Follow-up study

Candidate nr.

Please enter your candidate nr., which will be used to link the surveys/nettskjemas together (Your candidate nr is sent on the same mail registered for this survey)

Information

Welcome to the last part of my user-studies regarding my thesis!
This survey is divided into three parts:

1. AAG Usability - General

2. AAG Usability - Examples

3. AAG Usability - Personal accounts

(1) In the first part of the survey we will present the term AAG graphs in general, and ask some questions regarding the graphs and whether or not they are understandable
(2) In the second part of the survey you will get a few examples of different AAG graphs, and will be asked to arrange the different "user-accounts"-configurations in correct order in accordance to their security and "risk of loss"
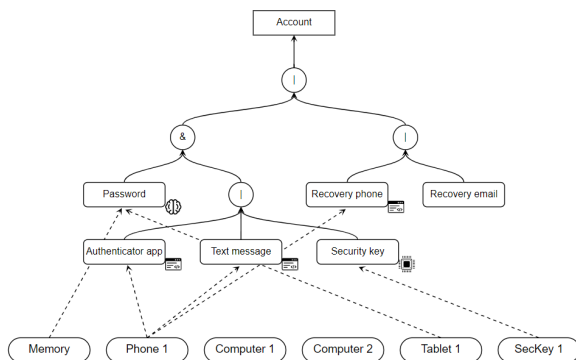(3) In the last part of the survey you will need the pdf document provided in the email, and will be presented questions regarding your own configurations

AAG Usability - General

Account access graph (AAG) example
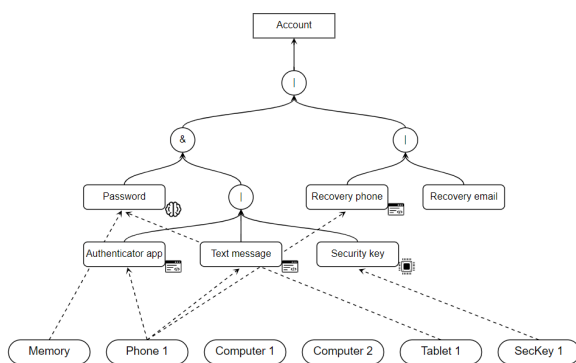
How well would you say you understand the graph above?

Account access graphs (AAG)

An AAG graph is a way of illustrating a user's different authentication methods (i.e. password access,

authenticator app, recovery email etc.), where the account-configuration is represented as nodes (circles and rectangles) in a graph. These nodes can be connected together, creating a simple graph for better understanding of your account configuration.

The different components in the graph can be explained as follows:

Account - Rectangle (Top): The top rectangle represent which user-account we are viewing

Operator - Circles:

- ○ **&:** "And"; both components under an "and"-node must apply
- ○ **| :** "Or"; the components under an "or"-node all applies, but you can choose between which you want to use

Authentication - Rectangle with slightly round edges: Authentication/Recovery methods

Device list - Rectangle with round edges (Bottom): List of all devices the user own

Arrows: Dependencies; Illustrates which devices the different authentication methods are stored on/used with

Symbols/illustrations:

- ○ Book: Knowledge-based authentication (L)
- ○ **Small window:** Software-based authentication (M)
- ○ **Chip:** Hardware-based authentication (H)

L/M/H: Low/Medium/High -score

Further, when looking at the different graphs, we can rate them in accordance with:

Security: Scoring scheme with a scale low, medium and high; which indicates how well the account is secured based on the different nodes and combinations (operators) (e.g. L = Low securty score)

"Risk of Loss": Indicates how many different devices/options a user can lose before losing access to their account (e.g. Risk of loss = 2; If the user lose two devices (e.g connected phone and computer), they have lost access to their account)

On the next two slides you will find two AAG graphs, one for "Account 1", and one for "Account 2". Answer the following questions in relation to the different accounts.

Account 1
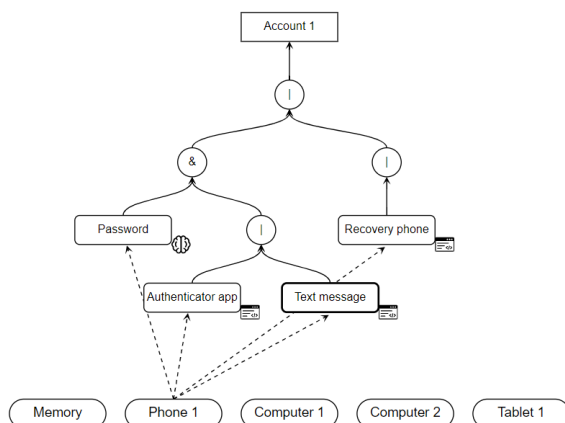
Does this account have 2FA on their account?

Yes

No

What type(s) of 2FA methods does this account use?

This element is only shown when the option 'Yes' is selected in the question 'Does this account have 2FA on their account?'

If the user lost "Phone 1", would this be an issue considered how the account is configured?

Yes

No

If yes, can you explain why?

This element is only shown when the option 'Yes' is selected in the question 'If the user lost "Phone 1", would this be an issue considered how the account is configured?'

If the user lost "Computer 1", would this be an issue considered how the account is configured?

Yes

No

If yes, can you explain why?

This element is only shown when the option 'Yes' is selected in the question 'If the user lost "Computer 1", would this be an issue considered how the account is configured?'

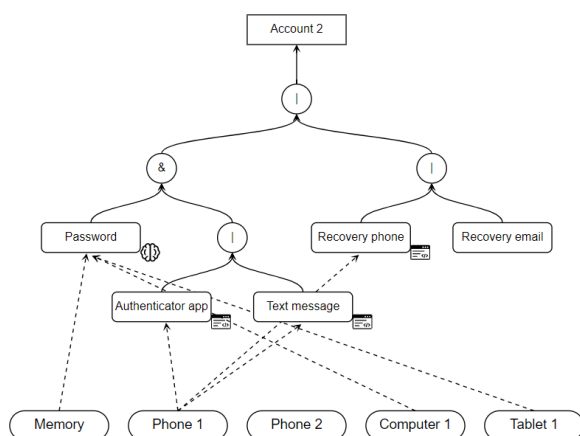## How would you rate this account in accordance with security?

Low

Medium

High

How would you rate the risk of loosing access to this account?

Low

Medium

High

Account 2

Where is the password for this accound saved/stored?

Can the user access this account if they only have the "Tablet 1" available?

    Yes

    No

In short, justify your answer

If the user lost "Phone 1", would this be an issue considered how the account is configured?

    Yes

    No

If yes, can you explain why?

This element is only shown when the option 'Yes' is selected in the question 'If the user lost "Phone 1", would this be an issue considered how the account is configured?'

If the user lost "Computer 1", would this be an issue considered how the account is configured?

    Yes

    No

If yes, can you explain why?

This element is only shown when the option 'Yes' is selected in the question 'If the user lost "Computer 1", would this be an issue considered how the account is configured?'

How would you rate this account in accordance with security?
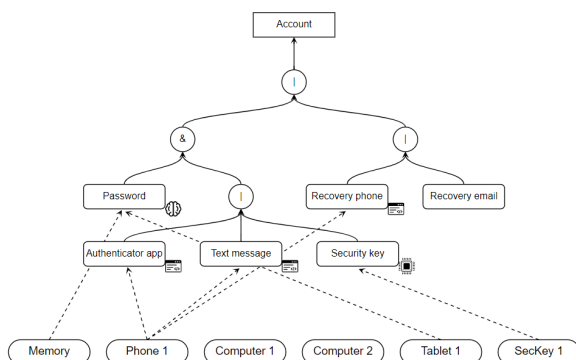
    Low

    Medium

    High

How would you rate the risk of loosing access to this account?
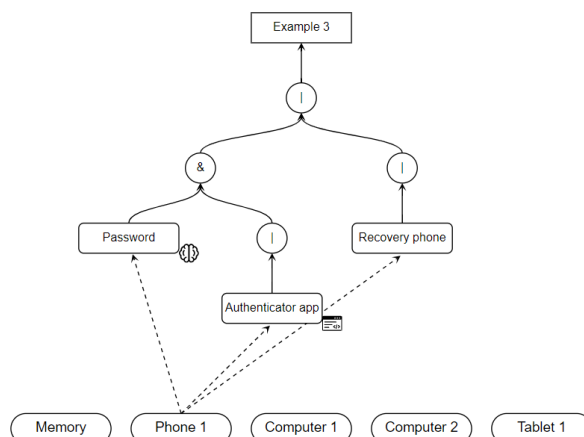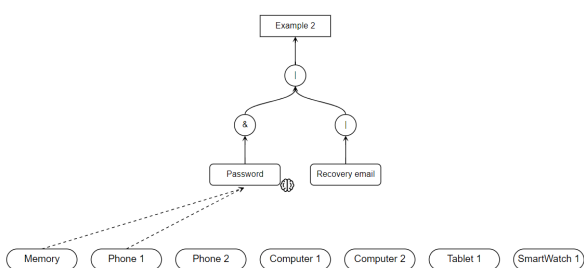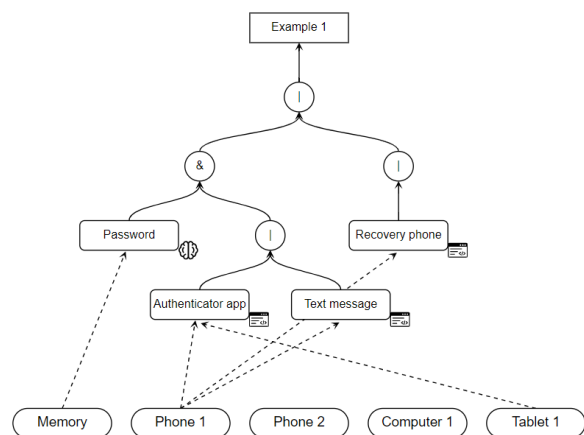
    Low

    Medium

    High

Account access graph (AAG) example (rep)

After we have explained the graph and terms, and you've answerd the questions; how well would you say you understand the graph above now?

AAG Usability - Examples

Example 1 graph

Example 2 graph

Example 3 graph

1. How would you rank the example(s) above in accordance with security?

Write in format 1-2-3, where 1=highest secured and 3=least secure

2. How would you rank the example(s) above in accordance with the risk of loosing access to the account?

Write in format 1-2-3, where 1=highest risk of loosing and 3=lowest risk of loosing

AAG Usability - Personal accounts

BEFORE looking at the AAG graphs, how would you rate the security of your account?

Facebook

Low

Medium

High

I don't have this account

Apple

Low

Medium

High

I don't have this account

Google

Low

Medium

High

I don't have this account

GitHub

Low

Medium

High

I don't have this account

LinkedIn

Low

Medium

High

I don't have this account

Now, open the PDF document attached in the email, and navgiate to your candidate nr. before answering the following questions for each account.
NOTE: If you DONT have any account on the platform, go to the bottom and skip to next page (The candidate nr. should be sent to you via email in December 2023 during the first study)

Facebook
If you DONT have a Facebook account, go to the bottom and skip to next page

Do you see any issues with this account?

See Facebook AAG graph (pdf)

Would you say this account is secure?

Yes

No

If no, can you explain in short why?

This element is only shown when the option 'No' is selected in the question 'Would you say this account is secure?'

How would you rate the risk of loosing access to this account?

Low

Medium

High

After evaluating the graph, would you make any changes to your account setup?

Yes, i have already made changes afer the first survey

Yes, in the future

No

If you already made any changes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, i have already made changes afer the first survey' is selected in the question 'After evaluating the graph, would you make any changes to your account setup?'

If yes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, in the future' is selected in the question 'After evaluating the graph, would you make any changes to your account setup?'

After this evaluation, how would you rate the security of your Facebook account now?

Low

Medium

High

Apple
If you DONT have an Apple account, go to the bottom and skip to next page

Do you see any issues with this account?

See Apple AAG graph (pdf)

Would you say this account is secure?

Yes

No

If no, can you explain in short why?

This element is only shown when the option 'No' is selected in the question 'Would you say this account is secure?'

How would you rate the risk of loosing access to this account?

Low

Medium

High

After evaluating the graph, would you make any changes to your account setup?

Yes, i have already made changes afer the first survey

Yes, in the future

No

If you already made any changes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, i have already made changes afer the first survey' is selected in the question 'After evaluating the graph, would you make any changes to your account setup?'

If yes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, in the future' is selected in the question 'After evaluating the graph, would you make any changes to your account setup?'

After this evaluation, how would you rate the security of your Apple account now?

    Low

    Medium

    High

Google
If you DONT have a Google account, go to the bottom and skip to next page

Do you see any issues with this account?

See Google AAG graph (pdf)

Would you say this account is secure?

    Yes

    No

If no, can you explain in short why?

This element is only shown when the option 'No' is selected in the question 'Would you say this account is secure?'

How would you rate the risk of loosing access to this account?

    Low

    Medium

    High

After evaluating the graph, would you make any changes to your account setup??

    Yes, i have allready made changes afer the first survey

    Yes, in the future

    No

If you already made any changes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, i have allready made changes afer the first survey' is selected in the question 'After evaluating the graph, would you make any changes to your account setup??'

If yes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, in the future' is selected in the question 'After evaluating the graph, would you make any changes to your account setup??'

After this evaluation, how would you rate the security of your Google account now?

    Low

    Medium

    High

GitHub
If you DONT have a GitHub account, go to the bottom and skip to next page

Do you see any issues with this account?

See GitHub AAG graph (pdf)

Would you say this account is secure?

Yes

No

If no, can you explain in short why?

This element is only shown when the option 'No' is selected in the question 'Would you say this account is secure?'

How would you rate the risk of loosing access to this account?

Low

Medium

High

After evaluating the graph, would you make any changes to your account setup??

Yes, i have allready made changes afer the first survey

Yes, in the future

No

If you already made any changes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, i have allready made changes afer the first survey' is selected in the question 'After evaluating the graph, would you make any changes to your account setup??'

If yes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, in the future' is selected in the question 'After evaluating the graph, would you make any changes to your account setup??'

After this evaluation, how would you rate the security of your GitHub account now?

Low

Medium

High

LinkedIn
If you DONT have a LinkedIn account, go to the bottom and skip to next page

Do you see any issues with this account?

See LinkedIn AAG graph (pdf)

Would you say this account is secure?

Yes

No

If no, can you explain in short why?

This element is only shown when the option 'No' is selected in the question 'Would you say this account is secure?'

How would you rate the risk of loosing access to this account?

Low

Medium

High

After evaluating the graph, would you make any changes to your account setup??

Yes, i have allready made changes afer the first survey

Yes, in the future

No

If you already made any changes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, i have allready made changes afer the first survey' is selected in the question 'After evaluating the graph, would you make any changes to your account setup??'

If yes, can you explain in short what changes you would make?

This element is only shown when the option 'Yes, in the future' is selected in the question 'After evaluating the graph, would you make any changes to your account setup??'

After this evaluation, how would you rate the security of your LinkedIn account now?

Low

Medium

High

Lastly, we have added some likert' scales to overall get your opinion on using the AAG graphs

I found the AAG graph to be useful for visualizing my account configuration

I feel like the AAG graph gave me a better understanding of my account configuration

The AAG graph inspired me to change my account configurations