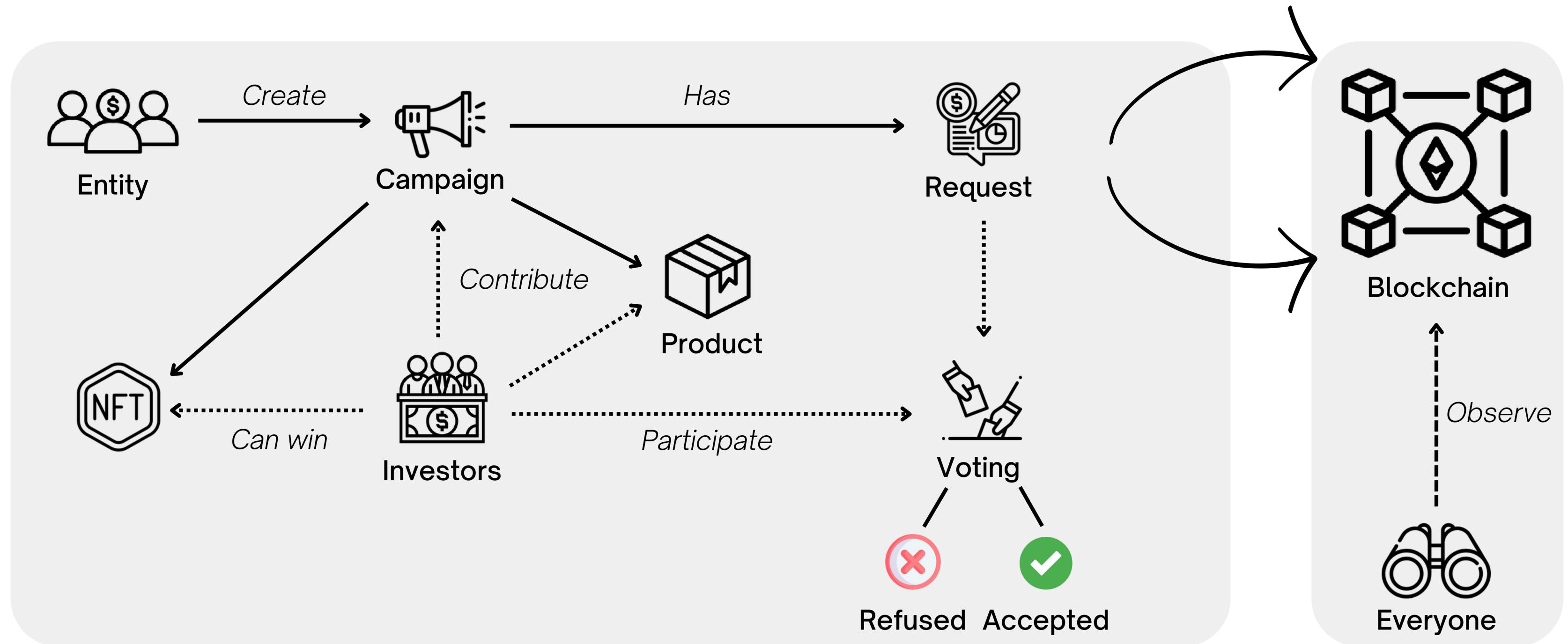
03 | Prototype

Limitations

04 | Limitations

- 1 The use of cryptocurrencies still needs to be fully understood by many.
- 2 Untrustworthy users.

01 | Recap



"Whereas most technologies tend to automate workers on the periphery doing menial tasks, blockchains automate away the center. Instead of putting the taxi driver out of a job, blockchain puts Uber out of a job and lets the taxi drivers work with the customer directly."

VITALIK BUTERIN, CO-FOUNDER OF ETHEREUM

