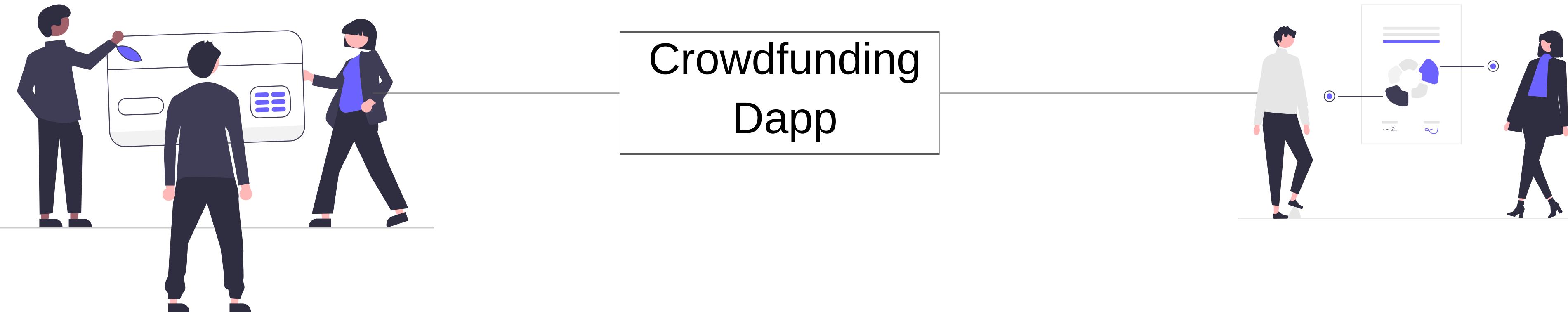




**SASKATCHEWAN**  
**POLYTECHNIC**

# Final Presentation



By,

Liyansu (000532329)  
Vivek (000506359)  
Krishna (000492922)

# Table of content

Krishna

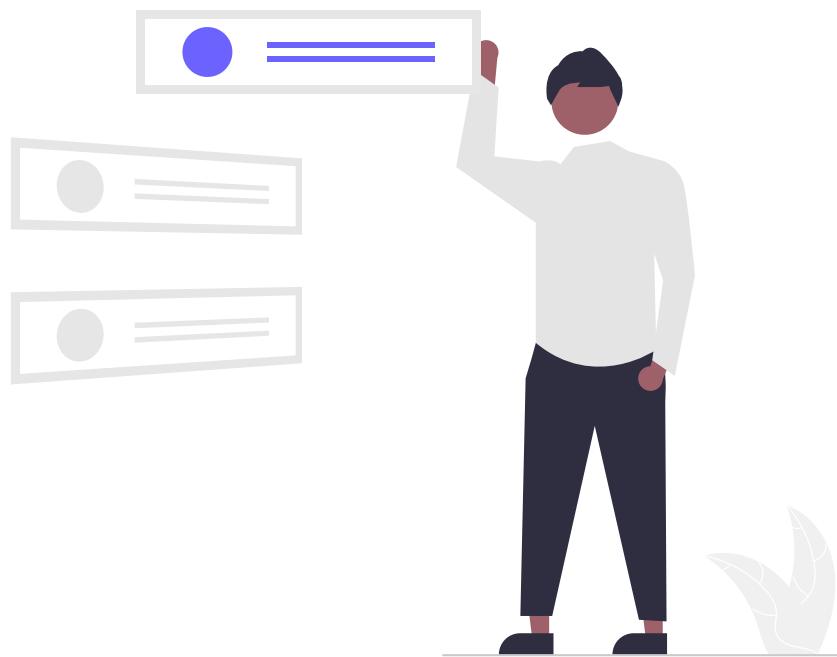
**Project Overview &  
Technology stack**

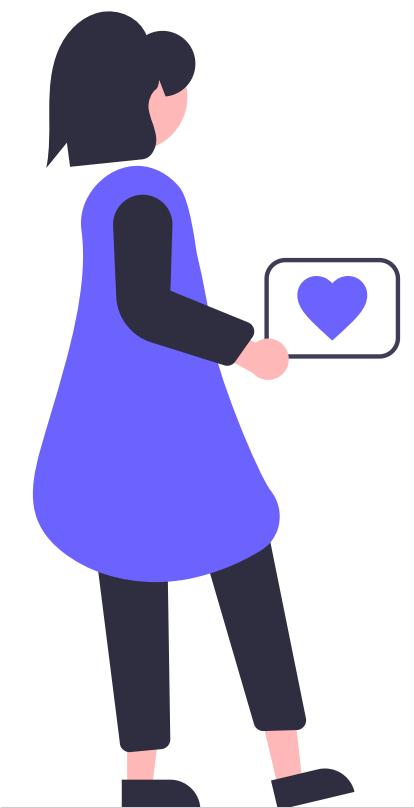
Liyansu

**Smart Contract  
Architecture & Functions**

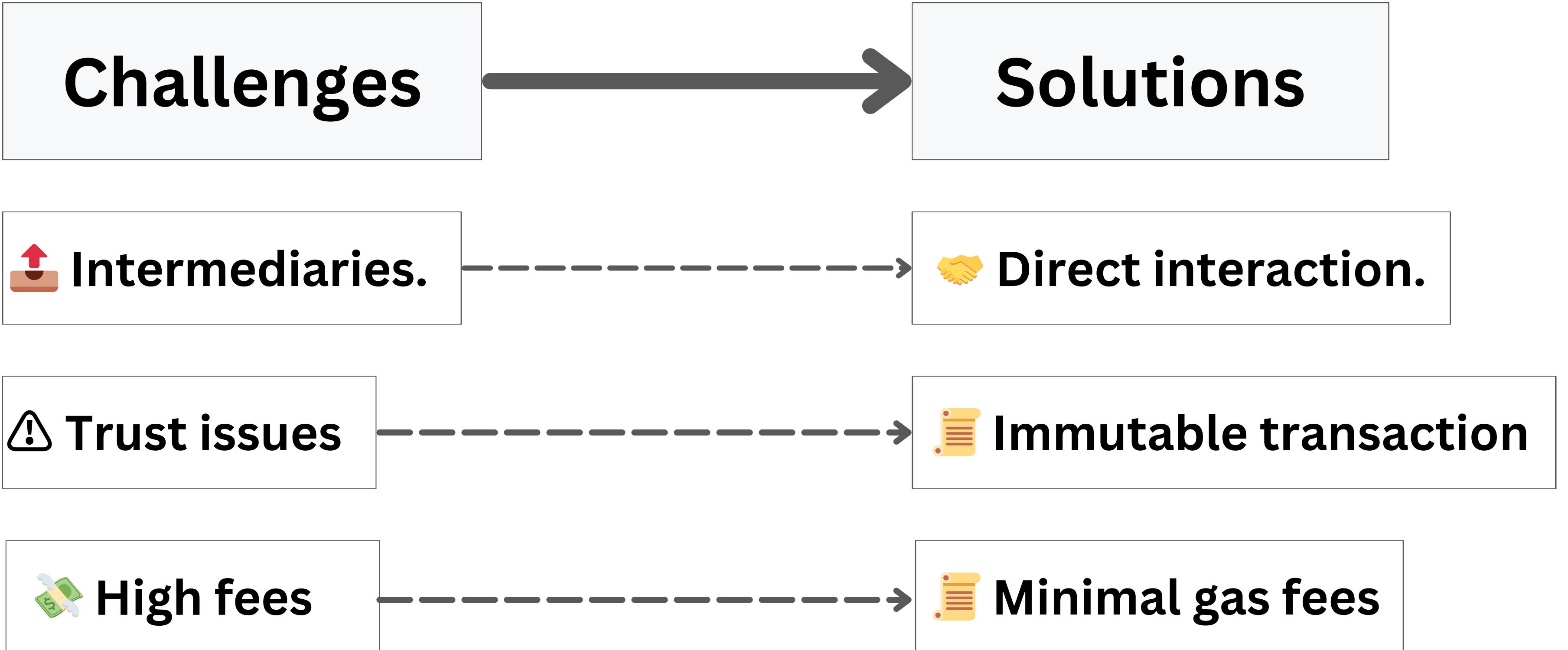
Vivek

**Frontend, Development  
Conclusion**

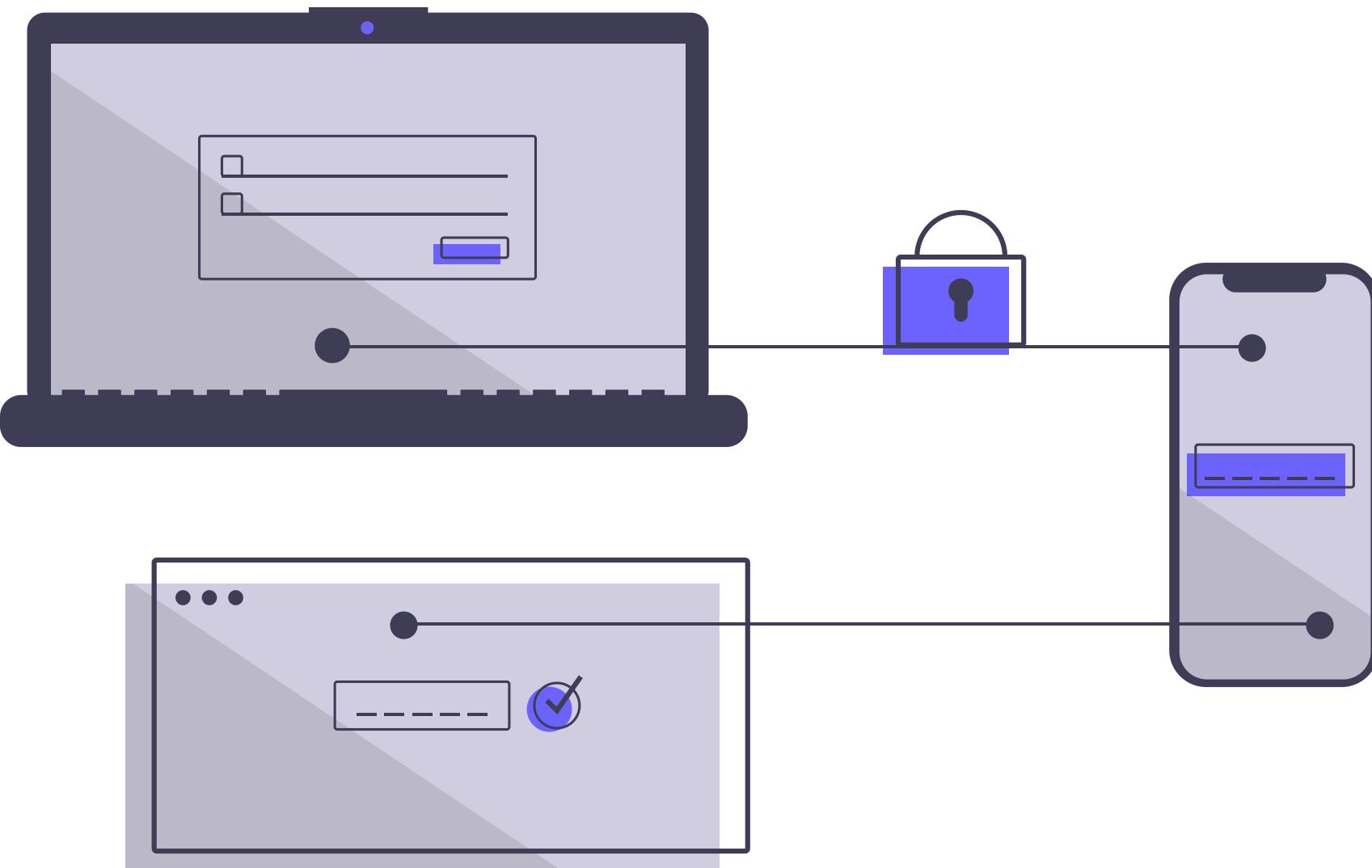




# Project Overview & Technology stack



# Technology Stack



**Blockchain:**  Ethereum

**Contracts:**  Solidity

**Frontend:**  Next.js, React

# Libraries & Tools



**Web3.js:** 🔗 Ethereum network

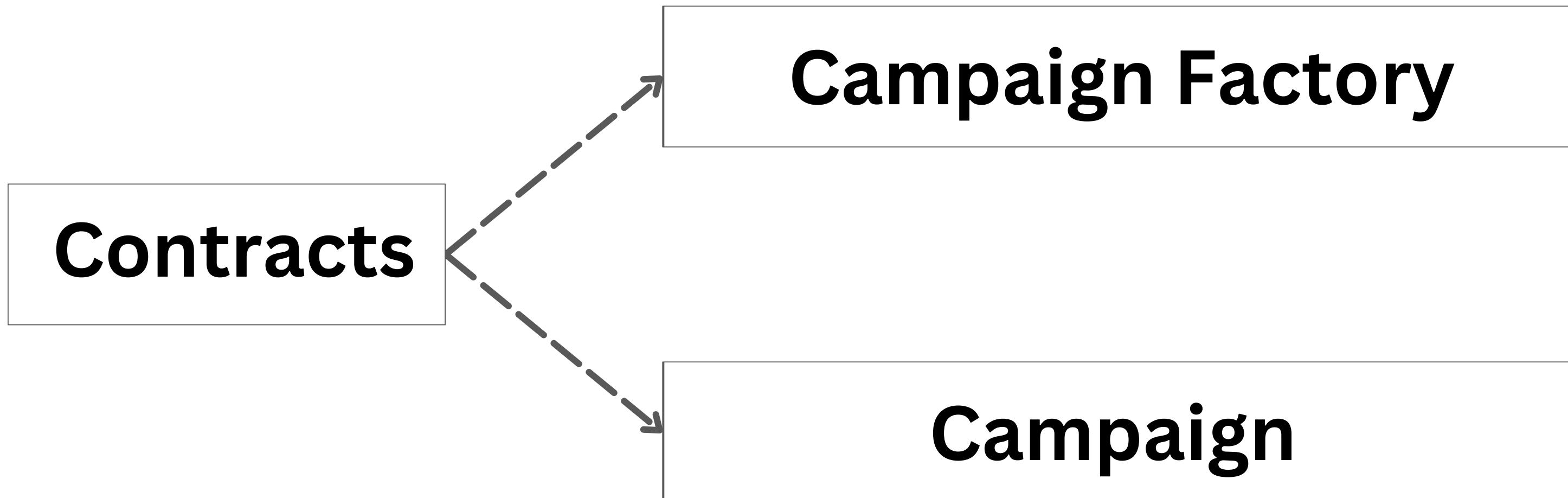
**Semantic UI React:** 🎨 Responsive UI

**Truffle Suite:** 🛠️ Contract development

**Ganache:** 🛠️ Local testing

**Mocha & Chai:** ✅ Testing frameworks

# Smart Contract Architecture



# 1. Campaign Factory

Purpose -----> Functions -----> Use case

Manages  
the creation  
and tracking  
of  
campaigns.

``createCampaign()``



Deploys a new campaign

``getDeployedCampaigns()``

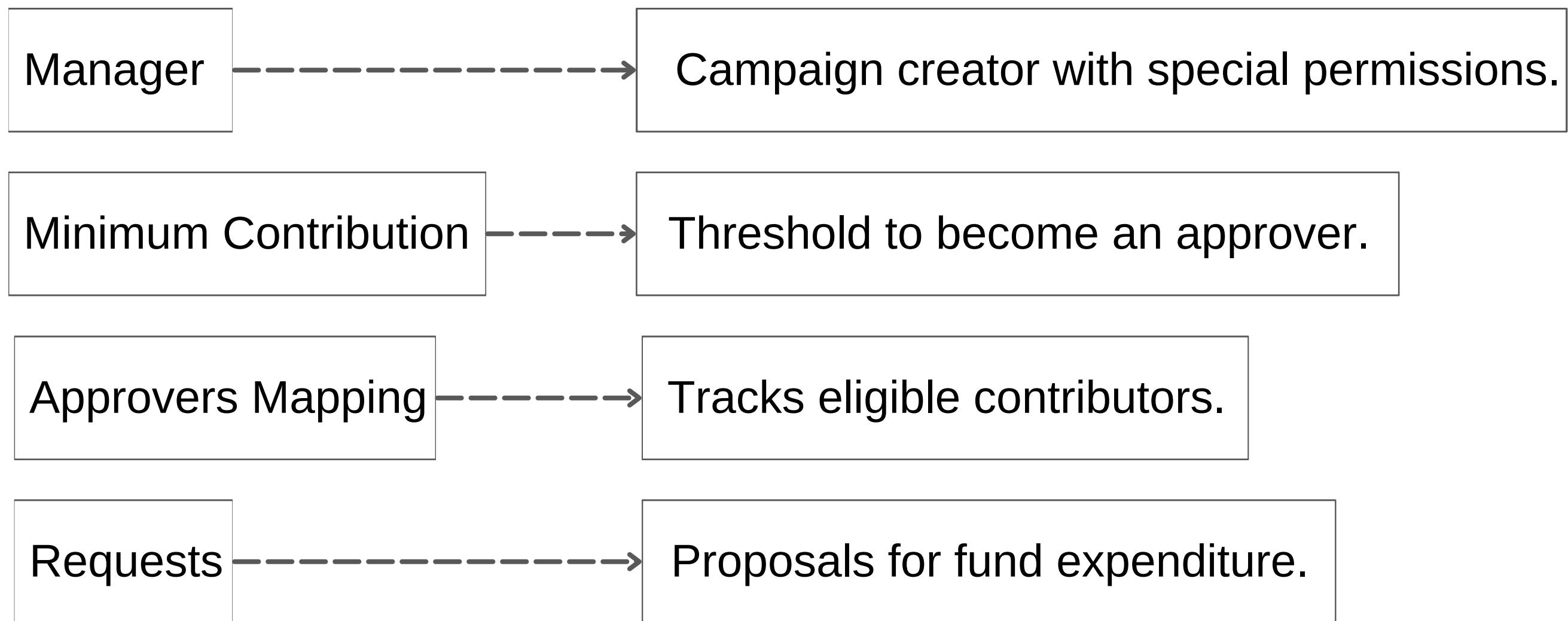


Retrieves active campaigns

## 2. Campaign

Purpose -----> Components -----> Use case

Handles individual campaign logic and funds





# Key functions

`contribute()` -----> Contributor can donate to any campaign

`createRequest(description, value, recipient)` --> Recipient proposes fund usage.

`approveRequest(index)` -----> Contributors vote on requests.

`finalizeRequest(index)` -----> Contributor finalize approved requests.

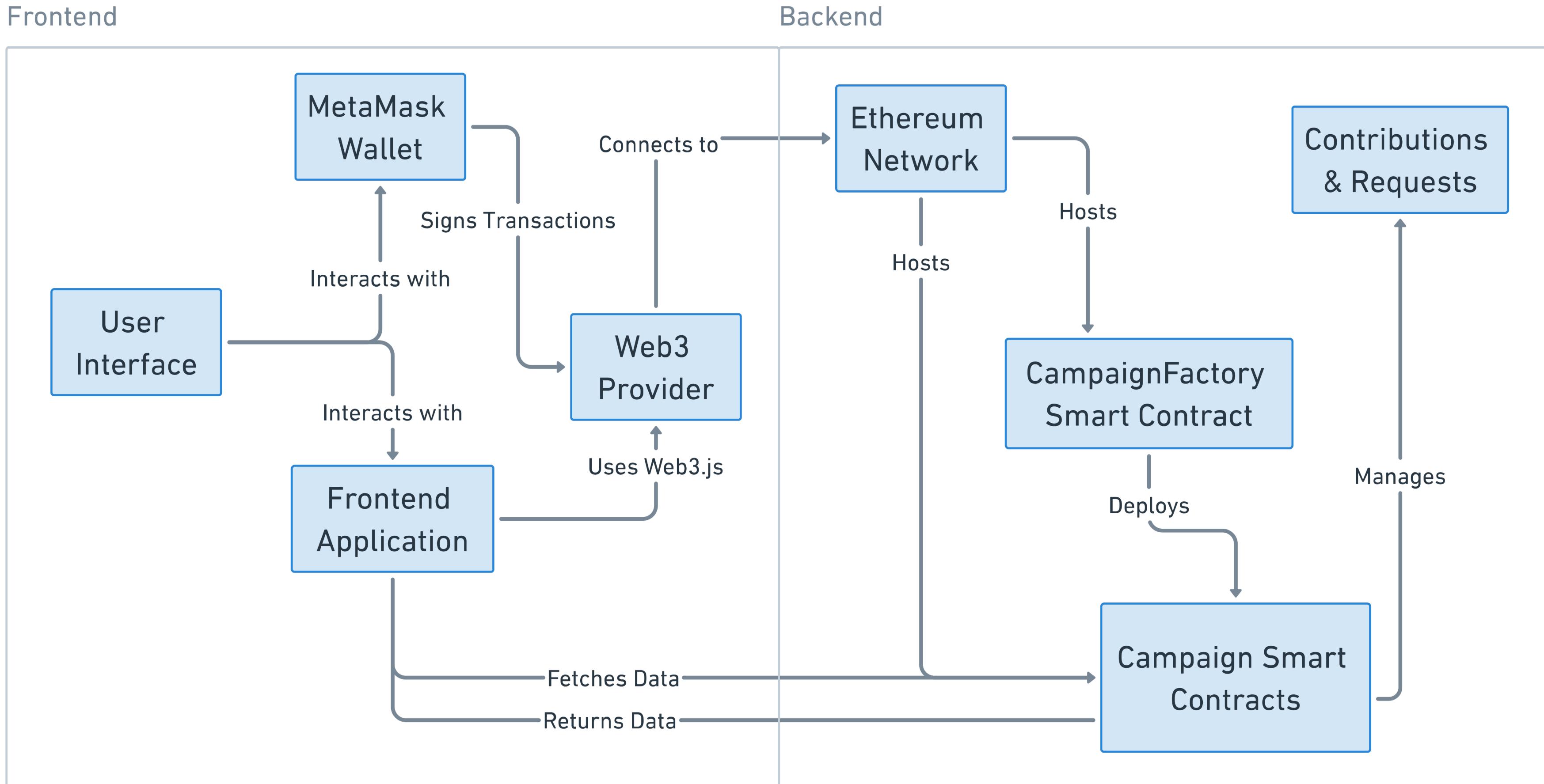
 Security Measures

Access Control: -----→ Authorized users

Approval: -----→ Majority consent required

Input Validation: -----→ Ensure data integrity

# Architecture



## FUNCTIONALITY 1

To Create Campaign

## Open Campaigns

 Create Campaign

### Create a Campaign

Minimum Contribution

wei

Create

Campaign : Minimum Amount eth

Input Type	Condition
Number	$\geq 0.1$

IDFC FIRST Bank ISBO Cricbuzz Fabrie - Online colla... JioCinema mySaskPolytech uniswap-clone-you

CrowdFunding

### Open Campaigns

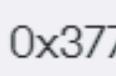
**0x352b7189C13B69FC7b081321198F0720EF7530a8**

[View Campaign](#)

### Create Campaign

**Status** [View on block explorer](#)  
**Confirmed** [Copy transaction ID](#)

**From**  0x82596...2... 

**To**  ? 0x3771b....

### Transaction

Nonce	4
Amount	-0 SepoliaETH
Gas Limit (Units)	855190
Gas Used (Units)	564480
Base fee (GWEI)	0.002355943
Priority fee (GWEI)	2.5
Total gas fee	0.001413 SepoliaETH
Max fee per gas	0.000000003 SepoliaETH
Total	<b>0.00141253 SepoliaETH</b>

 [Receive](#) 0.3 SepoliaETH

## FUNCTIONALITY 2

To Contribute to the Campaign

17

## Campaign Show

**0x82596A7C6D57cC3064801B  
E95B4fDB3850C2dAB1**

Address of Manager

The Manager created this Campaign and can create requests to withdraw money.

Amount to Contribute

0.1

ether

**Contribute!**

**1**

Minimum Contribution (wei)

Amount to contribute: ETH

Input Type	Condition
Number	$\geq 0.1$

**0x82596A7C6D57cC3064801B  
E95B4fDB3850C2dAB1**

Address of Manager

The Manager created this Campaign and can create requests to withdraw money.

**0**

Number of Requests

A request tries to withdraw money from the contract. A request must be approved by approvers.

**0.1**

Campaign Balance (ether)

The amount of money campaign has left to spend.

**1**

Minimum Contribution (wei)

You must contribute atleast this much wei to become a approver.

**Contribute**

**Status**

**Confirmed**

**From**



0x82596...2...

[View on block explorer](#)

[Copy transaction ID](#)

**To**



0xB3be9...

**1**

No of Approvers

No of people who have already donated to the campaign.

**Transaction**

Nonce

9

Amount

-0.1 SepoliaETH

Gas Limit (Units)

103297

Gas Used (Units)

68012

Base fee (GWEI)

0.00053455

Priority fee (GWEI)

2.5

Total gas fee

0.00017 SepoliaETH

Max fee per gas

0.00000003 SepoliaETH

Total

0.10017007 SepoliaETH

## FUNCTIONALITY 3

To request & Approve

## Request



0.1 ether

Add Request

ID	Description	Amount	Recipient	Approval	Approve	Finalize
----	-------------	--------	-----------	----------	---------	----------

Found 0 requests.

Input name	Input Type	Condition
Description	string	not null
Value in ether	number	not null
Recipient	account address	start with 0x

CrowdFunding      Campaigns      +

Back

### Create a Request

Description

Value in Ether

Recipient

**Create!**

**Create Request****Request**

◆ 0.1 ether

**Add Request**

ID	Description	Amount	Recipient	Approval	Approve	Finalize
0	New request	0.1 (ether)	0xFa9712077581E89acDAdFaBd1d119b34d1b93F2C	0/1	<b>Approve</b>	<b>Finalize</b>

Found 1 requests.

**To Create Request****Status**[View on block explorer](#)**Confirmed**[Copy transaction ID](#)**From**

0x82596...2...



0xB3be9...

**To****Transaction**

Nonce

10

Amount

**-0 SepoliaETH**

Gas Limit (Units)

176608

Gas Used (Units)

116693

Base fee (GWEI)

0.000616334

Priority fee (GWEI)

2.5

Total gas fee

0.000292 SepoliaETH

Max fee per gas

0.000000003 SepoliaETH

Total

**0.0002918 SepoliaETH**

## Request

## Approve Request



◆ 0.1 ether

Add Request

ID	Description	Amount	Recipient	Approval	Approve	Finalize
0	New request	0.1 (ether)	0xFa9712077581E89acDAdFaBd1d119b34d1b93F2C	0/1		

Found 1 requests.

## To Approve Request

## Status

[View on block explorer](#)

Confirmed

[Copy transaction ID](#)

## From



0x82596...2...



0xB3be9...

## To

## Transaction

Nonce

11

Amount

-0 SepoliaETH

Gas Limit (Units)

110371

Gas Used (Units)

72710

Base fee (GWEI)

0.000503795

Priority fee (GWEI)

2.5

Total gas fee

0.000182 SepoliaETH

Max fee per gas

0.000000003 SepoliaETH

Total

0.00018181 SepoliaETH

## Request



◆ 0.1 ether

Add Request

ID	Description	Amount	Recipient	Approval	Approve	Finalize
0	New request	0.1 (ether)	0xFa9712077581E89acDAdFaBd1d119b34d1b93F2C	0/1	<button>Approve</button>	<button>Finalize</button>

Found 1 requests.

To Finalize Request

## Finalize Request



## Status

[View on block explorer](#)

Confirmed

[Copy transaction ID](#)

## From



0x82596...2...



0xB3be9...

## To

## Transaction

Nonce

12

Amount

-0 SepoliaETH

Gas Limit (Units)

109276

Gas Used (Units)

71982

Base fee (GWEI)

0.000444381

Priority fee (GWEI)

2.5

Total gas fee

0.00018 SepoliaETH

Max fee per gas

0.000000003 SepoliaETH

Total

0.00017999 SepoliaETH

# Development

```
Compiling your contracts...
=====
> Compiling .\contracts\Campaign.sol
> Compilation warnings encountered:

    Warning: SPDX license identifier not provided in source file. Before publishing, consider adding a comment containing "SPDX-License-Identifier: <SPDX-License>" to each source file.
e. Use "SPDX-License-Identifier: UNLICENSED" for non-open-source code. Please see https://spdx.org for more information.
--> project:/contracts/Campaign.sol
```

```
> Artifacts written to F:\Simple - Copy\CrowdFunding-Ethereum\Ethereum\build\contracts
> Compiled successfully using:
  - solc: 0.8.4+commit.c7e474f2.Emscripten clang
```

```
Starting migrations...
```

```
=====
> Network name: 'development'
> Network id: 5777
> Block gas limit: 6721975 (0x6691b7)
```

```
1712810719_campaign_factory.js
```

```
=====
Deploying 'CampaignFactory'

> transaction hash: 0x1d9ab5eed594f9cb10c647cb5e6780da4e553bde913ca570f2b4fde8b75c604a
> Blocks: 0           Seconds: 0
> contract address: 0x58eeB17234185136bc210493c540154312d4358C
> block number: 1
> block timestamp: 1712817216
> account: 0x82596A7C6D57cC3064801BE95B4fDB3850C2dAB1
> balance: 99.995051207125
> gas used: 1466309 (0x165fc5)
> gas price: 3.375 gwei
> value sent: 0 ETH
> total cost: 0.004948792875 ETH

> Saving artifacts

> Total cost: 0.004948792875 ETH
```

```
Summary
```

```
=====
> Total deployments: 1
> Final cost: 0.004948792875 ETH
```

CURRENT BLOCK 2	GAS PRICE 20000000000	GAS LIMIT 6721975	HARDFORK MERGE	NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545	MINING STATUS AUTOMINING	WORKSPACE VAST-STRING	SWITCH
--------------------	--------------------------	----------------------	-------------------	--------------------	-------------------------------------	-----------------------------	--------------------------	--------

MNEMONIC ?  
oven theme earth fork second pudding ball prevent else say can brown

HD PATH  
m44'60'0'0'account\_index

ADDRESS	BALANCE	TX COUNT	INDEX	🔑
0x82596A7C6D57cC3064801BE95B4fDB3850C2dAB1	99.99 ETH	1	0	🔑
0x3ADe89258DCCb1918BD9003E3Da09D2141376Ab7	100.00 ETH	0	1	🔑
0xc32084A8a9E503430294BEf8187d6d5c68d3b743	100.00 ETH	0	2	🔑
0xc98917cb1401D5C41fc900357C1Ec0De58dca25d	100.00 ETH	0	3	🔑
0x9eB51d14F5Cbe4900C94dF0055856f6F915551De	100.00 ETH	0	4	🔑
0xB85fCfa63b86D24E0575d04BeA7d22Bdc3479583	100.00 ETH	0	5	🔑
0x167F5b14591DB7a0360eDA35056E77F92EC3F072	100.00 ETH	0	6	🔑

ACCOUNTS BLOCKS TRANSACTIONS CONTRACTS EVENTS LOGS

SEARCH FOR BLOCK NUMBERS OR TX HASHES

CURRENT BLOCK 2 GAS PRICE 20000000000 GAS LIMIT 6721975 HARDFORK MERGE NETWORK ID 5777 RPC SERVER HTTP://127.0.0.1:7545 MINING STATUS AUTOMINING WORKSPACE VAST-STRING SWITCH

## Ethereum F:\Simple - Copy\CrowdFunding-Ethereum\Ethereum

NAME	ADDRESS	TX COUNT
Campaign	Not Deployed	0
CampaignFactory	0x58eeB17234185136bc210493c540154312d4358C	0

CURRENT BLOCK 2	GAS PRICE 20000000000	GAS LIMIT 6721975	HARDFORK MERGE	NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545	MINING STATUS AUTOMINING	WORKSPACE VAST-STRING	SWITCH	⚙️
--------------------	--------------------------	----------------------	-------------------	--------------------	-------------------------------------	-----------------------------	--------------------------	--------	----

← BACK

## CampaignFactory

ADDRESS  
0x58eeB17234185136bc210493c540154312d4358C

BALANCE  
0.00 ETH

CREATION TX  
0x1d9AB5EeD594f9CB10c647cb5e6780da4E553bdE913CA570f2B4FDE8b75c604A

## STORAGE

```
▼ { 1 item
  ▶ deployedCampaigns : [ . . . ] 1 item
}
```

## TRANSACTIONS

NO TRANSACTIONS

## EVENTS

NO EVENTS

# Challenges and Solutions

# Challenges and Solutions

## Challenges

## Solutions

- Gas fees: Complex functions like approveRequest led to high gas costs

- Gas Optimization: Simplified data structures and reduced redundant state changes

- Security: Ensuring secure release of funds

- Security: Contributor can finalize request

# Conclusion

## Summary

- The decentralized crowdfunding platform offers more transparency, reduced gas fees, and backer empowerment
- Blockchain technology allows fund management without intermediaries, ensuring secure and fair handling

## Key takeaway

- This DApp demonstrates the potential for smart contracts to transform crowdfunding, building a more trustful and transparent ecosystem