

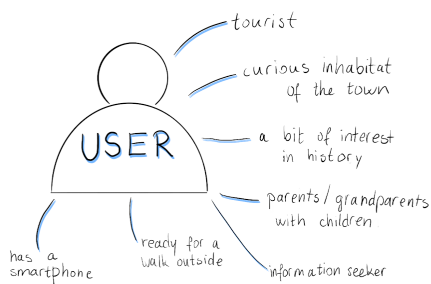
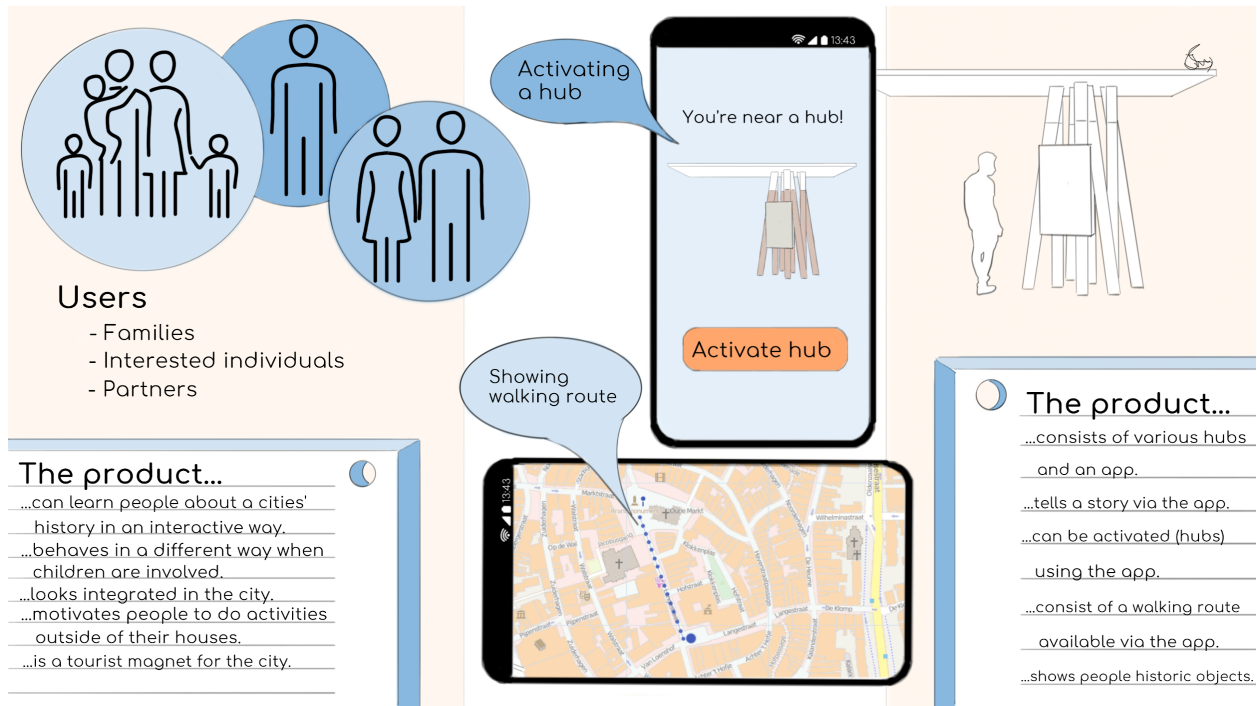
User Interface Design and Simulation

Part 1

Group 16

Part 1	2
User Interface - First version	3
User test plan	4
User test results	6
Separate questionnaire results	7

Part 1



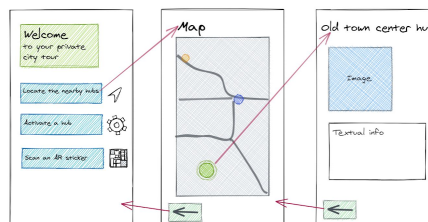
PRODUCT internal functions

- consists of
 - display cabinet
 - ↳ containing historic artefacts, some of which can change due to user input
 - AR-stickers
 - an app - activating the aforementioned - should be payed for
 - sitting possibility
- the application, where you can pay for use, tells you a historic story about the town leading you to the hub locations where a more interactive story can be told by showing artefacts in the display cabinet and showing actions with them, the AR stickers are also activated in the app and follow the story

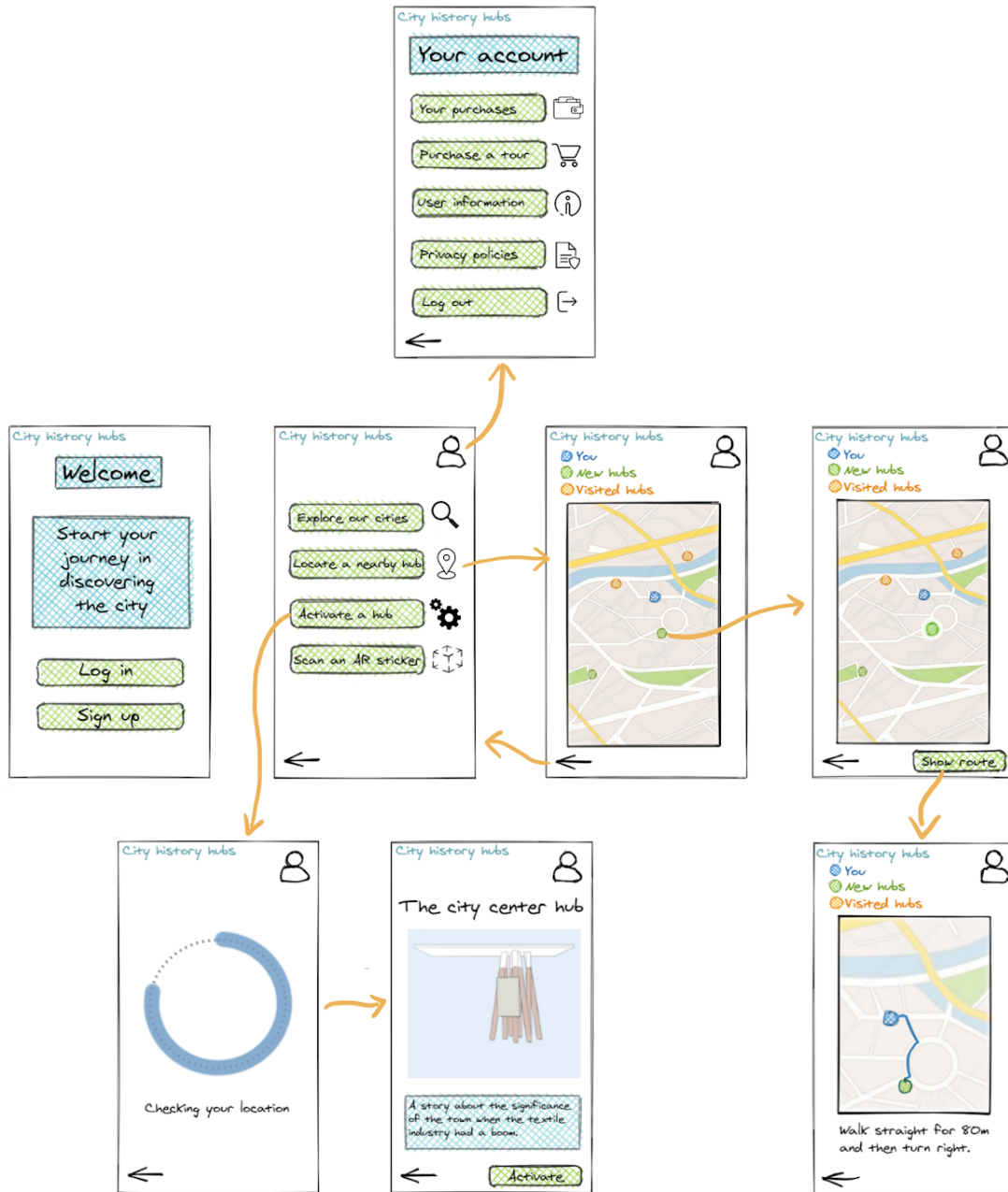
PRODUCT FUNCTION external functions

- the product shows the user history and culture information about the town they are in
- the product is activated by an app, it becomes interactive then (mechanical changes in the product)
- it is a hub with a display cabinet and can contain sitting places, it is meant to be placed outside
- an interactive story is told to the user with the product - app combination

USER INTERFACE in application



User Interface - First version



User test plan

The user test plan exists off two parts. A test with the paper models and certain tasks and a small questionnaire afterwards. In this document both parts are described. In addition to this document an excel sheet can be used to note the results of the test.

Paper mock-up test

Preparation

1. Print out or prepare all the parts of the paper mock up. It might be handy to label the pages for the test. This makes it easier to order the pictures of the start of the test.
2. Arrange a stopwatch and a pen and paper to tally.
3. Find a participant.
4. Place the home page in front of the participant. When the participant “clicks” a page you lay the next page in front of the participant. For example if the participant taps the “Active a hub” button lay that page above the homescreen.
5. Explain the experiment to the participant. Her or she will get several tasks to execute in the app. The target of the experiment is for the participant to execute the task in the least amount of taps. Next to this also explain the basic functionality of the app.
6. Give the participant a task, these can be found below. While the participant is executing the task, time the duration and tally the amount of taps needed to execute the task.
7. Note the results in the excel sheet.

Tasks

These tasks are a basis for the experiment, if some of the tasks aren't useful or certain other tasks prove to be more useful they can be added or removed.

1. Purchase a tour
2. Check the privacy policies
3. Find the nearest city with history hubs
4. Find the route to the nearest hub
5. Activate a hub
6. Activate a AR sticker

Questionnaire

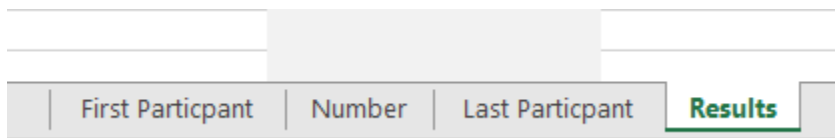
After the experiment you ask the participant several questions about the app. These results can also be documented in the excel sheet. More questions can be added if necessary

1. Was the app built logically?
2. Were the tasks intuitive to execute?
3. Were certain things hard to find?
4. Did you like the esthetics of the app?
5. Do you have any general feedback for the app?

Excel sheet

The excel sheet can be used to note the results and get automated average calculations. There are a few instructions.

1. Download the file as an excel, otherwise it won't work.
2. For the first participant use the "first participant sheet"
3. For extra participants duplicate the First Participant sheet and place it between the First and Last participant sheet. (as can be seen in the picture)



4. The results will be calculated in the last sheet

User test results

In total the test was executed with 4 participants. The results can be found below. First a table with the total average of time and the amount of taps per task. Then a conclusion for the questionnaire. The separate results of the questionnaire can be found on the last pages. A video has been made of one of the tests and can be found here:

<https://drive.google.com/file/d/1GrXjuPpn8gk5x94MlwHDs0rhkTCB3hWh/view?usp=sharing>

Task Number	Average time to complete task(in seconds)	Average amount of taps to complete task	Average time per tap(in seconds)
1	44,75	4,74	9,421052632
2	25	4,5	5,555555556
3	18	2,75	6,545454545
4	32	4	8
5	12,75	2	6,375
6	3	1	3
Average for all tasks	22,58333333	3,166666667	6,482843789

Conclusion

From the test results it can be concluded that the more tasks were done by the participants, the easier the tasks became. This is logical if you realise that after five tasks, the participants kind of know the home page and understand the buttons on this page. Therefore in most cases, the first task was the most difficult to execute, because the interface was completely new.

Furthermore, we could improve the home page by including a text "Home" above it, because now it was a bit confusing that it actually was the home page. Also the part where you can buy routes should be changed according to most of the participants. It would be nicer if there would be a screen between the welcome page and the home page. On this page you could buy routes, see your owned routes and choose a certain city/route. This would make the interface a lot better and easier to understand.

The last main point was that we need to think a little bit more about the icons we use in the interface. The icon used by "Activating a hub" is normally used for a "settings" menu, so the majority of the participants thought that button brought you to the settings menu.

Separate questionnaire results

Left is question 1 and right is question 5

Participant 1

When you pass the home page it is clear. The home menu is not clear, Explore our cities could be placed earlier to make it easier to read.	The tasks are quite logical. Only Explore our Cities is not quite logical. First show in which cities there are routes, then choose a certain route. Do this in a separate screen.	It was not clear where to purchase a route. Tip: separate the purchases from the account menu.	Use of colour is good. Legenda on the "maps" part is not really clear.	Maybe add an explanation animation in the beginning, after logging in. It should be possible to skip the animation if you have watched it for several times.
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Participant 2

The person (account button) was not clearly visible.	The tasks were logical.	The account button was not clear, so that menu was not seen very fast.	Nice use of colour. The lay is also nice.	First, buy and see your routes. After that you go the home menu, so change the order a little bit. Next to that, separate the buying buttons from the account menu.
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Participant 3

the settings button is not logical, because it is placed by Activate a hub, privacy policies would be under the settings.	Location was a bit confusing, but further quite logical.	User information was difficult to find.	Colours are fine, change some of the icons, such as the 'settings' icon.	Translate to Dutch.
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Participant 4

logical build up	user friendly and logical tasks	quite easy to find, only language was quite difficult.	maybe a little bit brighter colours	Language difficulties: personal and makes it broader usable.
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