Simplifying the Route Planner in outdooractive

Usability Test Plan

Executor: **Lucie Weber**
Delivery date: **17.01.23**

Table of Contents

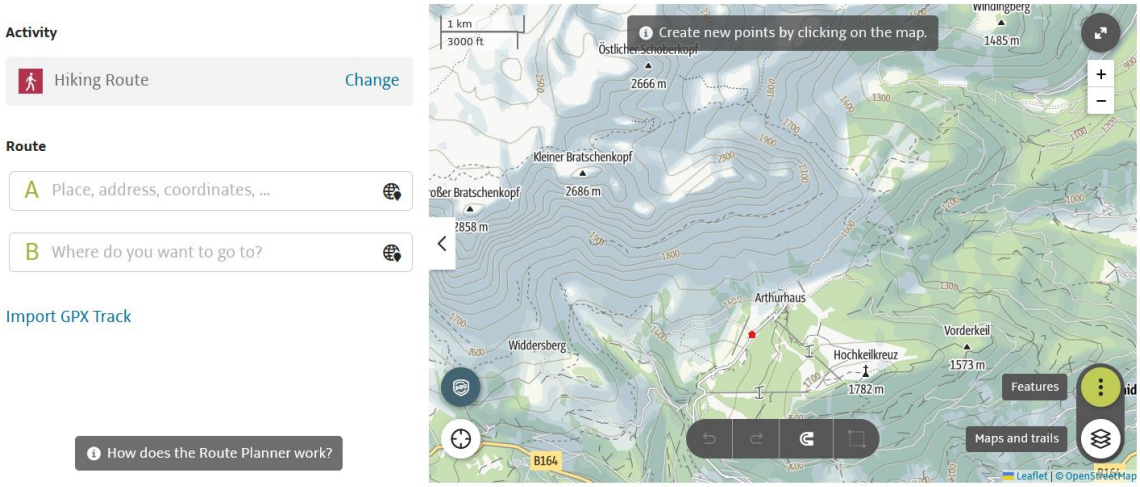
Description of the system and evaluation goals

This document describes a test plan for conducting a usability test to improve the existing web application "**outdooractive.com**". The web application allows outdoor enthusiasts to find, share and also create tours for various activities, such as hiking, biking, ski touring etc. This usability test is dedicated to the third functionality, the creation of own tours. This is possible in the so-called "Route Planner". Currently, the process of planning a tour is as follows.

To create a new tour, first select the activity. Then the starting point can be created in different ways. Either by entering the address or coordinates or by clicking on the corresponding location on a displayed map. A tour can be created by adding more waypoints in the same way. If the "Path Network" option is enabled and a path exists between two waypoints on the map, this path will be selected automatically. If this option is disabled or no path exists, an aerial line is drawn between the two waypoints. It is also possible to delete waypoints or move them on the map. These described steps should be improved and edited in the usability test tasks.
Afterwards, the tour can be given a name and further information can be added. The planning ends with saving the tour.

The usability test is intended to answer the following research question:

How can the process of creating a new route in outdooractive be simplified?



[1] Screenshot of the Route Planner in outdooractive.com

The usability test objectives are:

- To determine design inconsistencies and usability problem areas within the Route Planner. Potential sources of error may include:
  - Changing waypoints via drag and drop on the map changes the tour in an unexpected or undesired way (compare image 2)
  - Misunderstanding of icons
  - Displayed map field is too small
- Make Route Planner more intuitively
  - Use it without explanation
- Exploring ways to expedite the route planning process
  - How to create a route with less waypoints?
  - Should the system predict which route I want to take?
  - Should the system offer possibilities for waypoints/variants for the route?

[2] Changing waypoints via drag and drop

Test environment

The influence of the environment on the usability test is not so great, since tour planning is usually done at home in the evening. Therefore, no special context is considered in this usability test. To simplify the implementation, the test is conducted in a *laboratory environment*. In this way, in the best case, all participants can take their turn one after the other on the same day.

The laboratory environment is a cozy room to feel comfortable with a desk and chair. On the desk one can find a laptop and computer mouse for completing the task. Furthermore a sheet with the task instructions is provided. There is no artificial background noise.

User profiles

As already mentioned, the Outdooractive platform is aimed at all outdoor enthusiasts or those who want to become one. In principle, all age groups can use the website, but it is mainly aimed at people who are old enough to be able to plan and carry out a tour independently. Since the focus of this usability test is on the improvement possibilities of specific features, a wide age range of 20 -

60 years is chosen. The age group U20 and Ü60 is excluded, as I assume that these are not the main users of Outdooractive. Unfortunately, no exact data on the main user group could be found.
In order to identify basic and specific usability problems of the Route Planner, both inexperienced and experienced users of Outdooractive will be included in the usability test. Moreover, to have a balanced ratio, 3 participants should be found from each user group. This results in the following user profile for the test:

- Outdoor enthusiasts, aged 20-60 years, gender indifferent
- 3 inexperienced users (the Route Planner in Outdooractive has never been used or it has been longer than 2 years)
- 3 experienced users (the Route Planner in Outdooractive has been used at least 2 times in the last 3 months)

Usability Tasks

Overall Scenario
You want to do a tour to the top of *Salzburger Hochthron*. For knowing how long this will take and how many meters and altitude meters you will have to walk, you want to construct the route in outdooractive.

Task 1 – Creating the route

Scenario: You start your tour to the top of Salzburger Hochthron at the parking (Rosittenstraße 2, 5082). Afterwards you want to hike on the top by using the *Dopplersteig*. You want to descend by using the *Reitersteig*. Your tour ends again at the parking.

Task: To use outdooractive you need to login. For that we provide you a test account. Please login with the test account:
- **Username**: Person_1
- **Password**: UsaTest2023!

After the login navigate to the Route Planner in outdooractive. Choose the activity type "Hiking Route". Then create the route described in the Scenario. After having created the route, click on the button "continue" below the waypoint list. Now click on print and download the route. Please save the download as a PDF in the folder "task_1". Don't close the current outdooractive Route Planner window, you will need it for the following tasks.

Start: https://www.outdooractive.com/en/
End: PDF of created route is in folder "task_1"
Maximum duration (experienced users): 4min
Maximum duration (unexperienced users): 10min
Hints (only given if asked):

1. **How to create the route?**
   To create the route copy your starting address (Rosittenstraße 2, 5082) in the input field A under the heading Route on the left. Then click on the map on the track "Dopplersteig" to create a new waypoint. Create several waypoints on the "Dopplersteig" until reaching the top of Salzburger Hochthron. For the ascend continue creating new waypoints – this time by clicking on the track "Reitersteig". The last point should be equal to your

starting point. You can achieve that by clicking on the letter "A" on the map. Then a breadcrumb pops up and you can choose the option "Route to here".

2. **My path is drawn as the crow flies, how can I prevent this?**
   To use the path network, you must have the path network function turned on. You can turn it on or off by clicking on the magnetic symbol at the bottom of the map.

Task 2 – Changing the ascending route

Scenario: You realize that the "Dopplersteig" is currently blocked. You change your plan and want to ascend by using the "Kienbergsteig". Therefore you have to change your start position as well. Your new start position is "47.710574, 13.039573". The tour descend and end at the Rosittenstraße doesn't change.

Task: On the map near the route is a button called "Edit". Click on that button to change your route. Now change the route as described in the scenario. Afterwards click again on the button "continue" and print the route. Please save the download as a PDF in the folder "task_2". Don't close the current outdooractive Route Planner window, you will need it for the following tasks.

Start: previous window (from Task 1) or alternatively <link where the output of Task 1 is provided>
End: PDF of created route is in folder "task_2"
Maximum duration (experienced users): 3min
Maximum duration (unexperienced users): 8min
Hints (only given if asked):

1. **How to change the route?**
   To change the route, copy the given coordinates in the input field A. Then delete all the points you have created on the "Dopplersteig". The Route Planner will now automatically create a connection between your start point A and the waypoint at the peak of the "Salzburger Hochthron". It will probably select the wrong no-name trail. To change it hover over the trail and drag the appearing yellow dot to the trail called "Kienbergsteig" and drop it there. Repeat this step until the route is correct.

Task 3 – Extending the route

Scenario: You feel really fit this weekend and want to extend your route. So instead of only going to the "Salzburger Hochthron" you also want to visit the "Hochalpkopf". For this, you take the path from the "Salzburger Hochthron" over the ridge. At the "Hochalpkopf" you turn around and walk back along the ridge trail to the Salzburger Hochthron. The rest of the route does not change.

Task: Open again the edit view with your route. The change the route like described in the scenario. Afterwards click again on the button "continue" and print the route. Please save the download as a PDF in the folder "task_3". Don't close the current outdooractive Route Planner window, you will need it for the following tasks.

Start: previous window (from Task 2) or alternatively <link where the output of Task 2 is provided>
End: PDF of created route is in folder "task_3"
Maximum duration (experienced users): 1min
Maximum duration (unexperienced users): 3min

Hints (only given if asked): Drag the highpoint (top of "Salzburger Hochthron") and drop it to the peak of "Hochalpkopf".

Task 4 – Going back to parking and reverse route direction

Scenario: Since your bike is at the starting point (47.710574, 13.039573), you will want to return there after the current end point of the route (Rosittenstrasse 2, 5082). As well you decide to hike the route in the other direction.

Task: Open again the edit view. Then find ways to fulfill the scenario. Afterwards click again on the button "continue" and print the route. Please save the download as a PDF in the folder "task_4. Don't close the current outdooractive Route Planner window, you will need it for the last task.

Start: previous window (from Task 3) or alternatively <link where the output of Task 3 is provided>
End: PDF of created route is in folder "task_4"
Maximum duration (experienced users): 1,5min
Maximum duration (unexperienced users): 3min
Hints (only given if asked): Under the waypoint list on the left you can find clickable texts which will help you to fulfill your task.

Task 5 – Add the approach to the starting point

Scenario: Now you also want to know how long it will take you to ride your bike from home (Urstein S 1, 5412 Salzburg) to the starting point (47.710574, 13.039573).

Task: Open again the edit view. Find a way to add your bike ride. Afterwards click again on the button "continue" and print the route. Please save the download as a PDF in the folder "task_5.

Start: previous window (from Task 4) or alternatively <link where the output of Task 4 is provided>
End: PDF of created route is in folder "task_5"
Maximum duration (experienced users): 6min
Maximum duration (unexperienced users): 6min
Hints (only given if asked): To do this, you need to delete your current route. Because it is not possible to change the activity type of parts of the route.

Usability Assessment Metrics – Quantitative data

Task Completion rate

Evaluation goal: identify difficult tasks and thus potential areas of usability problems

Each task will require, or request, that the participant obtains or inputs specific data that would be used in course of a typical task. The task is completed when the participant indicates the task's goal has been obtained (whether successfully or unsuccessfully) or the participant requests and receives

sufficient guidance as to warrant scoring the scenario as a critical error.

➔ Assessment after each task via checkbox

Task was ❒ completed ❒ completed with hints ❒ not completed

Task Level Satisfaction
Evaluation goal: identify difficult tasks and thus potential areas of usability problems

After users attempt a task, have them answer a few or just a single question about how difficult the task was. Task level satisfaction metrics will immediately flag a difficult task, especially when compared to a database of other tasks. [1]

➔ Assessment after each task with 5-point-likert scale

How difficult was it for you to complete the task within the system?
❍ Very easy ❍ easy ❍ neutral ❍ difficult ❍ very difficult

Task Completion Time
Evaluation goal: identify difficult tasks and thus potential areas of usability problems

The time to complete each task, not including subjective evaluation durations, will be recorded.

➔ Assessment: With the help of the screen recordings the task completion time is measured.

Usability Assessment Metrics – Qualitative data

Errors
Evaluation goal: identify usability problems/misunderstandings

Record any unintended action, slip, mistake or omission a user makes while attempting a task. Record each instance of an error along with a description. For example, "user entered last name in the first name field". You can later add severity ratings to errors or classify them into categories. Errors provide excellent diagnostic information and, if possible, should be mapped to UI problems. They are somewhat time consuming to collect as they usually require a moderator or someone to review recordings. [1]

➔ Assessment: During the Usability Test the screen will be recorded. Afterwards the screen recordings will be evaluated by writing down the errors the participants have made. If possible, the errors will be mapped to UI problems.

Usability problems experienced
Evaluation goal: identify usability problems

➔ Assessment: open-ended question after each task

What difficulties or problems did you encounter in completing the task?

Test procedure

Setup

Participants will take part in the usability test at Room U SE 355 in Urstein S 1, 5412 Salzburg (FH Salzburg).
A laptop with the outdooractive web application will be used in a typical cozy living room environment. The participant's interaction with outdooractive web application will be monitored by the facilitator seated in the same room. The laptop screen will be recorded during the Usability test session.

Briefing phase and pre-interview questions

The facilitator welcomes the participants and brief them.

Participants will complete a pretest demographic and background information questionnaire. As well they will answer the pre-interview questions which are asked by the facilitator.

Execution of Tasks

The facilitator reads aloud the overall task scenario and asks if there are any questions about it.

At the start of each task, the facilitator will read aloud the task description. The task description is also provided on a printed copy handed to the participant. Afterwards the participant is allowed to begin the task. Time-on-task measurement begins when the participant starts the task.

The facilitator will observe and enter user behavior, user comments, and system actions in an excel sheet. He will hand out the sheets with the hints for the task if the participant asks for them. After each task, the participant will complete the post-task questionnaire.

Post-interview questions and good-bye

After all task scenarios are attempted, the participant will answer the post-interview questions. The facilitator than thanks for the participation and provide the participant with information how he contributed to the probable improvement of the outdooractive usability.

Briefing phase

The facilitator welcomes the participants and describes the purpose of the test. He will brief the participants on the outdooractive application and instruct the participant that they are evaluating the application, rather than the facilitator evaluating the participant. Participants will sign an informed consent that acknowledges: the participation is voluntary, that participation can cease at any time, and that the screen will be recorded but their privacy of identification will be safeguarded. The facilitator will ask the participant if they have any questions.

The next step of the briefing phase is an overview of the test procedure. He explains the process in such a way that there are first questions before the interview, then the tasks and finally again questions after the interview.
The facilitator also presents how long each phase will take.
It is announced that there are a total of 5 tasks to be solved. A time limit is set for each task, which may not be exceeded. In addition, the time per task is measured in order to better assess the difficulty of the tasks. The facilitator announces that he will read out the overall scenario of the task. This is also written on the separate task sheet that is handed out in the next step. The facilitator explains the procedure for completing the tasks. He points out that he should be told both the beginning of the task and the completion of the task. Anyone who gets stuck on completing a task can ask for a separate tip sheet. He explicitly points out that the option "How does the route planner work?" offered by Outdooractive should not be used. So, the scientific nature of the study can be ensured. If the content of the task is unclear, questions can be asked to the moderator. Otherwise, the tasks should be answered in the way that makes the most sense to oneself.

The facilitator also points out that after each task there is a short evaluation of the task with three evaluation questions. There is no time limit for this assessment. One of the evaluation questions is open-ended. It can also be answered in the form of bullet points. The facilitator will ask the participant if they have any questions.

Pre-interview questions

Experienced participants | *unexperienced participants*

Do you regularly go on outdoor trips such as hikes, bike tours, climbing routes, ski tours, etc.?

What do you mainly use the Outdooractive platform for?
Do you use other platforms similar to Outdooractive? If yes, which ones? If no, why not?

How often in the last three months have you used the Route Planner in Outdooractive?
How often in the last three months have you used route planning tools such as Google Maps or those mentioned above?

What do you use the Route Planner for in Outdooractive?
For what do you use route planning tools such as Google Maps or the ones mentioned above?

How do you feel about using the Route Planner in outdooractive so far?
How do you feel about using route planning tools such as Google Maps?

Post-interview questions

After this test, what do you think about using the Route Planner in Outdooractive?

What bothered you when using the Route Planner?

What suggestions do you have for improving the Route Planner?

If you have already worked with other platforms that are comparable to Outdooractive, do you find them easier to use? If so, what is the reason for this?

Would you want to use the Route Planner in Outdooractive again in the future? What reasons are there for or against this?

Time-plan

Experienced participants | *unexperienced participants*

Overall need of time for usability test: 2h 16min | 2h 30min

Welcome & setup phase: 10min
Briefing phase: 15 min
Pre-interview questions: 20min
Execution of tasks: 1h 6min | 1h 20min
(Max. task duration + 5min reading task + 5min assessment task)

- Task 1: 14min | 20min
- Task 2: 13min | 18min
- Task 3: 11min | 13min
- Task 4: 12min | 13min
- Task 5: 16min | 16min

Post-interview questions: 20min
Goodbye: 5min

Sources

[1] https://measuringu.com/essential-metrics/ (last time visited 16.01.23)