

Appendices

A Wireframes and UI Design

B UML Diagram

C Requirement Specification

D Large-scale user test & Usability test documents

Appendix A

Wireframes and UI design

A.1 Voter wireframe

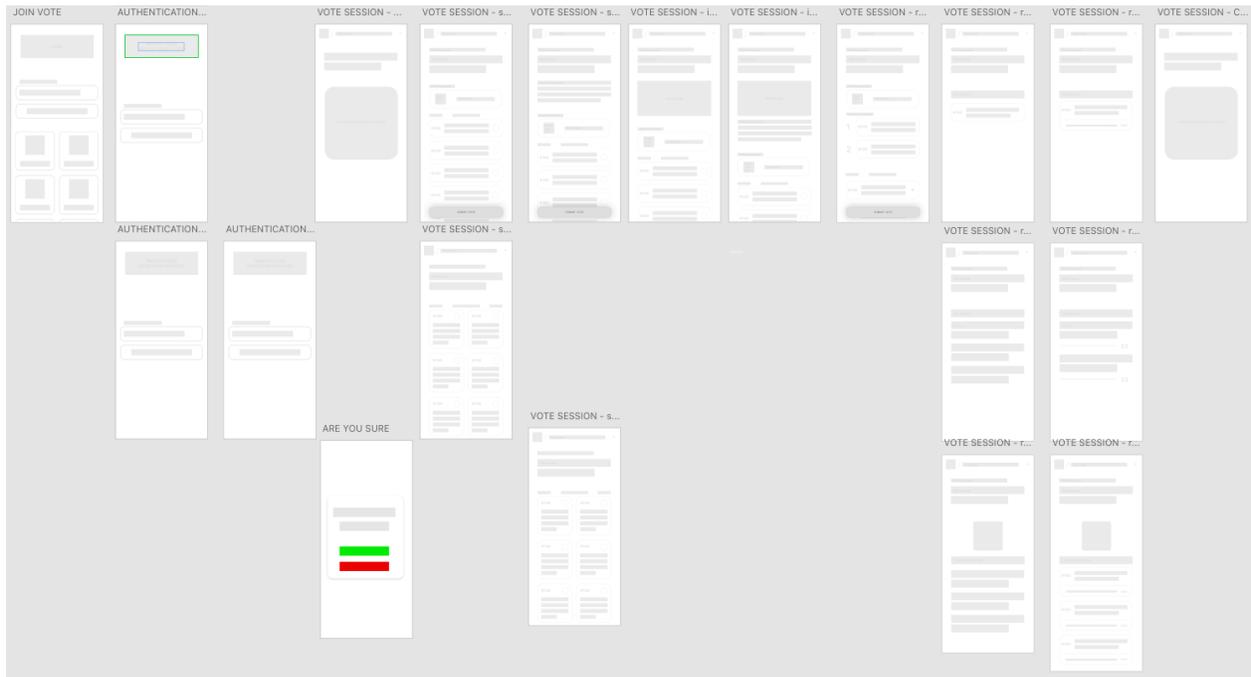


Figure A.1: All cases of displaying information of the ballot

A.2 Organizer wireframe

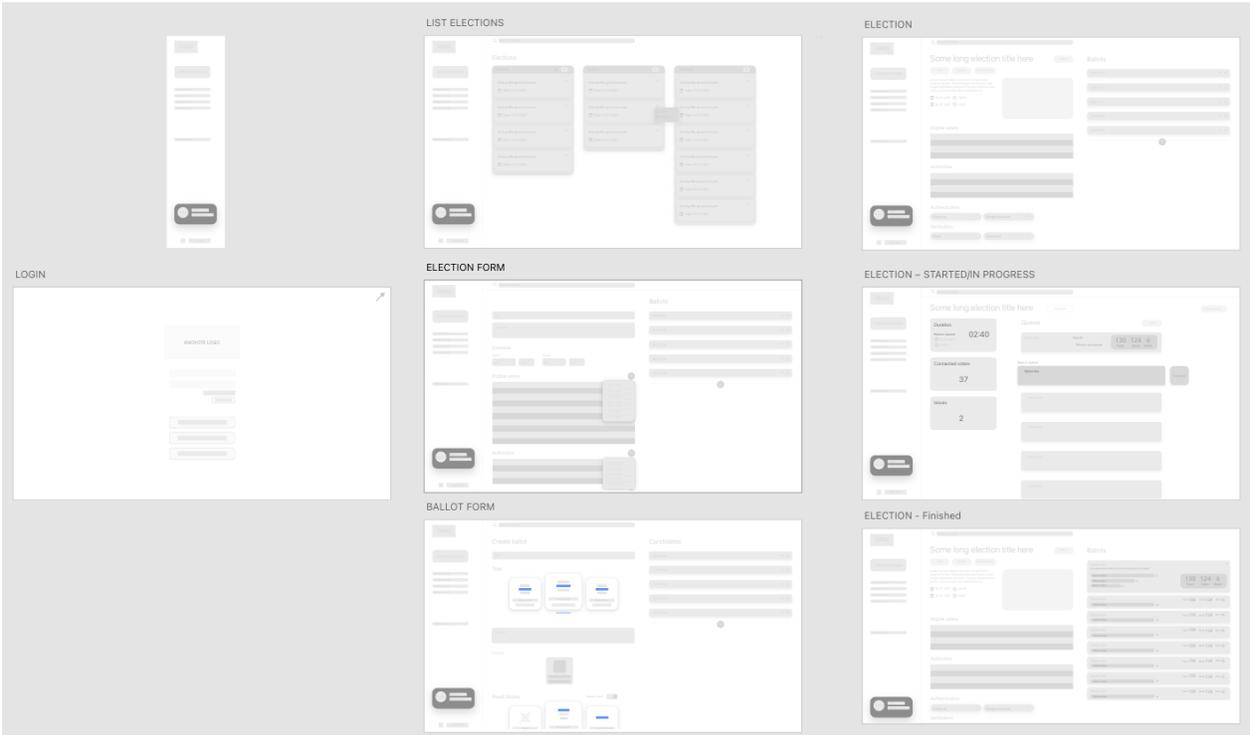


Figure A.2: Wireframes of all use cases for the organizer

A.3 UI design organizer panel

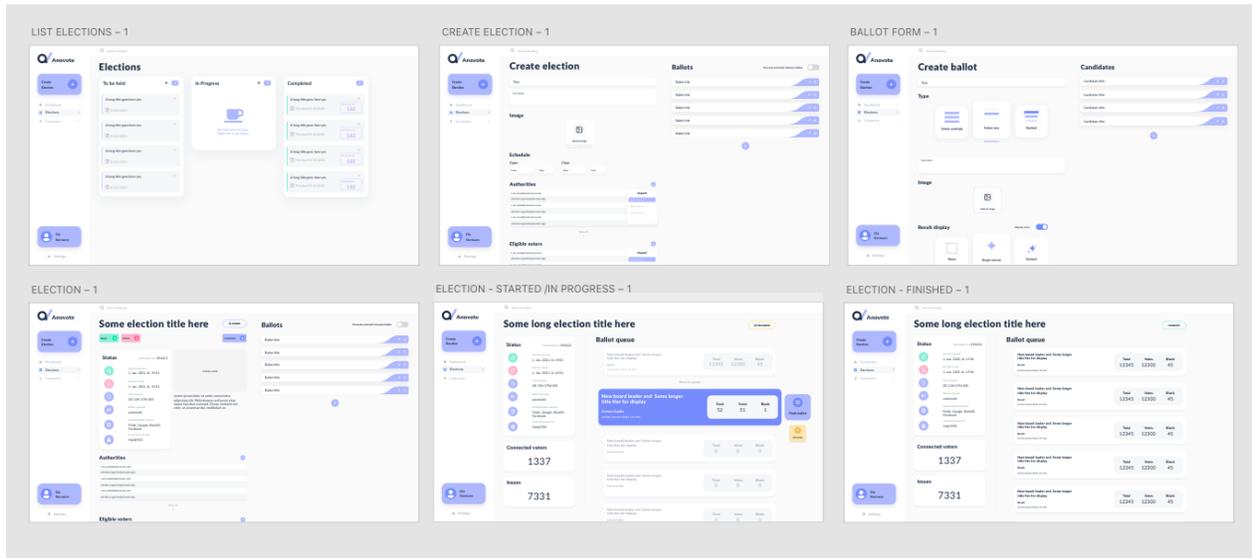


Figure A.3: UI design for Anovote organizer panel

A.4 Landing page wireframe

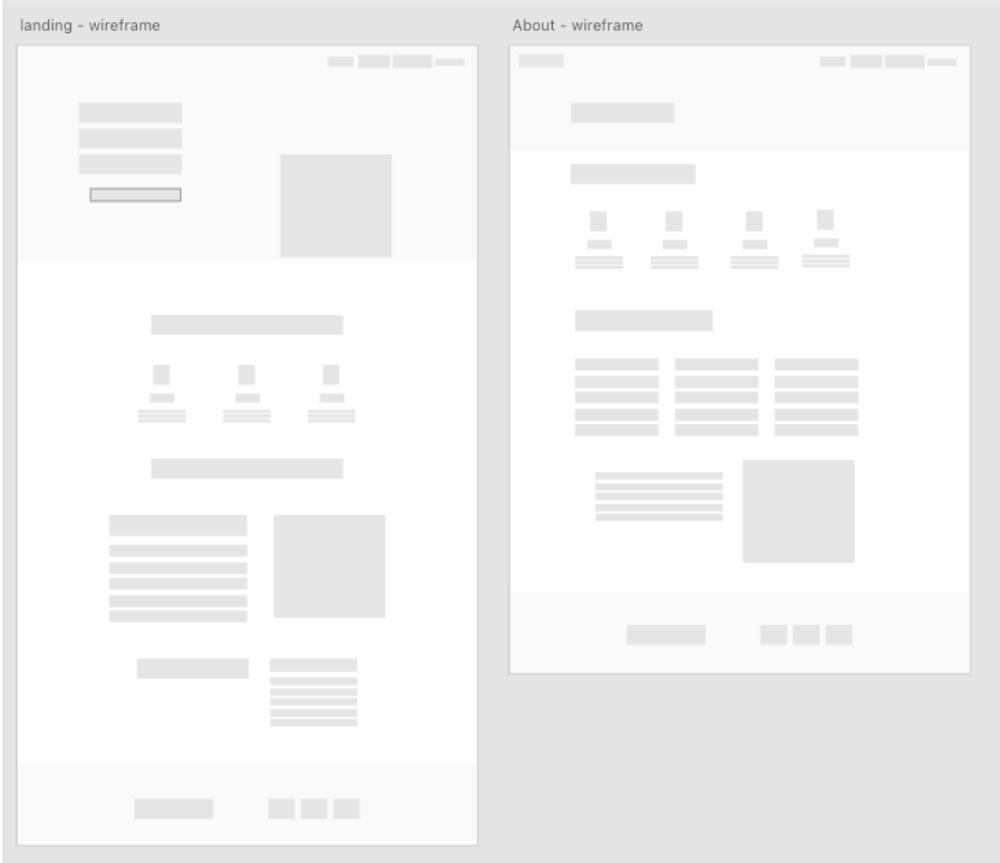


Figure A.4: Wireframes for landing and about page

A.5 Landing page design

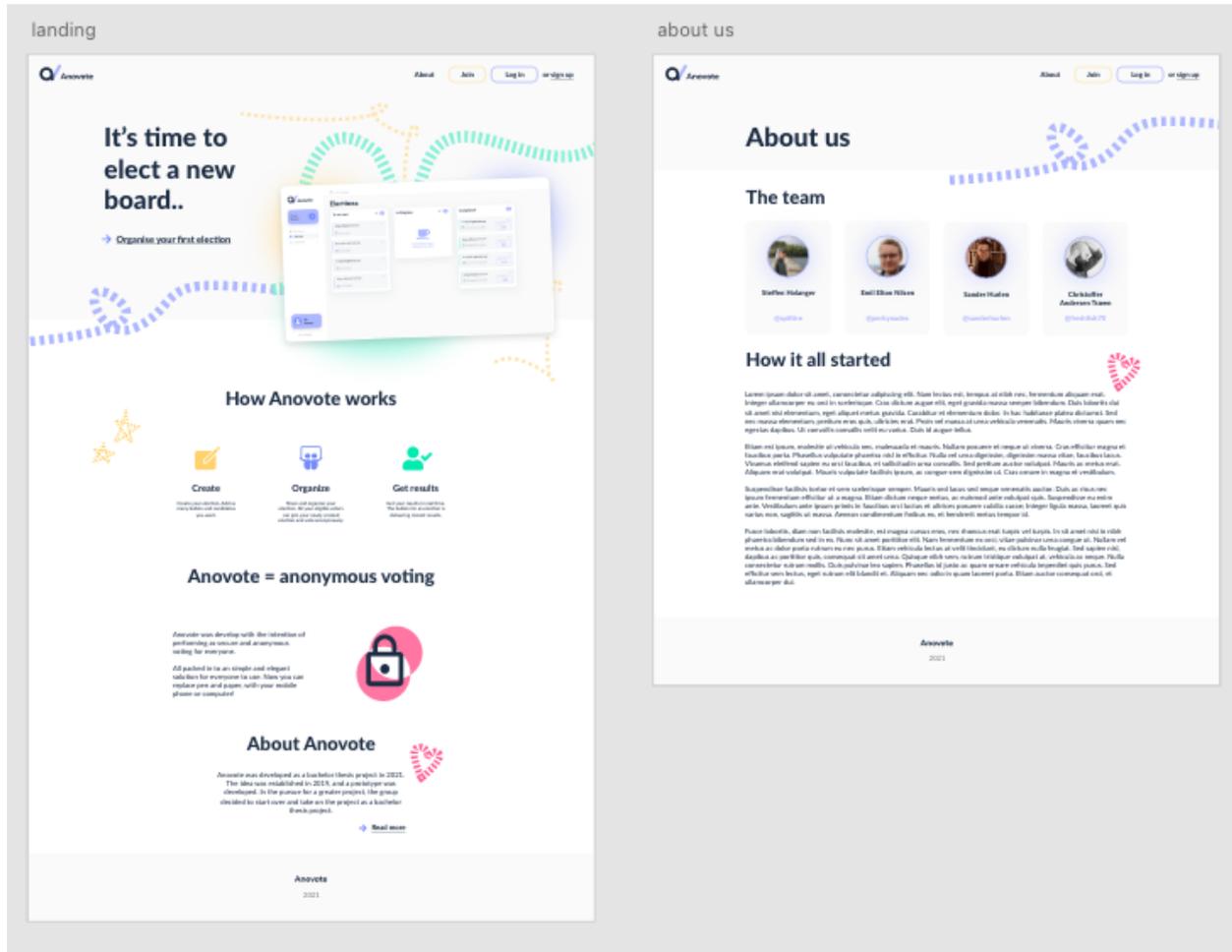


Figure A.5: Landing page design for <https://anovote.app>

Appendix B

UML diagrams

B.1 Sequence diagrams

The following diagram illustrates the join/verification mechanism. It shows the events, decisions, and calls that are executed down the application chain from when a voter submits the join button until they are verified. A full scale image can be seen in (</attachments/figures/uml/join-sequence.png>)

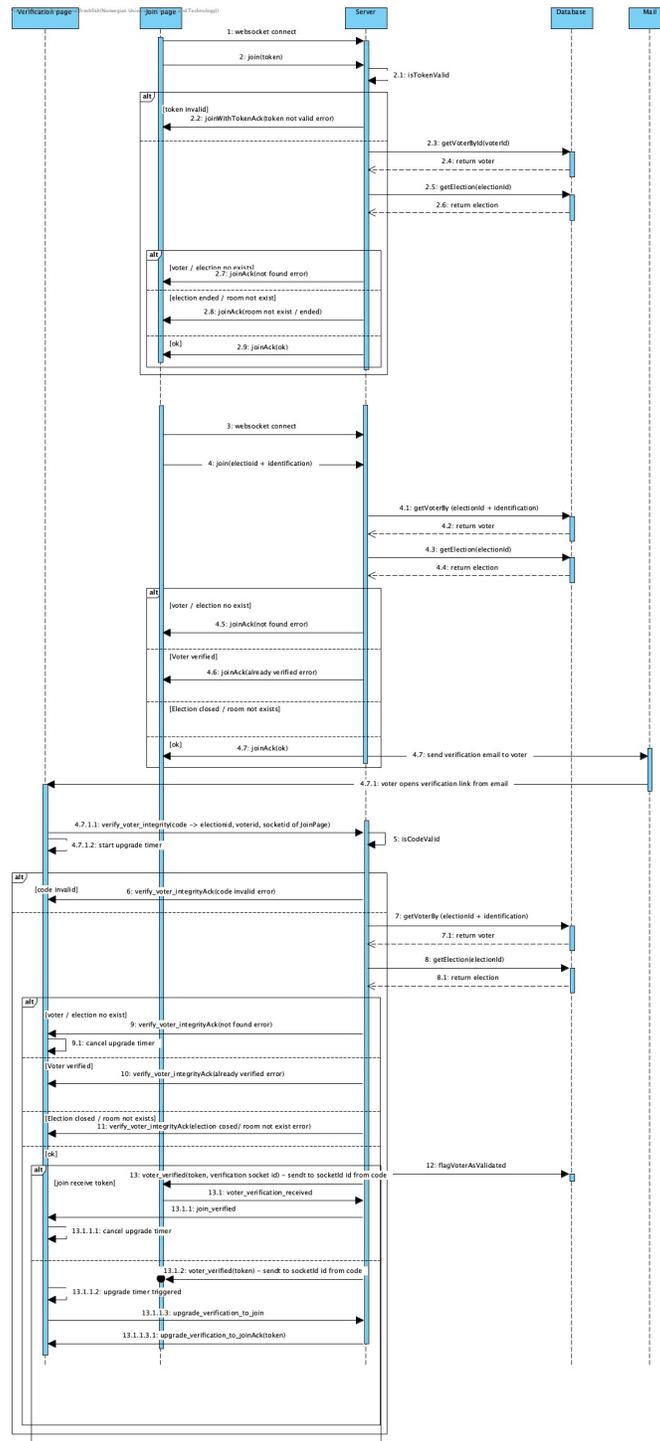


Figure B.1: Join and verification sequence diagram

The following diagram illustrates the vote sequence from when an election organizer pushes a ballot to a tallied ballot. A full scale image can be seen in (/attachments/figures/uml/vote-sequence.png)

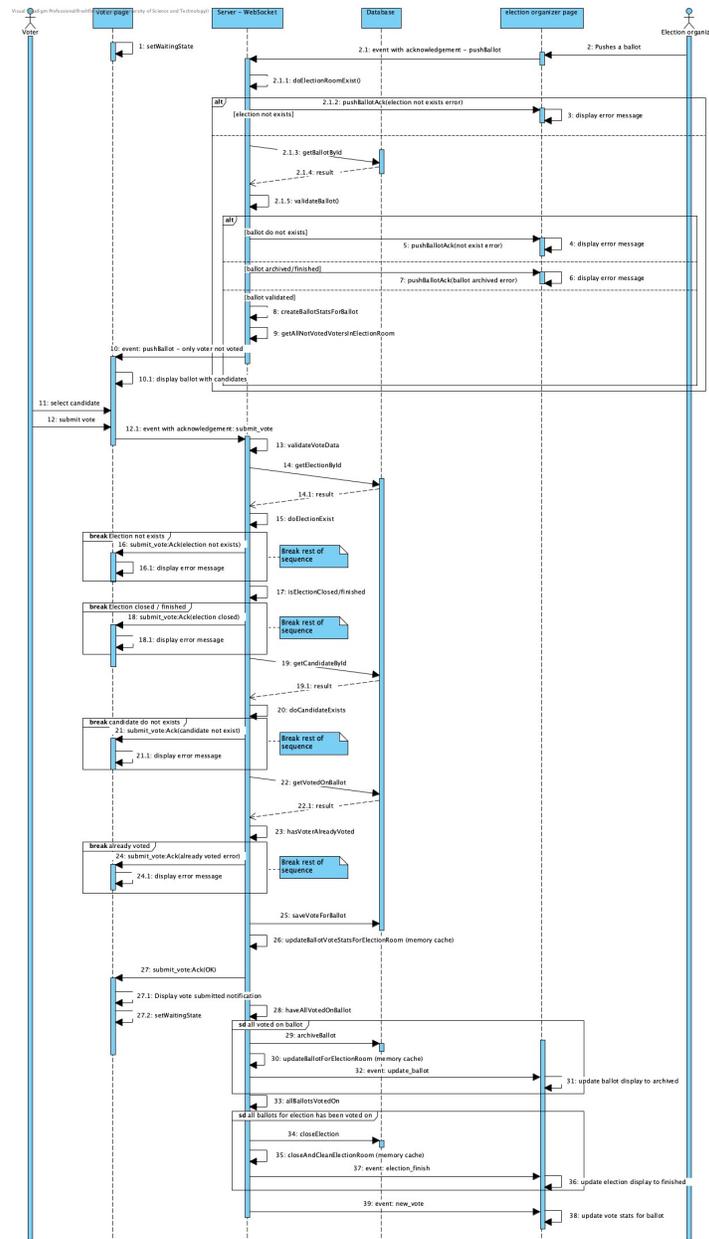


Figure B.2: Vote sequence diagram

Appendix C

Requirement Specification

A Voter features

<i>Specification</i>	<i>Importance</i>
A voter must be able to vote	Must have
A voter must be able to login	Must have
A voter should be able to view the result of each vote if enabled by the vote caster	Nice to have
A voter must be able to close and open the voting service and persist sessions	Must have
A voter must be able to logout	Must have
A voter should be able to change language	Nice to have

B Election administration panel features

<i>Specification</i>	<i>Importance</i>
An election organizer must be able to login	Must have
An election organizer must be able to logout	Must have
An election organizer must be able to register	Must have
An election organizer must be able to create a new election	Must have
An election organizer must be able to invite users to an election	Must have
An election organizer must be able to see casted vote results	Must have
An election organizer must be able to create an election template	Must have
An election organizer should be able to change email and password	Nice to have
An election organizer should be able to export election results	Should have
An election organizer should be able to see the current ballot results in real time	Should have
An election organizer should be able to delete an election	Should have
An election organizer should be able to change the theme of an election	Should have
An election organizer should be able to change the language	Should have

C Ballot features

<i>Specification</i>	<i>Importance</i>
A ballot must have a title	Must have
A ballot should have a description	Should have
A ballot can have an image	Nice to have
A ballot could be cast as blank	Must have
A ballot can be of different types	Must have
A ballot must be easy to understand what is being voted on	Must have

D Election features

<i>Specification</i>	<i>Importance</i>
An election must have a title	Must have
An election should have a description	Should have
An election must have a list of ballots	Must have
An election should have a progress bar	Should have
An election must be able to push ballots to voters	Must have
An election should have a due time	Should have

E System features

<i>Specification</i>	<i>Importance</i>
The votes must be untraceable	Must have
The voter must be validated	Must have
The system should support multiple login options	Should have

Appendix D

Test Documents

D.1 Usability Test Documents

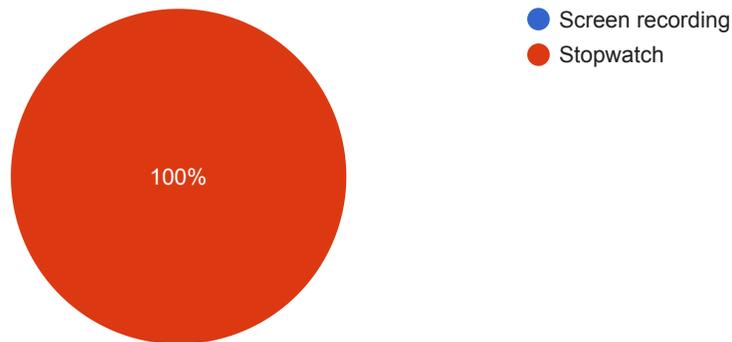
Useability testing

2 responses

[Publish analytics](#)

FOR TESTER: How are you recording time?

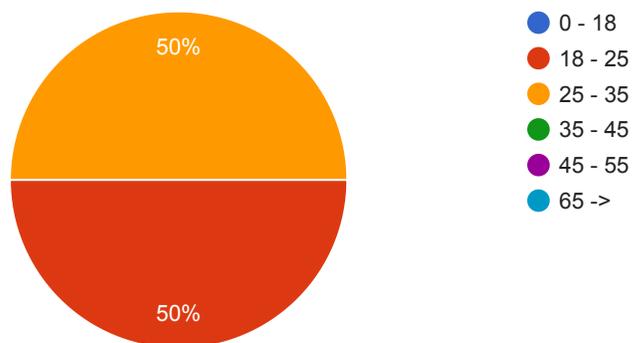
2 responses



Screening

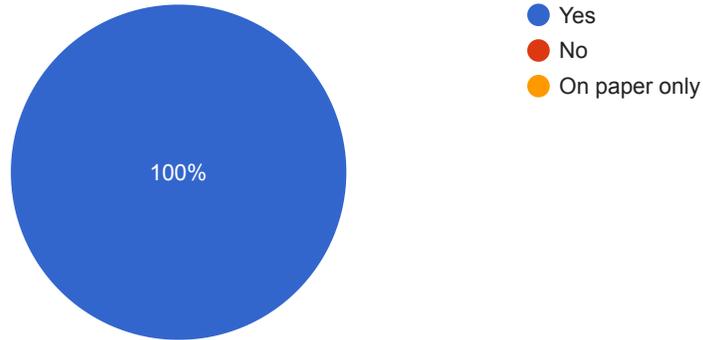
Which age group do you belong to?

2 responses



Have you ever arranged a digital election or a quiz of any kind before? (by using menti, strawpoll or kahoot for instance?)

2 responses



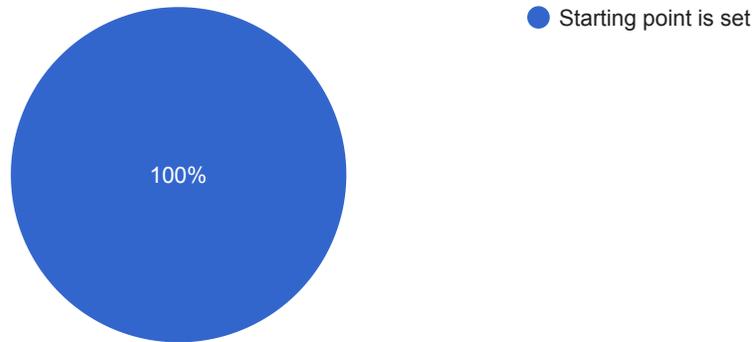
Testing

Information for tester

Starting point for test: <http://anovote.uials.no:3001/login>



2 responses

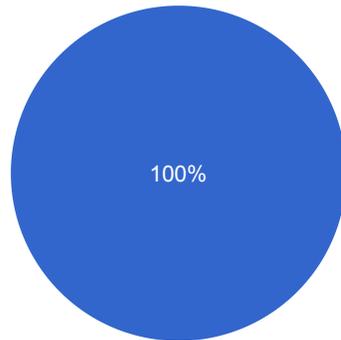


#1 Register account - Exp. time: 2 min



#1 Register account (2 min)

2 responses



- Success
- Failed to signup within expected time

#1 - If signup errors occurred, what did you think of the form input feedback

2 responses

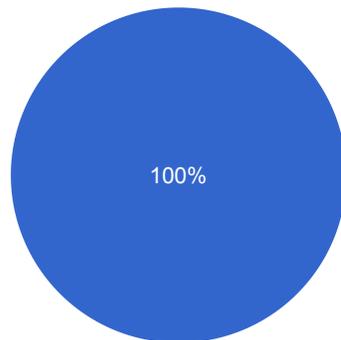
Did get "must be equal.". Thought it was precise and fixed it quickly

Too strict rules on password

#2 Show elections - Exp. time: 20 sec

#2 Show elections (20 sec)

2 responses



- Success
- Failed to display elections within expected time

#3 Create new election - Exp. time: 4 min



FOR TEST PERSON: Did any error occur? (fill in if something unexpected happend)

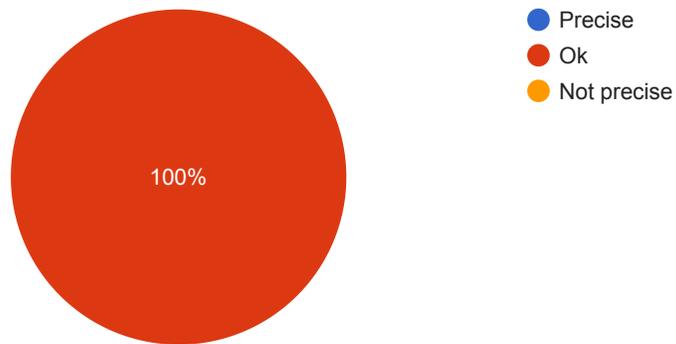
2 responses

Difficult to remember/understand that you need to click OK after dates. Did not understand Eligible voters input. Bad spacing in election form.

none

What did you think of the form input feedback?

2 responses



If not precise, why do you could improve?

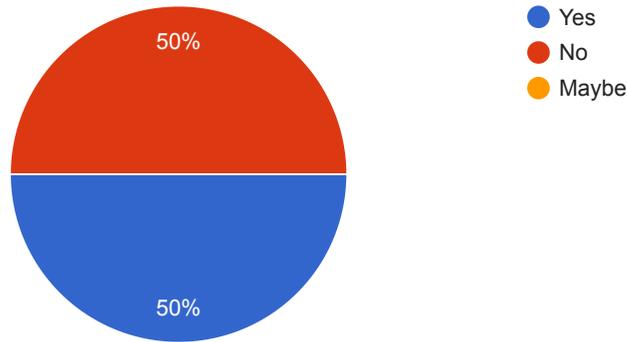
1 response

Dato skapte problemer



Did you notice whether there was any other way to get to the create election screen?

2 responses



#3.5 Create Ballot - Exp. time: 3 min

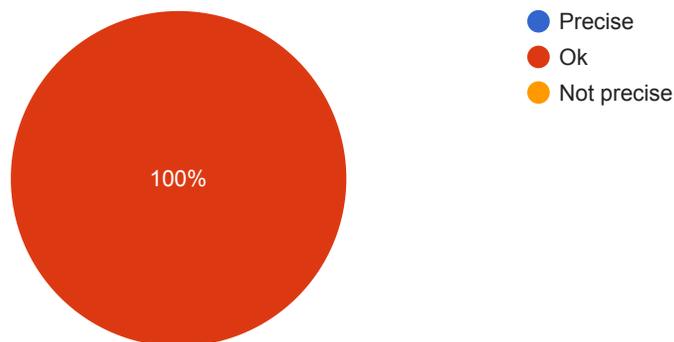
FOR TEST PERSON: Did any error occur? (fill in if something unexpected happend)

1 response

none

What did you think of the form input feedback?

2 responses



If not precise, why do you could improve?

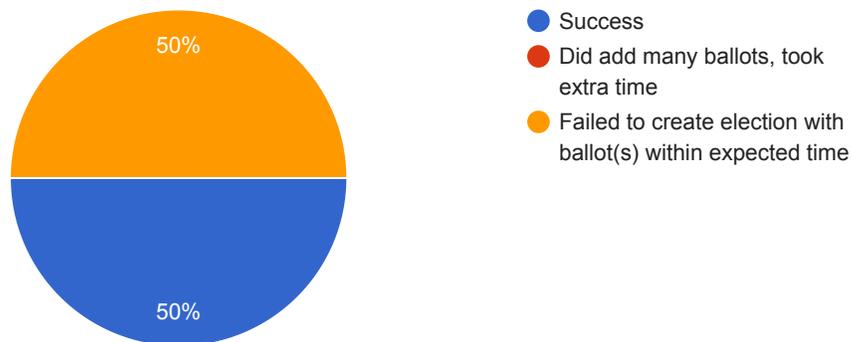
1 response

Ønske om at feltene kom opp automatisk, ikke "Add" per gang. Har mest lyst til å fortsette å skrive... Enter integrasjon var veldig bra

Try to summarize the steps: 3. and 3.5:

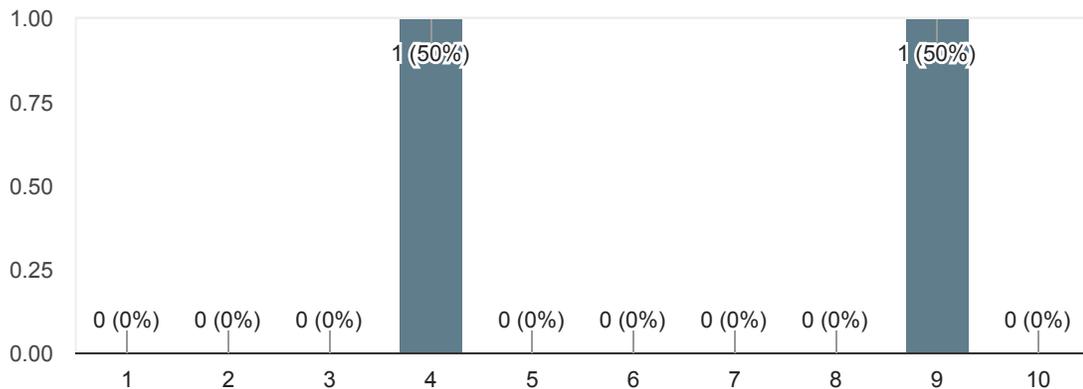
#3 Create election and #3.5 add ballots (7 min)

2 responses



What did you think of the layout and process of creating an election with ballots?

2 responses



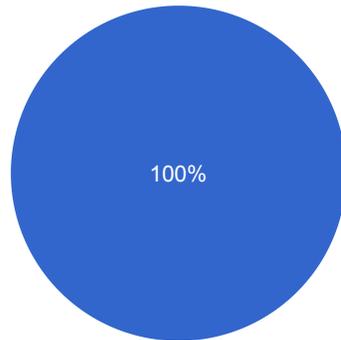
Testing Cont.

#4 Display newly created election - Exp. time: 10 sec



#4 Display the newly created election in its election view (10 sec)

2 responses



- Success
- Failed to display the election within expected time

FOR TESTER: any remarks?

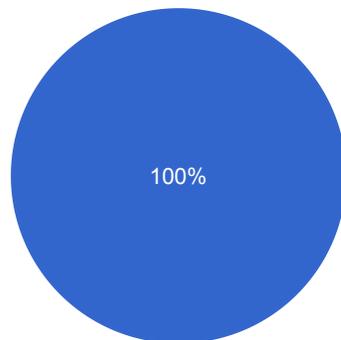
0 responses

No responses yet for this question.

#5 Start the election - Exp. time: 20 sec

#5 Start the election (20 sec)

2 responses



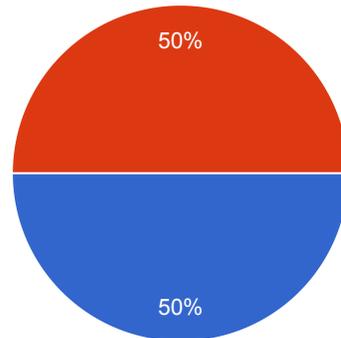
- Success
- Failed to start election within expected time

#6 Push a ballot - Exp. time: 20 sec



#6 Push ballot (20 sec)

2 responses

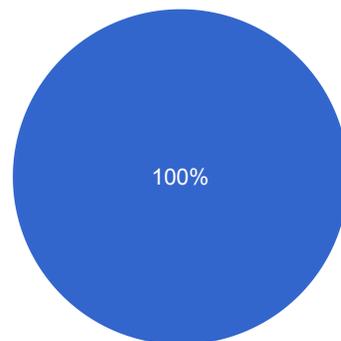


- Success
- Failed to push ballot within expected time

#6.5 See result of ballot - Exp. time: 10 sec

#6.5 See result of ballot (10 sec)

2 responses



- Success
- Failed to see result within expected time

What happend if he/she did not manage

0 responses

No responses yet for this question.

I noticed you did click on ---. Can you tell me why? Follow up on any interesting behavior you observe during the test to get a better idea of the thought process behind the user's actions.

0 responses

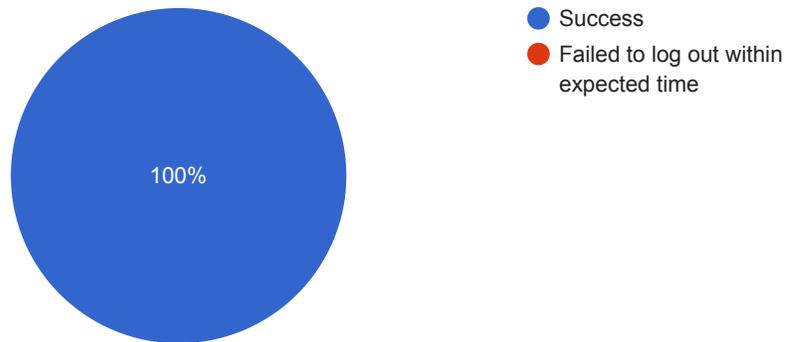
No responses yet for this question.



#7 Log out - Exp. time: 10 sec

#7 Log out (10 sec)

2 responses

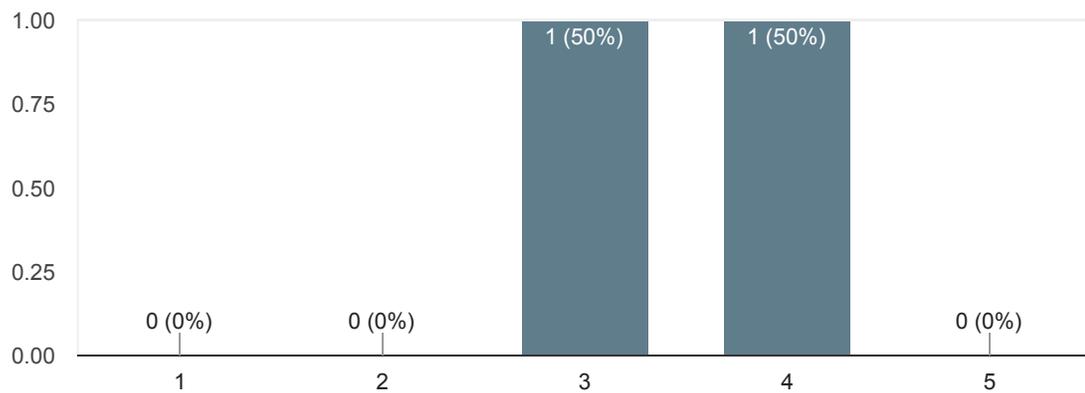


Post test

General questions

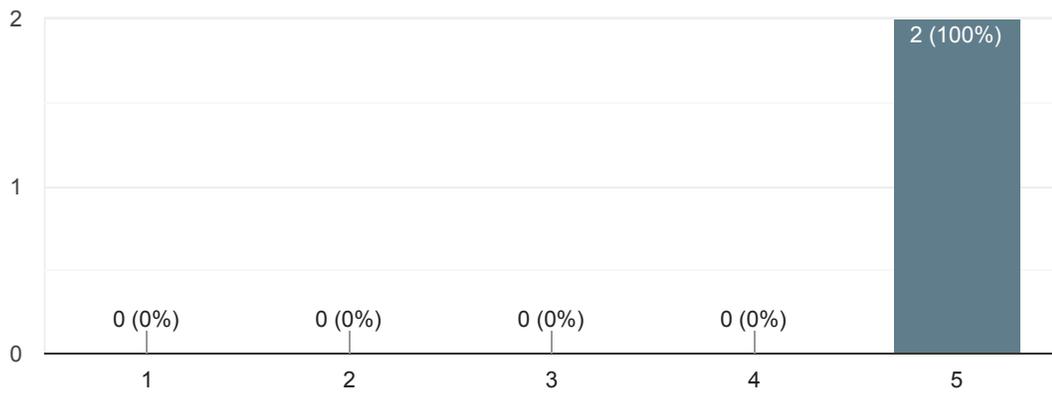
How did you rate the experience of using the website to complete the tasks?

2 responses



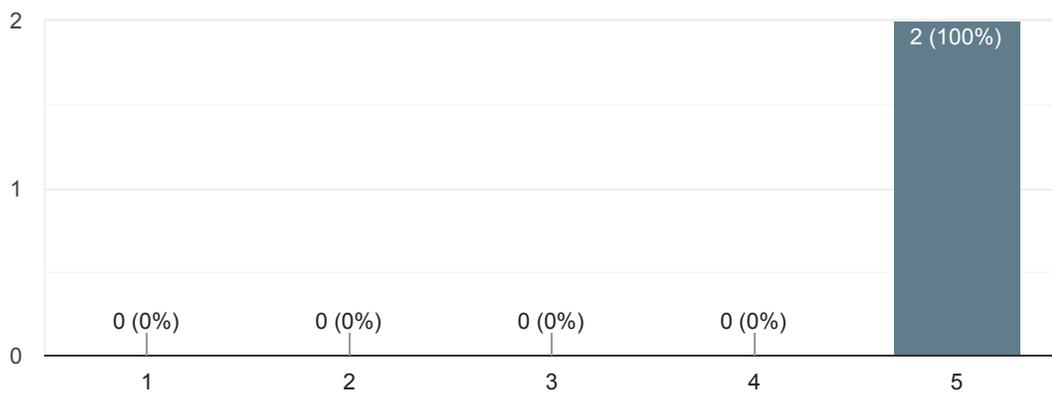
Was it easy to navigate around the site?

2 responses



Was it easy to read the text on the site?

2 responses



Any other comments?

0 responses

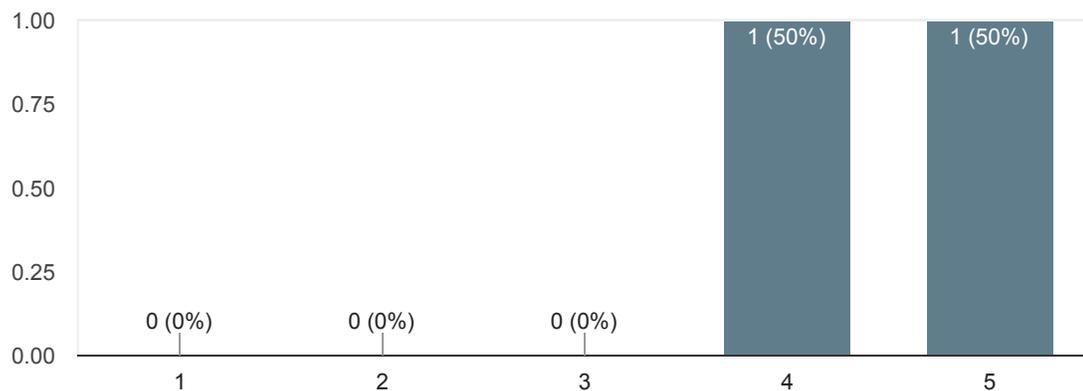
No responses yet for this question.

What was your overall impression of ___?



What was your overall impression of creating an election?

2 responses



What could improve?

1 response

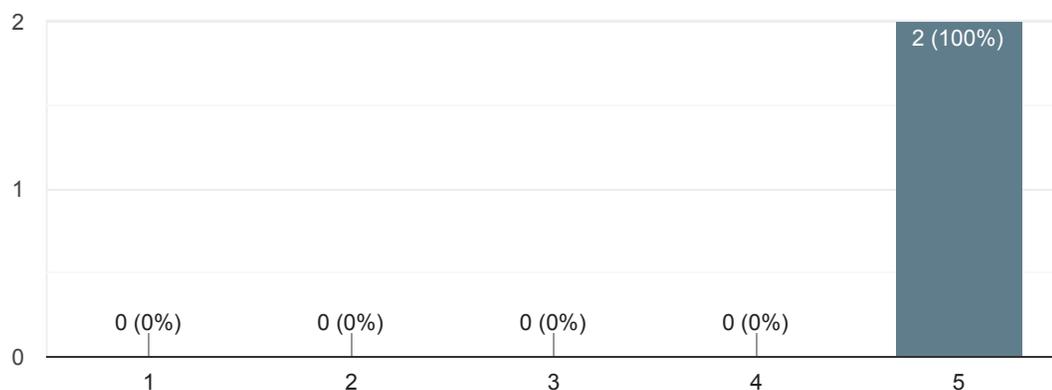
Under create election:

Det var ikke iøyenfallende at man burde fylle inn ballots. Siden denne var på høyre side og ikke ville gitt noen varsel.

For å skrive inn passord til election: Den lå for tett opp til tabellen

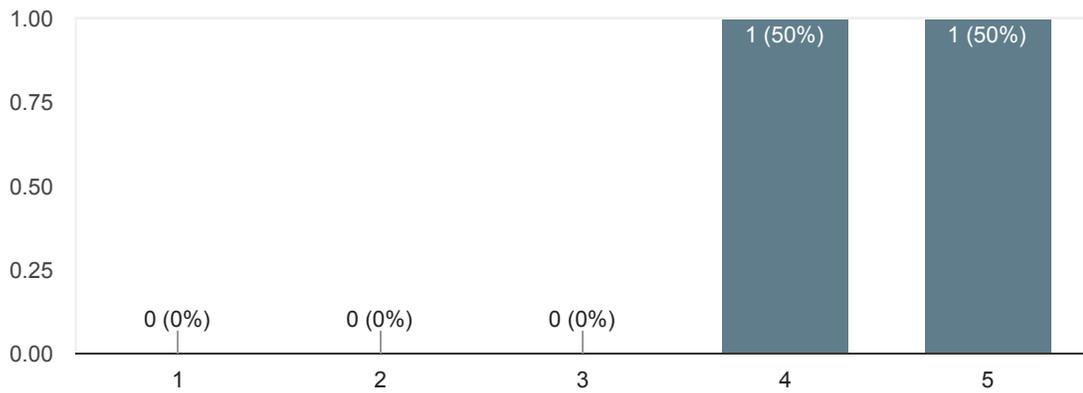
What was your overall impression of registering an account?

2 responses



What was your overall impression of the navigation?

2 responses



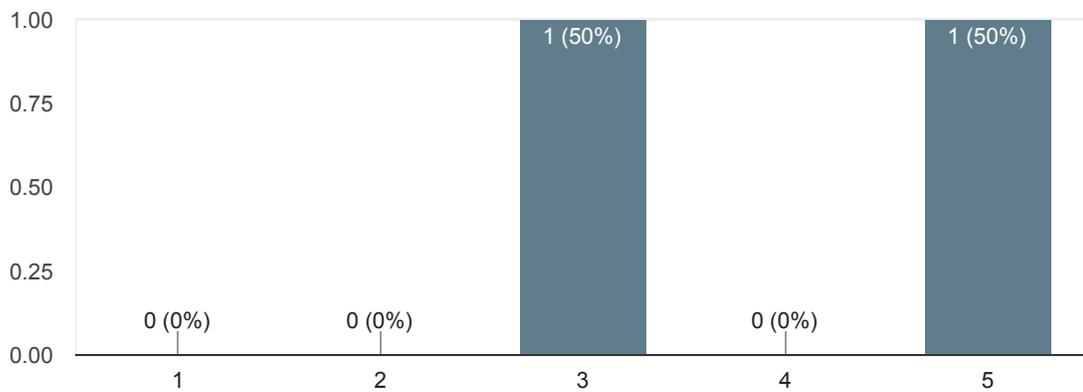
How would you improve it?

0 responses

No responses yet for this question.

What was your overall impression of pushing a ballot?

2 responses



How would improve it?

2 responses

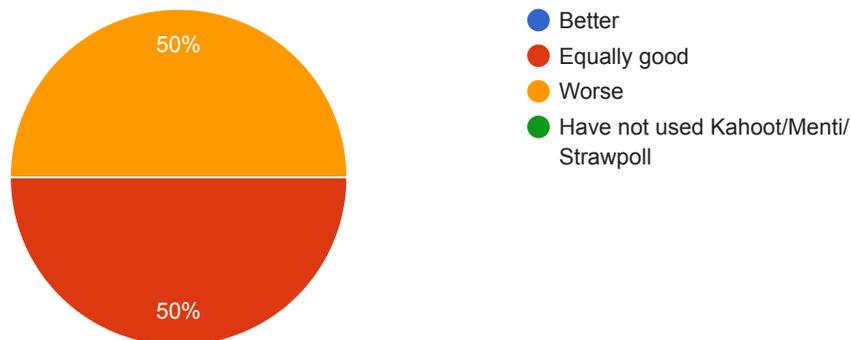
Knowing what "push ballot" does is and does, is not that intuitive. Maybe use a simpler language

"Push"

Other questions

If you have used Kahoot/Menti/Strawpoll to create a quiz: How would you compare Anovote to Kahoot/Menti/Strawpoll?

2 responses



OTHER (Have the tester noted down something unexpected?)

0 responses

No responses yet for this question.

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D.2 Large-scale User Test Document

Answers for large scale user test

Who should participate

4 unexperienced

3 experienced users with prior knowledge. These are going to be voters

Screening & pre-test

1. Which age group do you belong to? Students
2. Have you ever arranged a election or quiz of any kind? For ex, by using menti, strawpoll or kahoot? Yes

Test

Plan

#	Task	Description	Expected time	Success
0	Go to page	Should find its way to the landing page	20sec	X
1	Register account	Allows the user to arrange an election	2 min	X
2	Show elections	Display the elections view. It should be empty	20 sec	X
3	Create new election	Create an election to be able to arrange it later	4 min	X Litt uklarhet om election/ballot
3.5	Add ballot(s)	Create a ballot for an election	3 min	X Burde vært lettere å kunne trykke den lilla knappen for å adde, istedenfor kun add
4	Display newly created election	See the newly created election	10 sec	X
5	Start an election	Arrange an election for the newly created election	20 sec	X
6	Push ballot	The election org should push a ballot out	20 sec	X Oversiktig å se stats kanskje ikke increment. Heller vertikal visning?
6.5	See result	The election org should display the results of the ballot in graph view	10 sec	X
7	Log out	Log out of application	10 sec	X

Arrange an election for:

Styremøte 2021

With description

Valg av representanter til styret 2021

Eligible voters

All in the room

Should include 3 ballots:

- Valg av leder
 - Kandidater
 - Steffen
 - Sander
 - Christoffer
- Valg av nestleder
 - Kandidater
 - Ole Thomas
 - Vilde
- Valg av styremedlem
 - Kandidater
 - Per
 - Pål

bemerkninger

- "Passord vil man ha, fordi man ikke vil at alle skal kunne stemme"
- "Åpningsdato er kjekt å ha"
- Kan ikke bla nedover på election siden når voters tar mye plass
- Election finished or closed on test. Probably because of

Questions to ask AFTER completing a task

- **I noticed you did . Can you tell me why?** Follow up on any interesting behavior you observe during the test to get a better idea of the thought process behind the user's actions.
- **Did you notice whether there was any other way to ___?** You are trying to determine why the user did one thing instead of another.
- **Which of these two approaches/options do you find best? Why?** This is useful if you're trying to determine the more appealing of multiple options.
- **What did you think of the layout of the content?**
- **What did you think of the form input feedback?** (Not precise/Ok/Precise)

Post test

General questions

- How did you find the experience of using the website to complete this task? Happy
God oversikt over hvor mange som var inne
Fin oversikt over valget live