

Prophecy

1. Objective

Prophecy is an application that allows users to bet on future events. Each user owns some pebbles, that they can use to place bets on chosen future events in hope of doubling their stake if they are right.

An example use case to describe the system: Alice wants to open a bet on whether the price of bitcoin will reach 100.000 USD before 2025. She sets the betting period to last until end of March. Bob and Delphine have each 100 pebbles. They bet respectively 40 and 30 pebbles on YES. To diversify, Alice votes 30 on NO. At some point after closing of the bet time, Alice can confirm the result of the bet (given that the bitcoin did indeed reach 100.000 or not) and all winners double their bet, whereas everyone else loses all pebbles they bet.

2. Features

The following must be implemented in your system:

- A new currency: the Pebble.
- A system of ownership of bets inside the smart contract: a creator of a bet has the full rights to close it once the event has been observed.
- Functions to create a bet and view specific information about the bets.
- Any user can see which bets are trending using a function that ranks bets on their amount of staked pebbles.
- Your smart contract should support multiple bets opened at the same time, as well as allowing more than two outcomes for a single bet (not just YES/NO).
- Redistribution of pebbles once the bet is closed should be automated.

3. Hints

- You can either do everything on a single contract or split the workload between a smart contract and the blockchain itself.
- Think carefully about how you can implement time constraints in your smart contract. Don't hesitate to modify the way smart contract are implemented on your blockchain.
- The more is handled procedurally on your contract, the better
- Be careful that any staked pebble on a bet should not be in control of their owner anymore: I should not be able to get my pebbles back between bet period and resolution time.
- Users should not be able to bet pebbles they do not own.