

For brevity, we write Animal/Country/Colours instead of producing three nearly identical question sets (differing only in the assigned dictionary). Each participant was only exposed to the dictionary assigned to them.

Please type in your ProlificID before proceeding:

Welcome back!

In the previous survey, you received two passwords: one main password and a second thematic password. In this survey, you will be entering these two passwords exactly as you received them and answering some general questions about them. Before proceeding, we ask for your consent.

Consent Form

Description of research:

The purpose of this study is to investigate how well users remember and understand passwords based on themes, which are intended to protect them against forced login.

Withdrawal:

You can withdraw your consent about being part of the study at any time before the completion of the study, meaning before you submit the survey. In this case your collected data will be deleted by the researchers. For more information on how to withdraw from a study before completion in Prolific, see this link: <https://participant-help.prolific.co/hc/en-gb/articles/360022342094-How-do-I-withdraw-my-participation-in-a-study>. Please note that we cannot delete your data after you have completed the study, since the data we collect is anonymised and we, therefore, have no chance to identify you (unless you choose to disclose identifying information about yourself when using the voting system or answering the questionnaire, in which case your data will be anonymised as described below).

Compensation:

Each participant will receive 2.25 £ at the conclusion of the study through Prolific.

How we handle and delete data: If a participant discloses any personal information about themselves or other people when answering the questionnaire that could lead to identification, the researchers will remove this from the dataset and replace it with a placeholder.

What data we collect:

The participants will be asked to share the following personal data:

- Gender

- Age
- Level of education

We further collect the answers that the participants give to the questions in the questionnaire.

How we use the data: These data will be used to derive statistical measures of users' recall rates, understanding, and errors of theme-based passwords. Furthermore, the data will be used to derive qualitative insights into how users perceive theme-based passwords. The data might be referenced or quoted but not printed in full unless it is completely anonymised in the published research reports and other academic publications.

Who has access to the data: The researchers have access to the original data until it has been edited to replace given personal information with placeholders to anonymise it.

Researchers:

The following researchers from XXX are involved.

XXX

Questions:

For any questions concerning our processing of your personal data, please contact the researchers involved in the project (see contact details above).

I consent to participate as a subject in the research described above. I consent by answering "Yes" and clicking "Next".

(1) Yes

Re-calling of Main password

In the first part of this survey, we will ask you to recall your main password, which you received in the previous survey.

**1) Please enter your main password, which you received in the previous survey.
(5 attempts)**

Only check the box below if you can't remember your main password.

(1) I cannot remember my main password

Re-calling of Secret Thematic Password

In the next part of this survey, we will ask you to recall your secret thematic password, which you received in the previous survey, and answer a question about it.

1) Please enter your thematic animal/country/colour password, which you received in the previous survey. (5 attempts)

Did you save or store your thematic password, despite the instructions advising against it?

- (1) Yes
- (2) No

Opinion on Thematic Passwords

In this part of the survey, we will ask for your opinion on thematic passwords, which are designed to protect you against unauthorised logins. A thematic password system consists of two components: your main password and your secret thematic password. The secret thematic password is based on a specific theme (e.g., capitals), which you must remember but not write down.

Example:

- **Main Password:** UT6oh26EjplZ
- **Thematic Password:** Berlin

How confident are you that thematic passwords are capable of keeping your online accounts safe against forced login?

- (1) Not confident
- (2) Slightly confident
- (3) Moderately confident
- (4) Confident
- (5) Very confident

Do you feel confident in remembering several different thematic passwords for your online accounts?

- (1) Not confident
- (2) Slightly confident
- (3) Moderately confident
- (4) Confident
- (5) Very confident

Understanding of Thematic Passwords

In this part of the survey, we will ask questions about your understanding of thematic passwords.

**Imagine your theme is "animals" and your theme password is "Dolphin".
Which of the following words would signal that you are being forced to log in?**

- (1) Turtle
- (2) Pizza
- (3) Germany
- (4) Dolphin
- (5) Purple
- (6) None of the above

**Imagine your theme is "countries" and your theme password is "Germany".
Which of the following words would signal that you are being forced to log in?**

- (1) Red
- (2) Pizza
- (3) Germany
- (4) Cat
- (5) Japan
- (6) None of the above

Imagine your theme is "colours" and your theme password is "Red". Which of the following words would signal that you are being forced to log in?

- (1) Brown
- (2) Pizza
- (3) Turtle
- (4) Red
- (5) Japan
- (6) None of the above

Imagine the theme of your second password is "animals/countries/colours". What will happen if you try to log in using the word "pizza"?

- (1) The login will be successful
- (2) The login will fail
- (3) The login will succeed, but you will be asked to provide your main password as well
- (4) The system would prompt you to choose a new theme
- (5) None of the above

Imagine your theme is "animals" and your theme password is "Dog". Which of the following words would signal that you are not being forced to log in?

- (1) Dog
- (2) Pizza
- (3) Turtle
- (4) Red
- (5) Japan
- (6) None of the above

Imagine your theme is "countries" and your theme password is "Japan". Which of the following words would signal you are not being forced to log in?

- (1) Dog
- (2) Sweden
- (3) Pizza
- (4) Red
- (5) Japan
- (6) None of the above

Imagine your theme is "colours" and your theme password is "Red". Which of the following words would signal you are not being forced to log in?

- (1) Dog
- (2) Pizza
- (3) Red
- (4) Japan
- (5) Green
- (6) None of the above

Do you have any thoughts or suggestions on the survey?

Thank you for participating in our survey!