

Screening Survey	1
Pre-Survey	3
User Experiment	5
Task 1: Account Creation	5
Qual questions	6
Task 2: Import Login account from a different device	6
Qual questions	6
Task 3: Recover the Account (use case: lost device, forget credential)	6
Qual questions	7
Exit Interview	7
Section 1: Experience and Perception of the wallets tested	7
SUS Survey & Likert Scale	8
SUS	8
Task Specific (User experience in likert scale)	8

## Screening Survey

Q1. Have you owned any cryptocurrency?

- Yes
- No

Q2. Have you used any cryptocurrency wallet?

- Yes
- No

Q3. Have you used any crypto exchange(s)? (select all that apply)

- None
- Coinbase
- Binance
- Uniswap
- Sushiswap
- Others (please specify)

Q4. Are you interested in using crypto wallets?

- Yes
- No

Q5. Have you used any crypto wallets on your browser? (select all that apply)

- None
- Coinbase wallet
- Binance wallet
- MetaMask wallet
- Trust wallet
- Others (please specify)

Q6. Have you used any crypto wallets on your mobile phone? (select all that apply)

- None
- Coinbase wallet

- Binance wallet
- MetaMask wallet
- Trust wallet
- Others (please specify)

Q7. Which wallet you have used most often?

- None
- Coinbase wallet
- Binance wallet
- MetaMask wallet
- Trust wallet
- Others (please specify)

Q8. How long have you used this aforementioned crypto wallet?

- < 1 week
- 1 week~1 month
- 1~6 months
- 6~12 months
- 1~2 years
- > 2 years
- Others (please specify)

Q9. How often do you use the aforementioned crypto wallets **on your mobile/browser**?

- Daily
- Several times a week
- Once a week
- Several times a month
- Once a month
- Rarely or never

Q10. What is your gender?

- Male
- Female
- Other \_\_\_\_\_

Q11. What is your age?

- Below 18
- 18-25
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or above

Q12. What is your highest level of educational achievement?

- Less than high school
- Some high school
- No diploma
- High school graduate
- Diploma or the equivalent (for example, GED)
- Some college credit
- No degree
- Trade/technical/vocational training
- Associate degree
- Bachelor's degree

- Master's degree
- Professional Degree
- Doctorate degree
- Other (please indicate)

Q13. What is your occupation?

Q14. Which country do you live in? \_\_\_\_\_[text input]

Q15. If you are still interested in the study, please enter your phone or email\_\_\_\_\_

Q16. Where did you hear about this study?

- Crypto Forum. Specify\_\_\_\_\_
- Word of mouth
- Twitter
- Others

## Pre-Survey

1. Do you have a college degree or work experience in computer science, software development, web development or similar computer-related fields?
  - Yes
  - No
2. Please rate the level of agreement with the following statements– (1: Completely disagree; 2: somewhat agree, 3: neither agree nor disagree, 4: somewhat agree, 5: completely agree )
  - a. I am “Tech” savvy
  - b. People consider me as “Tech” Savvy
  - c. People often ask me for help when troubleshooting for technical problems
  - d. I am usually the first of my friends and family to try a new type of technology
  - e. Others \_\_\_\_\_
3. Please select all the crypto wallet that you used before.
  - Never used a crypto wallet
  - Coinbase wallet
  - Binance wallet
  - MetaMask wallet
  - MyEtherWallet
  - Trust wallet
  - Ledger: Hardware / cold wallet
  - Others (please specify)
4. Do you know what types of wallets you use currently?
  - a. Custodial Wallet
  - b. Non-custodial Wallet
  - c. Others (please specify)
5. Do you know the difference between Custodial vs. Non-custodial?
  - a. Yes
  - b. No
6. Watch this video to better understand the different between custodial and non-custodial crypto wallet.
  - a. [▶ Custodial vs Non Custodial Wallets](#)

7. Explain your understanding of the difference between Custodial vs. Non-custodial crypto wallet? \_\_\_\_\_
8. Which followings are correct to the best of your knowledge? [Please select all that apply]
  - a. Non-custodial wallet holds on to the user's private key, so it is MetaMask's responsibility to safeguard the user's crypto assets.
  - b. Non-Custodial crypto wallets are more vulnerable to hackers than non-custodial wallets
  - c. MetaMask is a custodial crypto wallet.
  - d. Custodial wallet holds on to the user's private key, so it is MetaMask's responsibility to safeguard the user's crypto assets.
  - e. Custodial crypto wallets are more vulnerable to hackers than non-custodial wallets
  - f. MetaMask is a non custodial crypto wallet.
9. Which of the following best describes you?
  - a. I am most skilled in protecting keys and wallets on my own
  - a. I am competent in self-protection, but I still have security concerns
  - b. I am not confident in self-protecting my wallet
  - c. Others (please specify)
10. Please rate your **self-efficacy** for the following statements (1: not confident at all, 5 - very confident)
  - a. I am able to protect my private keys from being stolen
  - b. I am able to prevent unauthorized access to my crypto wallet
  - c. I have the technical skills and time to secure and prevent the theft of my crypto assets
  - d. I find it easy to secure my crypto wallet
11. Did you encounter any negative experiences when using a crypto wallet before?
  - a. Yes
  - b. No
  - c. Others (please specify)
12. What types of negative experiences have you had with the crypto wallet before? (Select all that apply)
  - a. I forgot the password to my wallet account,
  - b. I lost the device where I had my wallet logged in
  - c. I lost money/funds since I couldn't recover my wallet
  - d. I was not able to recover my Wallet
  - e. I lost money/funds due to fraud/attack
  - f. Others (Please specify)
13. Please rate your curren/prior **user experience** (if any) for each wallet for usability. 1: least usable, less usable, neutral, more usable, 5: Most usable]
  - a. Custodial (coinbase/kucoin wallet)
  - b. Non-Custodial (meta mask wallet)
  - c. Committee-based wallet (sequence wallet)
  - d. Other (please specify)
14. Why do you think the wallet you chose as most usable in the earlier question? [open text]
15. Please rate the **level of security** for each wallet based on your understanding. 1: least secure, less, neutral, more, 5: Most secure]
  - a. Custodial (coinbase, kucoin Wallet)

- b. Non-Custodial (meta mask wallet)
  - c. Committee-based wallet (sequence wallet)
  - d. Others (please specify)
16. Why do you think the wallet you chose as most secure in the earlier question? [open text]
17. Please rate the **level of trustworthiness** for each wallet. 1: least trustworthy, less, neutral, more, 5: Most trustworthy]
- a. Custodial (coinbase, kukoin wallet)
  - b. Non-Custodial (meta mask wallet)
  - c. Committee-based wallet (sequence wallet)
  - d. Others (please specify)
18. Why do you think the wallet you chose as most secure in the earlier question? [open text]
19. Please rate your perceived **level of risk** for each wallet. 1: least risk, less, neutral, more, 5: Most risk]. You can **think of an example** where the risk can be “you lost the password, or you lost your device and can't access your money/fund anymore”
- a. Custodial (coinbase, kucoin wallet)
  - b. Non-Custodial (meta mask wallet)
  - c. Committee-based wallet (sequence wallet)
  - d. Others
20. Why do you think the one you chose is the most-risky? [open text]
21. Please provide the participants id that you received from researcher.---

## User Experiment

Hi, my name is [name]. I am a researcher from X. Thanks for taking the time to join us for the study. Let me start by telling you a bit about this project and what we are trying to do. Today we invite you to try out a couple of crypto wallets and share your experience using them.

This study includes a few tasks for you to perform and an exit interview and filling out SUS survey. Please think aloud when conducting the tasks, telling me your thoughts as you perform these tasks, like “what seems difficult/easy to understand.”. After you complete each task, I will ask you some questions to get a better understanding of your experience.

### Task 1: Account Creation

**Assumption:** We are a new or experienced crypto wallet users. You heard about this wallet from your friends. You would like to use this. First you would like to learn about the, therefore you decided to watch the general video about the wallet to understand the overall concepts. Assume that this wallet support same number of crypto currency in difference chains.

#### Knowledge Question after watching video for each wallet

- Is it a centralized or decentralized wallet? why?
- It is cutodial or non custodial? why?

## Qual questions

- How was your experience with the account creation process? Could you share your impressions of the account creation process? Ask why questions.
- Which aspects of the account creation process did you find easy? Which aspects did you find difficult? Why?
  - If confusing, what were they, and what made them confusing to you?
- How many authentication methods (such as password, seed phrase) did you encounter while creating your account?

## Task 2: Import Login account from a different device

**Assumption/scenario:** Assume you are travelling and you don't have your laptop with you. You need to log in your wallet from your mobile phone or other personal device. You don't have the wallet installed in these device. Now login or import your wallet from this new device. Note that you remember your necessary credentials with you to import/login to your wallet.

- Do you have a different mobile device or desktop, computer than the one you just used?
- If not, Please open a new browser than the one you previously used
- Now imagine you are using a different device and must log in to the wallet again.
- Now go through the login/import phase to login back into your wallet

## Qual questions

- In your opinion, how efficient was the process for logging into existing accounts from a different device? Could you share your impressions of the account importing process? Ask why questions.
- Which aspects of the account import process did you find easy? Which aspects did you find difficult? Why?
  - If confusing, what were they, and what made them confusing?

## Task 3: Recover the Account (use case: lost device, forget credential)

Now delete the password if you have written it down somewhere or saved it somewhere. Please open a new browser than the one you previously used. Let's assume that you have forgotten one or more factors: evenly distribute factor among participants

Now assume—

(a) you forgot your **password saved** and its not saved in other places (Wallet A, B, C)

(b1) you have your password, but you have **no longer access to the device you used for 2FA (TOTP)**. Now recover your wallet account (Wallet A and C)

(b2)you **lost your key file** Now recover your wallet account (Wallet B)

- **Wallet A: You** forgot your password and and its not saved in other places or no longer access to the device you used for 2FA (TOTP)
- **Wallet B (Metamask):** Forgot password and and its not saved in other places or lost Key file
- **Wallet C (Ciao)Metamask Wallet:** Forgot password and and its not saved in other places or no longer access to the device you used for 2FA (TOTP)

- Now recover your wallet account.

## Qual questions

- How was your experience with the account recovery process? Could you share your impressions of the account recovery process? Ask why questions.
- Which aspects of the account recovery did you find easy? Which aspects do you find difficult? Why?
  - If confusing, what were they, and what made them confusing?

## Exit Interview

### Section 1: Experience and Perception of the wallets tested

1. [Overall experience] What's your overall experience with the wallet? Likes and dislikes?
2. [Usability] Have you encountered any challenges during any of the tasks? Can you elaborate?
  - a. Was it easy to create an account? Why?
  - b. Was it easy to recover your account? Why?
3. [Security] How do you feel about the security of the wallet?
  - a. How do you feel about using different authentication factors / seed-phrase during the recovery/creation/import? why?
4. [Trust] do you feel this wallet is safe, would you feel comfortable storing your own assets in this wallet? how do you recommend this wallet to your friends and family members? why?
5. (Future improvement) Do you have any suggestions to improve this wallet? What features would you add or revise?
  - a. What features (usability-wise) do you expect in a crypto wallet?
  - b. What features (security-wise) do you expect in a crypto wallet? (What authentication methods?)

I really appreciate all the time you've given me! Is there anything else regarding crypto wallet usability you would like to add?

## SUS Survey & Likert Scale

The scale will be 1-5 where 1: strongly disagree; 2: Somewhat disagree; 3: Neither agree nor disagree; 4: Somewhat agree; 5: Strongly agree

### SUS

1. I think that I would like to use this system frequently.
2. I found the system unnecessarily complex.
3. I thought the system was easy to use.
4. I think that I would need the support of a technical person to be able to use this system.

5. I found the various functions in this system were well integrated.
6. I thought there was too much inconsistency in this system.
7. I would imagine that most people would learn to use this system very quickly.
8. I found the system very cumbersome to use.
9. I felt very confident using the system.
10. I needed to learn a lot of things before I could get going with this system.

### Task Specific (User experience in likert scale)

1. Please rate the level of agreement with the following statements based on your task experience with Task 1: Account Creation. The scale will be 1-5 where 1: strongly disagree; 2: Somewhat disagree; 3: Neither agree nor disagree; 4: Somewhat agree; 5: Strongly agree.
  - a. I found this wallet easy to use
  - b. I would need the support of a technical person to be able to use the wallet
  - c. I found this wallet unnecessarily complex
  - d. I found the account creation straightforward and intuitive
  - e. I am confident that I understand every step of the account creation process
  - f. I found the wallet very cumbersome to use
  - g. I needed to learn a lot of terminologies before I could get going with the wallet
  - h. I would imagine that most people would learn to use this wallet very quickly
  - i. I found this wallet experience similar to my current related application
2. Please rate the level of agreement with the following statements based on your task experience on Task 2: Account Import (from a different device ) . The scale will be 1-5 where 1: strongly disagree; 2: Somewhat disagree; 3: Neither agree nor disagree; 4: Somewhat agree; 5: Strongly agree.
  - a. I am confident that I understand every step of the account import process
  - b. I am confident that I will be able to easily import/login back to my wallet if I change my device
  - c. I am afraid that I would not be able to import my wallet if I lost my current device
  - d. I am afraid that I can lose my fund if I lost my device
  - e. I am afraid that I can lose my fund if I can't import my wallet account
3. Please rate the level of agreement with the following statements based on your task experience on Task 3: Recover the Account (when lost device or forget credential). The scale will be 1-5 where 1: strongly disagree; 2: Somewhat disagree; 3: Neither agree nor disagree; 4: Somewhat agree; 5: Strongly agree.
  - a. I am confident that I understand every step of the account recovery process
  - b. I am confident that I would be able to recover my wallet if I lost my password
  - c. I am confident that I would be able to recover my wallet account if I lost my device or key file
  - d. I am afraid that I would not be able to recover my wallet if I lost my password
  - e. I am afraid that I would not be able to recover my wallet if I lost my device or key file
  - f. I am afraid that I can lose my fund if I lost my password
  - g. I am afraid that I can lose my fund if I lost my device of key file
4. Please rate the level of agreement with the following statements based on your task experience. The scale will be 1-5 where 1: strongly disagree; 2: Somewhat disagree; 3: Neither agree nor disagree; 4: Somewhat agree; 5: Strongly agree.
  - a. I think I would like to use this wallet frequently
  - b. I think I would like to recommend this wallet to my friends and family to use



- c. I found this wallet secure to use
- d. I felt safe using this wallet