

# BetCoin

BETTING ON THE WISDOM OF THE CROWD



# Meet the Team



**Apurva Harsulkar**  
*Smart Contracts*



**Kevin Hou**  
*Smart Contracts*



**Colby Meline**  
*Frontend*



**Joel Nail**  
*Project Management*



**Yang Wang**  
*Infrastructure*

# Agenda

01

**Problem Statement**

02

**Project Novelty**

03

**System Architecture**

04

**Smart Contract Design**

05

**Client & UX/UI**

06

**Security & Deployment**

07

**Future Work Required**

08

**System Demo**



# Problem Statement

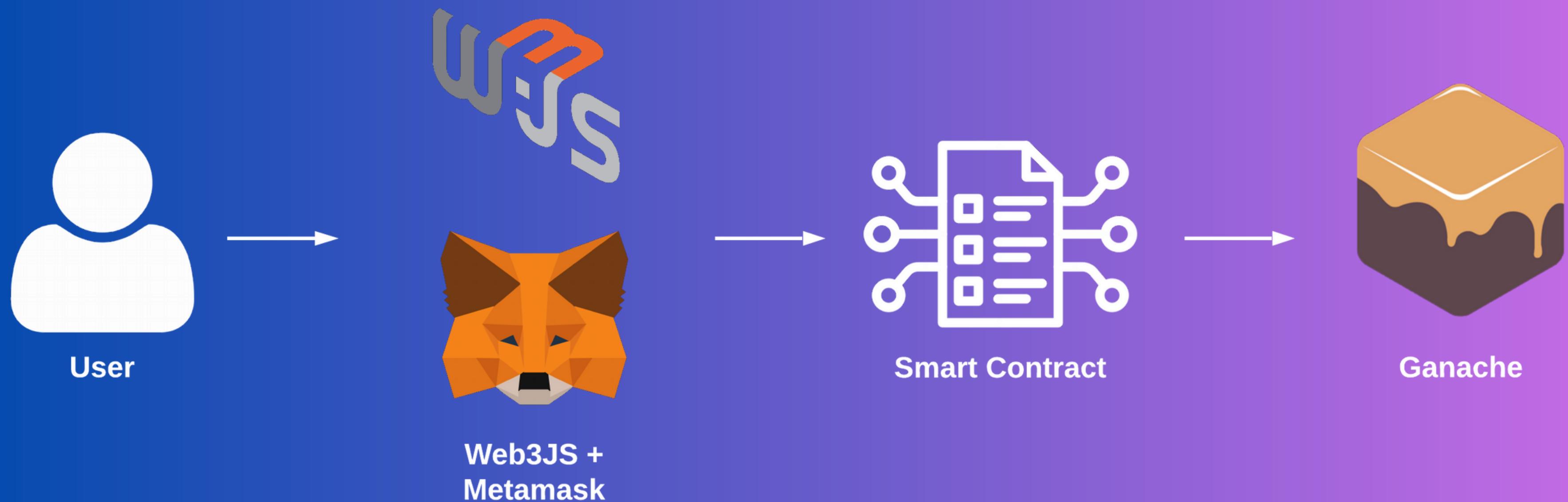
Traditional surveying methods are expensive and offer limited insights. Current digital polling apps are limited in scope and do not offer incentives for the users who vote on polls. By allowing users to place wagers on the outcome of polls, BetCoin provides a recurring stream of funds which is used to ensure that all users receive an incentive for platform participation

# Project Novelty

There are many applications that can be used to publish polls, and there are numerous betting sites available to users. However, there are no platforms that currently allow for betting on the outcome of polls created by other users



# BetCoin System Architecture



# Smart Contract Design

All functionality is included within a single smart contract. Structures are created and events are emitted when primary functions are triggered

## Primary Functions

1. Create Poll
2. Vote on Poll
3. Bet on Poll

```
mapping(uint => Poll) public polls;
uint[] public pollCounts;

function createPoll(uint _startTime, uint _endTime, string _options) {
    _startTime = block.timestamp;
    _endTime = block.timestamp + 86400;

    require(_endTime > _startTime, "Invalid poll end time");
    require(_options.length > 1, "At least two options required");

    uint numChoices;
    numChoices = _options.length;
    //uint[numChoices] memory choiceCountsArray;

    uint[] memory choiceCountsArray = new uint[](numChoices);
    //for (uint i = 0; i < numChoices; i++) {
    //    choiceCountsArray.push(0);
    //}

    Poll storage newPoll = polls[pollCount];
    newPoll.creator = msg.sender;
    newPoll.startTime = block.timestamp;
    newPoll.endTime = block.timestamp + 86400;
    newPoll.choices = _options;
    newPoll.choiceCounts = choiceCountsArray;
    pollCounts.push(1);
}
```

# Client & UX/UI

The desired frontend of our web app connects with the BetCoin smart contract via Web3JS and Metamask. React JS and TypeScript were used to design the user interface. Currently, our frontend is nonfunctional, but mockups have been created to demonstrate our desired UX/UI

```
const SurveyLookup: React.FC = () => {
```

```
    const [pollId, setPollId] = useState<string>("");
    const web3 = new Web3(Web3.givenProvider || "ws://");
    var Contract = require('web3-eth-contract');
    var contract = new Contract(betcoin_json_interf
```

```
    const handleInputChange = (
```

```
        event: React.ChangeEvent<HTMLInputElement>
```

```
): void => {
```

```
    setPollId(event.target.value);
```

```
};
```

```
    const handleSubmit = (event: React.FormEvent<HTML
```

```
        event.preventDefault();
```

```
        console.log(pollId);
```

```
        setPollId("");
```

```
        console.log(contract.methods.getPollInfo().send());
```

```
    );
```

```
    return (
        <div className="p-1">
            <form onSubmit={handleSubmit}>
                <input type="text" value={pollId} onChange={e => setPollId(e.target.value)} />
                <input type="submit" value="Fetch Survey" />
            </form>
        </div>
    );
}
```

# BetCoin

Home



What would you like to ask?



Create Poll



Home



Explore



Notifications



Messages



Bookmarks



Lists



Profile



More

Create Poll



Kieron Dotson and Zack John voted on

**General Motors** @gm ·12h remaining

Which of the following features would you prioritize in your next vehicle purchase? #TellMeAboutYou

Bet

Fuel efficiency and eco-friendliness, such as hybrid or electric engine options.



Advanced safety features such as automatic emergency braking, blind-spot monitoring, and lane departure warning systems.



In-car technology, such as built-in navigation, smartphone integration, and wireless charging.



Comfort and convenience features, such as heated seats, power-adjustable seats, and a sunroof.



Performance features, such as turbocharged engines, all-wheel drive, and sport-tuned suspensions.



Send



Buster Kenson and Zack John voted on

**Marvel Studios** @marvel ·12h remaining

Marvel Studios is constantly expanding its cinematic universe with new films, but there are still many characters and storylines that have yet to make it to the big screen. Which of the following unmade Marvel movies would you be most excited to see?

Bet

Tree Boy



Liquid Launcher



Techno Man



The Vulcan



# BetCoin Web App UI Mockup

The UI for BetCoin was modeled after Twitter's interface since we derived inspiration from Twitter's polling feature. The details of the mockup still need to be revised, but the main functionality of creating, voting on, and betting on polls is represented



Jessica Bell  
@afonsoinocente

...

# BetCoin Mobile App UI Mockup

Similar to the web app mockup, the design for our mobile app UI is also based on the design of Twitter. Although we do not intend on building a mobile application any time soon, we wanted to demonstrate how well our project would adapt to a mobile environment

The image shows a screenshot of the BetCoin mobile application interface. At the top, there's a header with the BetCoin logo, a user profile picture, the time (9:41), signal strength, battery level, and a blue star icon.

**General Motors Poll:** Kieron Dotson and Zack John voted on "Which of the following features would you prioritize in your next vehicle purchase? #TellMeAboutYou". The poll includes five options with radio buttons:

- Fuel efficiency and eco-friendliness, such as hybrid or electric engine options. (Selected)
- Advanced safety features such as automatic emergency braking, blind-spot monitoring, and lane departure warning systems.
- In-car technology, such as built-in navigation, smartphone integration, and wireless charging.
- Comfort and convenience features, such as heated seats, power-adjustable seats, and a sunroof.
- Performance features, such as turbocharged engines, all-wheel drive, and sport-tuned suspensions.

A blue "Bet" button is located to the right of the poll options. Below the poll are standard social media sharing icons (Send, Bookmarks, Share).

**Marvel Studios Poll:** Zack John voted on "Marvel Studios is constantly expanding its cinematic universe with new films, but there are still many characters and storylines that have yet to make it to the big screen. Which of the following unmade Marvel movies would you be most excited to see?". The poll has been completed.

At the bottom of the screen are the standard iOS navigation icons: Home, Search, Notifications, and Wallet.

A large, metallic padlock is positioned in the center of the slide. The lock is intricately designed with a pattern of green and blue glowing circuit boards and microchips. It is set against a background of a dense, glowing blue circuit board pattern, creating a futuristic and high-tech theme.

# Security & Deployment

Our smart contract does not yet encrypt votes when sending data from one layer to the next. Additionally, we need to assess our functions for code errors that would allow users to manipulate the smart contract e.g, functions that are public rather than private, etc. We have attempted local deployments of our smart contract, but we have not yet performed a full scale deployment

# Future Work

**There are many considerations for the future scope of our project:**

- Finalize frontend and connect all aspects of architecture to create a functioning web app
- Implement protections against users trying to manipulate the system
- Encryption of votes and other security measures
- Provide users with rewards for voting on polls
- Additional functionality such as improved UX/UI, poll categories, different betting options, etc.



# Smart Contract Demo

(does it actually work?)