

User Study Survey Questions

1. Verbal Password Creation Study

Initial Phase

Q1. What factors or considerations influenced your decision when choosing your verbal password? Please tell us why you chose that particular password.

(User response): _____

Q2. Did you write down your verbal password somewhere?

- ☐ Yes, I did.
- ☐ No, I did not.

Demographic questions

Q1. Which age range do you fall into?

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65+

Q2. With what gender do you identify?

- ☐ Male
- ☐ Female
- ☐ Non-binary/Third gender
- ☐ Prefer not to say

Q3. What is the highest level education you have received?

- ☐ High school diploma or GED
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Academic Doctorate Degree
- ☐ Prefer not to say

Q4. What is your current occupation or job title?

- ☐ Architect
- ☐ Artist
- ☐ Developer
- ☐ Designer

- ☐ Dentist
 - ☐ Doctor
 - ☐ Engineer
 - ☐ Judge
 - ☐ Journalist
 - ☐ Lawyer
 - ☐ Musician
 - ☐ Nurse
 - ☐ Paralegal
 - ☐ Pharmacist
 - ☐ Professor
 - ☐ Student
 - ☐ Teacher
 - ☐ Veterinarian
 - ☐ Writer
 - ☐ Prefer not to say
- Other: (Please specify) _____

Q5. What type of organization do you work for?

- ☐ Academic
 - ☐ Government
 - ☐ Private sector
- Other: (Please specify) _____

Q6. Which of the following best describes your educational background or job field?

- ☐ I have an education in, or work in, the field of computer science, computer engineering or IT.
- ☐ I do not have an education in, nor do I work in, the field of computer science, computer engineering, or IT.
- ☐ Prefer not to say.

Mid- and Long-term Phase

Q1. Since the last test, did you practice writing or remembering your password?

- ☐ Yes
- ☐ No

Q2. On the scale from 1 to 5, how easy was it to remember your password compared to the last time (Part 1)? (1: Very difficult, 5: Very easy.)

- ☐ 1 (Very difficult)

- ☐ 2 (Difficult)
 - ☐ 3 (Neutral)
 - ☐ 4 (Easy)
 - ☐ 5 (Very easy)
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Q3. Have you used any external storage (e.g., memo, notepad, a piece of paper, or any other means) to store your verbal password?

- ☐ Yes
 - ☐ No
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Q4. In which of the following types of services would you use this kind of password?

- ☐ Online shopping and e-commerce platforms
 - ☐ Social media accounts (e.g. Facebook, Twitter, Instagram)
 - ☐ Banking and financial services (e.g. online banking, mobile payments)
 - ☐ Workplace or professional services (e.g. email, project management tools)
 - ☐ Other personal accounts (e.g. email, cloud storage)
 - Other: (Please specify)
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Q5. (When user fails the authentication) You are seeing this question because the authentication process using your password was not successful in the previous step. What do you think is/are the reason/reasons for the failure?

(User response): _____

2. Password Policy Study

Demographic questions used in Study 1 are also used in Study 2, so we do not provide them here. The options that participants can choose to answer Q1 are different for TP-LB and the two verbal password policies (*i.e.*, VP-L and VP-LB).

Initial Phase

(For TP-LB) Q1. Think of the password you created in this study. What were the strategies you used for creating your password? Please pick all that apply.

- ☐ I used a random word or random words.
- ☐ I made it long enough.
- ☐ I picked something not related to this website or survey.
- ☐ I used personal information (e.g., name, date or year of birth, phone number, etc.)
- ☐ I replaced letters with numbers or symbols (e.g., leet → 1337).

Other: (Please specify)

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(For VP-L and VP-LB) Q1. Think of the verbal password you created in this study. What were the strategies you used for creating your password? Please pick all that apply.

- ☐ I used words or phrases that are simple and easy to remember.
- ☐ I randomly chose words or phrases without any design considerations.
- ☐ I used words or phrases related to what I enjoy (hobby/entertainment/food/game/etc.)
- ☐ I used words or phrases that are obscure or unique.
- ☐ I used words or phrases that are personally meaningful to me.

Other: (Please specify)

Q2. How many passwords are you willing to generate and memorize?

- ☐ Only 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

Q3. Did you write down your password somewhere?

- ☐ Yes, I did. ☐ No, I didn't.
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Mid- and Long-term Phase

Q1. Since the last test (Part 1), did you practice writing or remembering your password?

- ☐ Yes
- ☐ No

Q2. What methods did you use to practice? Please tick all that apply.

- ☐ Re-typing on a smartphone
- ☐ Re-typing on a tablet PC
- ☐ Writing on a piece of paper
- ☐ Keep repeating it in my head several times
- ☐ Speaking it out loud several times

Other: (Please specify)

Q3. On the scale from 1 to 5, how easy was it to remember your password? (1: Very difficult, 5: Very easy.)

- ☐ 1 (Much more difficult to remember)
- ☐ 2 (More difficult to remember)
- ☐ 3 (Somewhat easy to remember)
- ☐ 4 (Easier to remember)
- ☐ 5 (Much easier to remember)

Q4. Have you used any external storage (e.g., memo, notepad, a piece of paper, or any other means) to store your password since Part 1? If so, where?

- ☐ Yes
- ☐ No

Q5. In which of the following types of services would you use this kind of password?

- ☐ Online shopping and e-commerce platforms
- ☐ Social media accounts (e.g. Facebook, Twitter, Instagram)
- ☐ Banking and financial services (e.g. online banking, mobile payments)
- ☐ Workplace or professional services (e.g. email, project management tools)
- ☐ Other personal accounts (e.g. email, cloud storage)

Other: (Please specify)

(When use fails to authenticate) Q6. You are seeing this question because the authentication process using your password was not successful in the previous step. What do you think is/are the reason/reasons for the failure?

(User response): _____
