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Human-Computer Interaction

Exercise sheet 8

Project 3 – Evaluating   96P

Task 1 29P

1a Key questions to be answered in the study

- How much ease and comfort does the application provided?
- Was it easy to use?
- Is the interface self explanatory?   4P
- Do users stuck at some point? If yes then where?

1b A study task for the app

When conducting the study, the participants were asked to do the following:
1. Sign up for the app
2. Log in
3. Browse different fitness trails
4. Check training schedule
5. Have a look at the groups
6. Create a new group   5P
7. Check activity records
8. View the description of a station
9. Edit training schedule

1c Observation method

- Participants are Friends and Colleagues.   2P
- Site used for observation was Saarland University E 13 building.
- Observations will be recorded with the "step recorder" program built in in windows 10.

1d Questionaire   5P

Below is a questionnaire shown which should be given to all participants to fill out during the study. The data from the questionnaire will be totally anonymized before data analysis and presentation. Also see the included .CSV file in the submitted folder.

Questionnaire

Please fill out the form

Name

E-mail

Age

Address

Street Address

Street Address Line 2

City   State / Province

Postal / Zip Code

Gender

○ Male   ○ Female   ○ Other

Education

☐ Less than high school ☐ High school or equivalent ☐ Bachelors degree ☐ Masters degree
☐

Marital Status

○ Single   ○ Married   ○ In a domestic partnership ○ Divorced
○ Widowed

Questionnaire

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like to use mobile apps for fitness trail	○	○	○	○	○
I am familiar with the latest technology	○	○	○	○	○
I prefer to have an app for complete workout guidance.	○	○	○	○	○
I usually go to fitness trail in group	○	○	○	○	○
I prefer to plan my workout on weekly basis.	○	○	○	○	○
I will prefer to have an app that could guide on how to perform a certain fitness trail	○	○	○	○	○
I often create my schedule for my weekly workout.	○	○	○	○	○
I found it difficult to locate my fitness trail station	○	○	○	○	○
I often want to track my activity on fitness trails	○	○	○	○	○
I usually want to share my schedule to group.	○	○	○	○	○

1e Semistructured interviews   5P

Questions for the Semi-structured interview

1.   What is your age?

2.   What role do you have on campus? (student, worker, etc)

3.   How often do you use to exercise?

4.   Do you use to work out on a regular basis?

5.   Do you prefer working out alone, together with strangers or friends?

6.   Would you appreciate to be able to share your progress with friends?

7.   Do you want to be able to work out during your everyday life?

8.   Have you visited the fitness trail on campus?

9. Do you use any fitness app for your training?

10. Would you like to be able to get descriptions of how to do certain activities/stations?

11. What type of descriptions would you prefer? (e.g. written, pictures, video tutorial, other)

12. Would you like to be able to browse for other fitness trails in the vicinity?

13. Do you keep track of your training progress?

14. In the app, was it easy to understand what every command did or was something unclear?

15. Did any command do something else than what you expected it to do?

Below is resulting notes from three semistructured interviews.

Interview 1:

Age: 24

Role on campus: student

The participant use to exercise 4 times a week and works out on a daily basis.

They prefer to work out alone, since they feel uncomfortable doing it with other people.

They would appreciate to work out in their everyday life but haven't visited the fitness trail on campus.

They do use an app for their training and would like to be able to share their progress with friends.

Descriptions of how to do certain activities/stations would be good, preferable pictures and written description since they don't like video tutorials.

To browse for other fitness trails in the vicinity would also be good.

They do keep track of their training record.

One thing with the app that was confusing was that on the home screen, one couldn't click on the map to get to the fitness trail but had to click on the text below it. To make the map a button too would be good.

Nothing else unexpected occurred.

Interview 2:

Age: 20
Role on campus: student
The participant use to work out on average one time every second week.
They do not do exercises on a regular basis, but more sporadic when they feel they have been unhealthy.

The participant would like to work out with friends, but haven't found too many to do so with so they most often work out alone.

They would appreciate to be able to share their activity, if they got a better habit with more regular work out sessions.

They don't desire the possibility to work out in their everyday life at campus, but would not mind if they had it.

They have visited the fitness trail on campus, but only twise, with friends.

They don't use any fitness app when working out.

The participant thinks the description that already exists at the trail is sufficient to do most stations, but some of the m are a bit unclear.

They would prefer written description with descriptive images.

To be able to browse for other trails in the vicinity would be appreciated by the subject.

They do not keep track of their training progress.

In the app, at the home screen they was confused about what the difference between the map icon on every fitness trail and the pin needle to the map to explore for other trails was.

The app did more or less what the participant assumed it to do based on the button labels.

Interview 3:

Age: 24

Role on campus: student

The participant does not do exercise much frequently, once in a week.

The participant always like to workout with friends or family and always plan to go with them.

They appreciate the idea of sharing their activity among friends with whom they go for exercise so that they can manage to go more frequently.

They usually go for a work out in campus with friends for fun but they will be more happy if they do it properly and maintain their activity more often.

They have visited fitness trail on campus but just to have fun with friends.

No, They don't use any app.

Participant thinks that having description on how to do certain activity will probably create more interest for them in doing more and more exercise because they found the current description not so intuitive and there was language barriers as well.

Participants would prefer step by step video tutorial for each station.

Participants thinks it would be great if they can have recommendations by knowing on which stations they are currently at and then showing next recommended stations.

No, they did not keep any record of their training progress.

Participant thinks that the flow of the app was easy to understand by everything self explanatory.

According to participant, commands in the app follows everything which was expected to perform.

1f Consent form

Below you see the consent form all participants filled in and returned before the study was conducted.

PART I: Information Sheet

Introduction
I am _____, a student at Saarland University. We are doing research on a companion mobile app for the program "Campus in Bewegung - Fitness-Trail" to help all people on the university campus to integrate exercise fun and fitness during the day as part of the Human Computer Interaction lecture. I am going to give you information and invite you to be part of this research. Before you decide, you can talk to anyone you feel comfortable with about the research.

There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask the principal investigator of the project, Mirza Misbah, Anton Hag and Shahzain Mehboob.

Purpose of the research and type of manipulation
[The purpose of this research is to take feedback from user how we can introduce an app specifically for the fitness trail. From user feedback we can improve our user interface (colour, icons orientation and visualization, Metaphors).

Participant selection
You have been invited to this study because you are representative of a group of users that we would like to be able to use our interface.

Voluntary Participation
Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and stop participating even if you agreed earlier.

Procedures and Protocol
Firstly create an account if user have already an account just login. After that user will use an app and give feedback is the colour scheme is fine, placement of buttons are on a correct position that is feasible for user to access and is it metaphor are understandable for users?.

Duration
The research takes place over about 20 mints.

Risks and Benefits
We anticipate no risks from participating in the experiment. If you participate in the experiment, you will help us, the researchers conducting the study, to advance our understanding of whether the interface may be useful.

Reimbursements
You will not be given any money or gifts to take part in this research. We do thank you, however, for your valuable time.

Confidentiality
The data we collect from you will be made anonymous; your name will be replaced with a number known only to the person facilitating the experiment and the principal investigator.

Sharing the Results
We will publish the results in order that other interested people may learn from our research. No confidential information will be shared.

Right to Refuse or Withdraw
You do not have to take part in this research if you do not wish to do so. You may also stop participating in the research at any time you choose. It is your choice and all of your rights will still be respected.

Who to Contact
If you have any questions about the study at a later stage, please contact the principal investigator

Name: Shahzain Mehboob   Name: Mirza Misbah
Address: An der Sauerwies 6A   Address: Fritz-Dobisch Str 15
Email: shahzainmehboob@gmail.com   Email: Mubeenmisbah90@gmail.com

Name: Anton Hag
Address: Waldhausweg 15
Email: Juni.hag@protonmail.com

You can ask me any more questions about any part of the research study, if you wish to. Do you have any questions?

PART II: Certificate of Consent

I have read the foregoing information. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.

Participant Name: _____

Signature of Participant: _____

Date: _____
          Day/month/year

Statement by the researcher/person taking consent
I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

 A copy of this ICF has been provided to the participant.

Name of person taking the consent   _____
Signature of person taking the consent   _____

Date   _____   **Day/month/year**

1g. Procedure description

When conducting the study, the participants will first be shown the consent form to fill in if they agree to participate. The consent form will not be presented due to data participant anonymity.

The participants will then be asked to do the actions listed in 1b in the app.

When finished, they will be asked to fill in the questionnaire.

Finally, they will be asked the interview questions from 1e.

Task 2: *Pilot Study*

Solution:

Procedure Followed:

1. Signing up to the app.
2. Login in the app.
3. Try different Fitness Trials.
4. Check Training Schedule.
5. Create groups.
6. Have a look at groups.
7. Check Activity record.
8. View Station's description.
9. Edit schedule.

Difficulties & Problem Faced:

1. No Demonstration in the beginning makes the procedure cumbersome.
2. User Don't know that do they need user name or email to logged in.
3. It was unclear that which sub-part of the routine in already done.
4. User don't know how to edit the schedule.
5. It was unclear that how many persons can be added to a group.

Improvements:
1. We added a brief demonstration of the application so that the users knew what was the experiment about, and how to go about using it.
2. We clearly stated that email address can be used only to logged in.
3. We had added a break in between our action sequence for experiments, but it caused confusion to the user and broke their rhythm, we removed it in the final version as above.
4. Scheduling was not properly meta-phorized we modified that.
5. We clearly state that there are no limits for the number of people in the group.

3 Conduct study

The improvements from the pilot study above was considered when conducting the studies.

All data from the study was anonymized before summarized below.

Study 1.

Data from questionnaire:

Age: 22

Gender: Male

Education: Masters degree

Martial status: Single

Questionnaire

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like to use mobile apps for fitness trail	○	⦿	○	○	○
I am familiar with the latest technology	⦿	○	○	○	○
I prefer to have an app for complete workout guidance.	○	⦿	○	○	○
I usually go to fitness trail in group	○	○	⦿	○	○
I prefer to plan my workout on weekly basis.	⦿	○	○	○	○
I will prefer to have an app that could guide on how to perform a certain fitness trail	⦿	○	○	○	○
I often create my schedule for my weekly workout.	⦿	○	○	○	○
I found it difficult to locate my fitness trail station	○	○	⦿	○	○
I often want to track my activity on fitness trails	⦿	○	○	○	○
I usually want to share my schedule to group.	○	○	⦿	○	○

Things noticed when person 1 tried out the app:

The user repeatedly tried to klick on the map image on the home screen to get to fitness trail 1. They seemed confused when it did not work and did not found out where the hit box for the button was.

When told to check their activity records, the user was already at the group view from the previous task. They then thought that that screen was the activity record screen. When trying to navigate to it from the home screen, they found their way directly.

When told to view descriptions of a station or go through the guidelines for a trail, the user went into the "navigate to trail" screen and pressed on the "show next station" (on map) button, thinking that would lead them to the description. Probably thought that the button was not implemented in the prototype since they had been pressing other buttons that was not implemented earlier. Did not realized that the icon on the map was the actual button to the description of the trail.

When the user should edit a schedule, they first added a new one. On the next try, they correctly entered the edit mode.

Study 2.

Age: 21

Gender: Female

Education: High school or equvivalent

Marital status: Single

Questionnaire

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like to use mobile apps for fitness trail	○	○	○	⊙	○
I am familiar with the latest technology	○	○	⊙	○	○
I prefer to have an app for complete workout guidance.	○	○	○	⊙	○
I usually go to fitness trail in group	○	⊙	○	○	○
I prefer to plan my workout on weekly basis.	○	⊙	○	○	○
I will prefer to have an app that could guide on how to perform a certain fitness trail	○	⊙	○	○	○
I often create my schedule for my weekly workout.	○	○	○	○	⊙
I found it difficult to locate my fitness trail station	○	⊙	○	○	○
I often want to track my activity on fitness trails	○	○	○	○	⊙
I usually want to share my schedule to group.	○	○	○	○	⊙

Things noticed when person 2 tried the app:

When checking the activity record, the user first wrongly went to the "Activity records" screen. After returning to the home screen, they took the path via the fitness trail.

When told to view station descriptions, the user first opened the side menu of the home screen. After that they went to the right path.

When the user should edit a schedule, instead of pressing the edit button they deleted the scheduled and created a new one.

Study 3.

Age: 24

Gender: male

Education: Declined/missing

Marital status: Single

Questionnaire

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like to use mobile apps for fitness trail	○	○	◉	○	○
I am familiar with the latest technology	○	◉	○	○	○
I prefer to have an app for complete workout guidance.	○	○	◉	○	○
I usually go to fitness trail in group	○	○	○	○	○
I prefer to plan my workout on weekly basis.	○	◉	○	○	○
I will prefer to have an app that could guide on how to perform a certain fitness trail	○	◉	○	○	○
I often create my schedule for my weekly workout.	○	○	○	◉	○
I found it difficult to locate my fitness trail station	○	○	○	◉	○
I often want to track my activity on fitness trails	○	○	◉	○	○
I usually want to share my schedule to group.	○	○	○	◉	○

Things noticed when person 3 tried the app:

When told to try different fitness trails, they pressed the icon to navigate to one certain fitness trail instead of exploring all trails.

When they should view the station descriptions, their first intuition was to open the side menu, but they closed it again since they couldn't find anything that seemed to be what they searched for there. They then pressed the image of the map for fitness trail 1 (which is not a button/link), but since it did not work they tried both the map for that trail and the one for exploring all trails. Even though they continued to try, they couldn't find the hitbox for the button to fitness trail 1. But when they got a hint where it was, they managed to find their way on the first try.

Study 4.

Age: 26

Gender: Other

Education: Masters degree

Marital status: In a domestic relationship

Questionnaire

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like to use mobile apps for fitness trail	●	○	○	○	○
I am familiar with the latest technology	○	●	○	○	○
I prefer to have an app for complete workout guidance.	○	○	●	○	○
I usually go to fitness trail in group	○	○	●	○	○
I prefer to plan my workout on weekly basis.	○	●	○	○	○
I will prefer to have an app that could guide on how to perform a certain fitness trail	○	○	●	○	○
I often create my schedule for my weekly workout.	●	○	○	○	○
I found it difficult to locate my fitness trail station	○	○	○	●	○
I often want to track my activity on fitness trails	○	●	○	○	○
I usually want to share my schedule to group.	●	○	○	○	○

<u>Things noticed when person 4 tried the app:</u>

When they should try out different fitness trails, their first search was in the side menu. After that they found their way to the right screen.

When told to view station descriptions, this participant too

4. Data analysis

Following is the questions listed in task 1 given, and the answer is evaluated based on the findings from the studies.

<u>How much ease and comfort does the application provided?</u>
The app has some frequently used elements such as the back and home buttons placed on top of the screen, which might be a problem to reach when deployed on a phone and is being used with only one hand.
Most of the functions however have describing labels.

<u>Was it easy to use?</u>
Most of the user was able to navigate through most of the functions.

<u>Is interface self explanatory?</u>
Most of the things are self explanatory.
One part that is not is the icon on the map on the "navigate to next station" screen sowed to the right, which most user mistook for not being a button.

<u>Do users stuck at some point? If yes then where?</u>
One place where many users got stuck was on the home screen, when they tried to get descriptions of the fitness trail. They thought that the picture of the map was a button and tapped it (area highlighted in green in the picture to the right). Getting stuck on the home screen is not good and this is a part that preferably should be changed.

Another point was at the "navigate to next station" screen, where the users did not understood that the icon on the map was a button.

<u>Important findings:</u>

The picture for each fitness trail on the home screen should be a button to that trail too, not only the text.

The "navigate to trail" screen should be clarified. One way could be to add another button that leads to the station description instead of having the icon on the map acting as that.
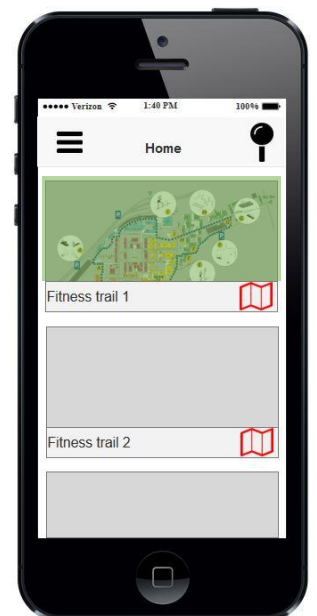
5. Presenting the slides during the tutorial

The slides to be presented during the tutorial is given in a separate pdf file in the submitted folder.

Presentation: 22P