

HEADS TAILS LITEPAPER

HEADTAILS.XYZ

HeadsTails is building the future of prediction betting on the Binance Smart Chain.
Users can bet on the future of real-world events, and win crypto.

*Not available to users in USA, Costa Rica and other restricted territories.
Adhere to your local laws and regulations before participation.*

ABOUT HEADSTAILS

HeadsTails is a community-powered platform for betting on the predictions of real-world events using cryptocurrency. Topics span a range of categories, including politics, world events, sports, science, public health, and more.

Unlike other prediction betting implementations, HeadsTails provides a simpler, more exciting, and trustless experience. Every topic is a yes-or-no question. Users simply bet on whether they think the answer to the question is YES or NO. Once the event transpires, the entire pool of funds is split amongst those who bet on the winning side, governed by a transparent smart contract.

TRUSTLESS TOPIC RESOLUTION

Every question has a verifiable end date. HeadsTails must resolve the question and select the winning side within 7 days of the question end date. If this is not completed on time, users can freely unstake their tokens. This feature is built into the smart contract.

This ensures that when users take part in a question, it will either result in the winnings distributed to the users or the funds claimed back by the users. HeadsTails cannot keep funds in the event a resolution is not reached.

USER TOPIC SUBMISSION

Users can suggest their own questions for the community to predict and bet on. If a user-submitted question is listed on the site, the submitter gets a share of the total prize pool (up to 2%).

USER ENGAGEMENT

The platform has a points system. A user gets ranking points for winning bets. A global leader board shows the top-ranking players. Monthly prizes will be on offer to top performers.

Users can also visit and view the dashboard of other users to see what questions they are taking part in.

INFLUENCER READY

Are you someone with a large community or userbase and want to settle an argument, challenge or bet? Why not put your money where your mouth is and create a question on HeadsTails? You can then rally your community to take part while earning up to 2% of the prize pool no matter what the outcome. You win something even if you lose the bet!

ADVERTISING

Users can book ad slots to advertise across the whole platform. Be seen by a worldwide audience and grow your project with the HeadsTails community.

TECHNICAL DETAILS

HeadsTails (HT) is built on the Binance Smart Chain (BSC) which enables users to easily participate by paying very low gas fees. The main currency on the platform is BUSD (BEP20) tokens but it also has the capability to support any BEP20 token including BNB.

HEADSTAILS PROTOCOL

- Connect your wallet to the website.
- Ensure you have BUSD (BEP20) tokens in your wallet and BNB (BEP20) for paying gas fees.
- Choose an open prediction topic.
- Pick your side (Yes/No).
- Stake your tokens.
- Wait for the timer to end.
- The outcome is revealed.
- HT takes 25% of the losing pool as a development commission.
- If the question was community submitted, their commission (ranging from 0.01% to 2% of the total pool) is sent directly to their wallet.
- The winning side gets the remaining funds, weighted by how much they staked.

All questions are settled within 7 days of the end date. If not, users can unstake their tokens.

Stakers are needed on both sides of the question for a market to resolve successfully. If a question ends with 0 stakers on either side (Everyone predicted YES but nobody predicted NO), it is cancelled automatically. Users can then unstake their tokens.



PROTOCOL EXAMPLE

QUESTION: Will France win the 2022 Football World Cup ?

YES or NO

5 participants take part in YES and 5 participants take part in NO.

Players who choose YES

Players who choose Team 1:

User	Stake (BUSD)
A	200
B	500
C	400
D	100
E	300
Total	1500 BUSD

Players who choose NO

Players who choose Team 2:

User	Stake (BUSD)
F	200
G	700
H	500
I	200
J	400
Total	2000 BUSD



RESOLUTION

When the timer ends, HT verifies the correct answer using the authorized source and marks NO as the winner.

Total Pool Earnings: 1500 (Team 1) + 2000 (Team 2) = 3500 BUSD

HT Commission: 25% of the losing pool (Team 1 Total) which is 375 BUSD. This equates to roughly 10% of the entire prize pool.

The HT smart contract allows HT commission to be set from 1% to 30% max from the losing pool. The current commission is 25% and any changes will be communicated to the community well in advance.

Therefore, the Total Prize Pool to be awarded to winners is 3125 BUSD.

When a winning answer is selected, the HT Smart Contract does the following:

1. 375 BUSD is reserved for HT.
2. Users A - E, lose their funds.
3. 3125 BUSD is awarded to users F, G, H, I & J.
4. Users F - J can now claim their winnings (they pay the gas fee for claiming their winnings)

The formula for calculating winnings is:

S = Sum of Winning stake pool

P = prize pool after commission

U = the amount a user staked

A user's individual prize is $(U / S) * P$

In our example:

- S = 2000
- P = 3125
- U = (Staking amounts of users F - J)



Actual Winnings

User	Stake (BUSD)	Winnings (BUSD)
F	200	$(200/2000) * 3125 = 312.5$
G	700	$(700/2000) * 3125 = 1093.75$
H	500	$(500/2000) * 3125 = 781.25$
I	200	$(200/2000) * 3125 = 312.5$
J	400	$(400/2000) * 3125 = 625$
Total Staked: 2000 BUSD		Total Awarded: 3125 BUSD

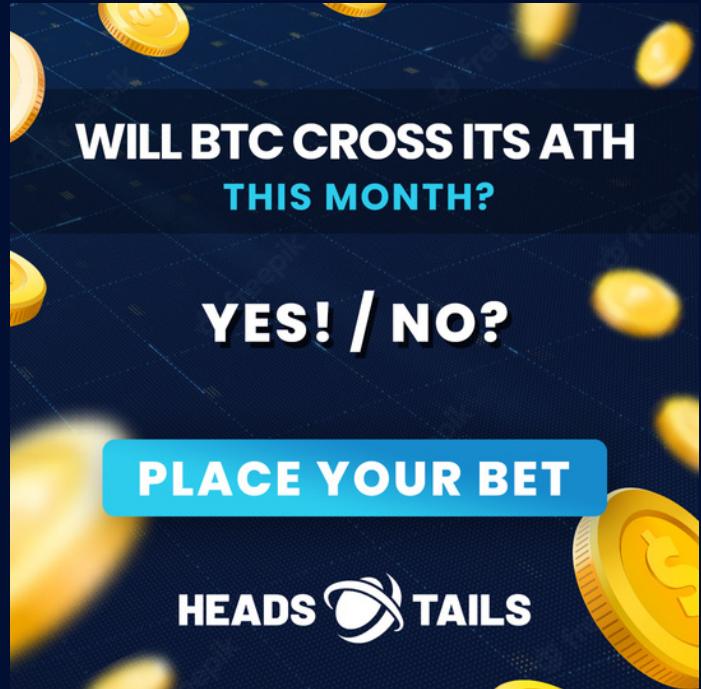
Note: This example does not show the submitter commission. If this question was submitted by a community member, they would get a part of the pool as a reward. Let's assume that the submitter's reward at the time is 1% (the value can only be 0.01% to 2% max of the Total prize pool), their commission would be \$35 (1% of \$3500). HT commission would then be reduced to \$371.25. The total prize pool would then become \$3093.75 and all winner's winning amounts would be reduced slightly.



SOCIAL MEDIA ENGAGEMENT

Follow HeadsTails at <https://twitter.com/headstailsxyz>

Join the conversation at t.me/headstailsxyz



Advertise posts



Price predictions



Engage with friends

Real life events

SECURITY DETAILS

- HeadsTails is a registered tech start-up based in Costa Rica.
- The site is optimised for desktop and mobile devices and uses HTTP & SSL for a secure user experience.
- The website allows wallet connect functionality using Meta Mask and Wallet Connect.
- Secure wallet signing is used to ensure no middle man or bad actor can intercept the message when you connect to the HeadsTails website.
- A resolution source is always quoted to ensure that the winning answer for any event is retrieved from a reliable provider.
- HT only takes a commission from the losing side. This is to ensure that at times when user participation in a question is low, the winners are guaranteed a return and do not end up losing funds, even after winning.
- As the resolution lies at the hands of the HT team (to pick the winning answer and distribute the winnings), there is a centralisation factor. But the Smart Contract takes care of this issue. If HT fails to resolve a question and pick a winning side within 7 days, users can unstake their tokens. This way, when you take part in a question, you will either win the prize pool (if you get the answer right), lose your funds (if you get the answer wrong) or unstake your tokens if HT does not resolve the pool in a timely manner. HT cannot keep hold of your funds by not resolving a question.
- HeadsTails commission is set to 25% of the losing pool. It is hardcoded in the smart contract to not go above 30%. HeadsTails cannot set this value to say 100% and keep all the prize money.
- If you submit a question, you can win part of the prize pool. This submitter's commission value is hardcoded in smart contract to be up to 2% max of the entire prize pool.
- A security audit will be done to ensure the smart contract has no vulnerabilities.
- The version of Solidity used to create the Smart Contract is the latest (at the time of development) to ensure any minor or major bugs reported at the time did not leak into the code.

SUMMARY OF SMART CONTRACT WRITE METHODS

Method	Requirements
addStakeToken	<p>Admin Only function.</p> <p>Any BEP20 token can be added by giving</p> <ol style="list-style-type: none">1. tokenAddress2. maxStakeAmount3. minStakeAmount
answerQuestion	<p>Admin can answer question by giving</p> <ol style="list-style-type: none">1. questionId2. Answer (bool)
cancelQuestion	<p>Anyone can cancel question IF the timer has ended and either Yes or No options has 0 stakers</p>
createQuestion	<p>Admin Only function to create a question</p> <ol style="list-style-type: none">1. tokenToUseInQuestion (BUSD, BNB, Any BEP20 Token)2. endDate3. questionID for DB4. submitterWalletAddress (optional)
harvest	<p>Claim Winnings</p> <ol style="list-style-type: none">1. questionID
renounceOwnership	<p>Give up the rights to contract</p>
setAnsweringPeriod	<p>Number of days for admin to answer question before users can unstake tokens</p> <ol style="list-style-type: none">1. Period (set to 7 days)

setContractFee	Platform percentage. Hardcoded to be 30% max from the losing side total. Set to 25% which is 2500 in uint256
setMaxStakeAmount	<p>Change maxStakeAmount for a given supported token</p> <ol style="list-style-type: none"> 1. Token (address) 2. maxStakeAmount
setMinStakeAmount	<p>Change minStakeAmount for a given token</p> <ol style="list-style-type: none"> 1. Token (address) 2. minStakeAmount
setStakeTokenStatus	<p>Can disable tokens if not in use anymore</p> <ol style="list-style-type: none"> 1. Token (address) 2. status (bool)
setStakeable	<p>If voting for a question must be ended before question end date, setStakeable can be set to false</p> <ol style="list-style-type: none"> 1. questionID 2. stakeable (bool)
setSubmitterFee	<p>Commission given to question submitter. Hardcoded to be 2% max.</p> <ol style="list-style-type: none"> 1. submitterFee
stakeNativeToken	<p>Take part in a question using Native token which is BNB</p> <ol style="list-style-type: none"> 1. stakeNativeToken (PayableAmount in BNB) 2. questionId 3. answer (bool)

stakeToken	Take part in a question using non Native token (like BUSD) 1. questionID 2. answer (bool) 3. stakeAmount (uint256)
transferOwnership	Transfer ownership to another wallet
unstake	Unstake from a cancelled question



HIGH-FIDELITY HOMEPAGE MOCKUP - HEADSTAITS.XYZ

The mockup displays the homepage of Headstaits.xyz with a dark blue background featuring abstract light blue and teal geometric shapes.

Header: The top navigation bar includes the "HEADS TAILS" logo, a "Markets" dropdown, a search bar with placeholder "Search by Question, Title", a magnifying glass icon, a "Connect" button, and a clipboard icon.

Main Section: A large banner on the left features the text "HEADS or TAILS" in large blue letters, followed by "INVEST IN THE FUTURE" in smaller white letters. Below this is a blue button labeled "Explore". On the right, a circular interface displays a question: "Will the price of BTC move by 20% this week?", with a volume of "\$500,978". Two buttons at the bottom of the circle are "Yes" (green) and "No" (red).

Powered by: Binance Smart Chain BUSD

Central Buttons: Three main buttons: "FIND YOUR TOPIC" (Select the question you want), "STAKE" (Stake your tokens), and "FLIP" (Flip and see the results).

Topic Categories: A grid of buttons for various topics: Art, Business, Health, Crypto, NFTs, US Politics, Global Politics (highlighted in green), Pop culture, Science, Sports, Tech, US Affairs, and Global affairs.

Statistics: Three summary boxes: "Total Winnings Distributed \$100m", "Total Live Markets 100", and "Total Users 200k".

Bottom Section: "Top Trending" questions and "User Rankings".

- Top Trending:**
 - Do you think BTC will hit... \$500,978 Yes 20% 01:24:10:07 04-05-2022
 - Will Jack Dorsey reveal... \$20,944 Yes 20% 01:24:10:07 04-05-2022
 - Will the US earn Gold in... \$95,004 NO 80% 01:24:10:07 04-05-2022
- User Rankings:**

Rank	User	Level	Winning Percentage	Earned
1.	Warlock	Beginner	50% 25 Wins	\$200K Earned
2.	Wizard	Beginner	50% 25 Wins	\$200K Earned
3.	Oracle	Beginner	50% 25 Wins	\$200K Earned
- Advertisements:** Two large rectangular boxes labeled "ADVERTISEMENT 1" and "ADVERTISEMENT 2".

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