

## Usability Test

Note that when carrying out the test you have to...

- Explain the purpose of the test
  - E.g. to find problems when using the system
  - If you can't complete a task then it is NOT your fault - it is the systems fault.
- Give a task and ask user to say what they're thinking while doing the task
- Observe, listen and make notes
- Ask cautiously explanatory questions (examples)
  - What are looking for?
  - Why are you...?
  - What do you think...?
- Only help users when they are surely lost (mark as task failure)
- Do not defend the system or explain why and how the system was built in a certain way, while performing the test as it can influence the test results

During a Think-Aloud test, there are three primary roles:

- Facilitator: Main correspondent with the user: asks questions to the user and guides the user if necessary
- User: Experiences the system and tries to perform certain tasks, and speaks their thoughts while doing so (preferably knows the least about the system)
- Log Keeper: Records interactions, writes down everything that is being said (or records it) as well as keeping track of everything that is happening (also helps facilitator if necessary)

## Test Users

Who is the users of the system? What is expected of them?

The system is built as if it was intended to be used as a home and entertainment system, while it would contain some elements of a exploratory or creative system. As such, the target audience consists of people from all age groups and at a wide selection of IT-skill levels. Hence the system cannot expect the users to understand how to use the program. The users can also

not be expected to use the program very often, perhaps as few times as once or twice a month.

Because the system is built as a home and entertainment system, then it is also quite common for users to shift between products extremely quickly if their current product do not live up to their standards or satisfaction. Therefore bugs and missing features can have a huge impact upon the usage of the system.

*Prioritized Usability Factors:*<sup>1</sup>

1. Subjective Satisfaction
2. Ease of learning
3. Task Efficiency
4. Ease of remembering
5. Fit for Use
6. Understandability

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<sup>1</sup>Prioritized factors based upon the system type

## Test Tasks

ID	Name	Description
T1	Fast Start	Bob <sup>2</sup> starts up the program
T2	Move Around	Bob explores the map
T3	Search	Bob searches for the address 'Klaus Nars Vej 3, 3520 Farum'
T4	Route Search	Bob wants to find a car route between 'Eratosvej 4, 9990 Skagen' and 'Vester Oddevej 4, 4900 Nakskov'
T5	Short Route	Bob wants to find a route between the same places as in T4, but with the shortest route
T6	Mark Home	Bob wants to mark his own home 'Mjøsensgade 13, 2300 København S' on the map
T7	Walk Route	Bob wants to find a walk route between his home and 'Rued Langgaards Vej 7, 2300 København S'
T8	Change Theme	Bob wants to explore other ways to view the map
T9	Load New	Bob wants to load a piece of his favorite map of Copenhagen
T10	Save To Bin	Next time Bob loads the program he wants to load his map of Copenhagen
T11	Adjust Settings	Bob wants to change the look and feel of the program
T12	Keyboard Use	Bob wants to explore the system using the keyboard because he only has one hand available

## Problem Severity

ID	Problem	Description
1.	<i>Missing functionality or bug</i>	User is unable to perform task
2.	<i>Task failure</i>	User cannot complete or user thinks mistakenly that the task is complete
3.	<i>Annoying / Cumbersome</i>	User complains about something or it is observed that the user performs the task in a inconvenient manner.
4.	<i>Medium problem</i>	The task is finished after a long period of time (substantially longer than expected)
5.	<i>Minor problem</i>	The task is finished after a short period of time (longer than expected)

## Test Results

The following Think-Aloud test was performed on the 11th of May 2017 by Andreas Blanke (Log Keeper) and Búgvi Magnussen (Facilitator).

Problem	Count
P1	5
P2	1
P3	20
P4	1
P5	2

Example	Problems
Progressbar does not show progress	P3
Program freezing regularly	P3
Zooming is not obvious and double clicking does not help	P1, P3, P5
Address search is not very forgiving to errors	P4
Purpose of reset button not clear	P5
Address search does not tell if the typed road was found or exists	P1
Addresses in search does not appear in order	P3
Postcode and city names cannot be searched for	P1
When pressing search, it is not clear what is happening	P3
Missing distinction between start and destination point	P3
Route on the map was not cleared when pressing reset	P1
Found route although no transport button was pressed	P3
Route description was never emptied	P3
Mistakenly thought that searching for home address meant marking home	P2
Names and train stations was difficult to read on night theme	P3
Theme change reset highlight on selected buttons	P3
No alternate routes was shown when searching for routes	P3
Estimated time for routes was not clear to the user	P3
The purpose of the icons in the places menu is not clear	P3
Clear all places trash bucket function was confusing	P3
Purpose of saving is not immediately clear	P3
When loading entire map it was possible to zoom out from current loaded section although the rest of the map had not yet been parsed	P3
Route colour was different than what was expected	P3
Expected tab would change between the menus	P1, P3
Had trouble with having to closing popups to use shortcuts	P3
Expected that train, s-train and metro stations looked differently	P3

## Notes from test

User noted that the loading screen looked nice. Progress bar is not really very saying and a bit confusing.

Thought that the program freezing was annoying. Asked why there was green fields on the map. Did not immediately realize how to zoom. Believed that double clicking helped zoom in although that is not the case. User noted that the interface was good and fast to use. Noted that it seemed very different from other programs.

When asked to find an address then the system did not immediately give the option that the task required looking for. Some errors when trying to type in the correct address. Not very forgiving. Finally discovered the road. Noted that the found marker looked weird. Had trouble finding the correct spelling for the address. Noted that some buildings did not show. Noticed the colour for motorways was a bit funny looking.

Instantly found the route search menu. User noted that the reset button's purpose was not clear. Difficulties with spelling once again - might not be useful to tell the user to search for a specific road. System did not tell if the road that the user put in was an actual road. Trial and error helped a bit, but still it was a very difficult task. After a while the facilitator helped spelling the addresses. User noted that the suggested addresses did not appear in order. Still after help had trouble to figure out how the search in the route menu worked. Tried searching with cityname and postcode and it didn't work as expected. Noticed that the program freezed after pressing search - not clear that the search was happening. Noted the travel description and the route destination. Thought that it was weird that there was not distinction between start and end point. User found the search frustrating. User noted that the route description looked nice. Noted the function of the reset button, but noted that the graphical route did not disappear when doing so.

Had trouble finding the option for using the shortest route instead of the fastest route, but found it anyway. Made the search must faster than before. None of the transport buttons was pressed, but route was found anyway. Noted that it was the same route as before - didn't see any difference. On exploring found options for changing themes and such. Description field was never emptied.

When wanting to mark her own home she used the search field for finding the home. Instead of finding the places menu found the save menu and tried saving to bin. Noted that the train station was not very clear on night theme and that the text kinda disappeared on top of the roads and tracks. Difficult to read / see. Route menu is still open and menu icon has stopped being marked (might be because of theme change). Mistakenly thought the task was complete.

Quickly found the walk route required by the task. Noticed different settings and wondered what they did. Explored using them again. User complained about not seeing different routes. Also complained about not seeming the estimated travel time. Made a reference to Google Maps as to what she

expected. Wondered why the route was formed the way it was, found it a bit weird.

Already knew how to change the theme. Noted that she preferred the lighter theme. Thought it gave a better overview and looked better. Note that when changing theme then all colours changed. Noticed and wondered what the other buttons did. Finally found the places menu. Places menu did not change colour. Noted that the destination marker had disappeared. Had trouble figuring out what the icon in the places menu did. Found it easy to create and delete points. Found it weird that the trash bucket removed all. Believed that the function of saving would save the points.

Found the loading menu option very fast. Note that the route did not disappear when loading the map.

Task 10 was not very clear and had to be thoroughly explained. Found the file after thinking a bit about what to do. User noted that the task was easy, but difficult to understand.

Adjusted the settings easily, but did not see the effects of the changes. Did not actually apply the changes. Tried to load the entirety of denmark (default load), but it did not immediately appear and was restricted to panning although zooming was allowed to the outer edges of denmark. Noted that the system reminded her of Google Maps. Noted that the colour of the route seemed weird in the default theme. Noted that red and purple was contrast colours.

Had trouble finding and understanding the keyboard shortcuts. Expected that the tab button changed between the different menuues. Noted that she had to close down popups to use the keyboard short cuts.

Overall experience was nice, but complained about the night theme being started up and preferred the default theme. Liked the different amenities such as football fields and such. Noted that train stations usually is blue and that the icons for stations and metro stations are different. Requested that the icons for metro stations and other stations were usually different. Noted that denmark would normally be greener and mistakenly thought the forests were fields and green areas.