

Mirza Misbah Mubeen Baig 2571567

Shahzain Mehboob 2571564

Anton Hag 2575432

Human-Computer Interaction

Exercise sheet 6

97P

Project 1 - Establish requirements

24

Task 1: To further the understanding of the problem space, observe people who are doing exercises on the fitness trail and other sports options on the campus.

Solution:

Person 1: I observed one man who was not carrying anything to know how to perform exercise task but was keen on doing a lot of stuff which was visible through his intent of checking out the description written on the station and trying to follow them accordingly. He was continuously changing his direction, on one instance, I noticed that he took some time in observing other people. Moreover, he also asked one of the employees to help him out in performing certain exercise which turned out to be a quite helpful for him.

Person 2: There was another guy who seems very confused and seeking for someone to help him. He looked very keen to do some exercise but looking for proper guideline. He was also not carrying anything, neither a navigation nor any smartphone application, therefore, it was clear that he had not made up his mind on what he wanted to do. He visited some of the fitness trail more than once and decided to perform some exercise in his second or third visit. He was in his proper exercising outfit which indicated that he might have wanted to do proper exercise after getting familiar with one of fitness trails.

Person 3: I observed two students trying to do some exercise on the fitness trail but they didn't have any proper guideline and it seems that they were trying to understand the description written on the station but they were unable to translate it to their native language nor did they use any fitness app. The first thing I observed that they were not familiar with German language because they were having problems in reading the description whereas they both were trying to understand the exercise by looking at it and guiding each other without any accurate information. They both were sharing their experience and letting others to try based on those experience. I also observed that they went to different stations as well, tried to perform exercise on all of those visited, but came back to the one they feel comfortable with. It seems that they don't have any plan before coming to exercise.

Person 4: I observed another group of students who were using a fitness app. It was really interesting to observe second group because this group was quite opposite from first group. They were almost same by age as the first group and looked delighted. We observed first that they picked their designated station from the app and started walking towards its direction using navigation. We observed they were using fitness app and went on each station according to the suggestion given by fitness app, that was a distinguished factor from the first group. The second thing we analyzed is that first they first set their preference of exercises according to the description of each fitness trail station provided by the app and then they decided which exercise suits their mood accordingly. They didn't spend most of their time by just looking on the description but they plan it accordingly. Apart of this, mostly they knew what they needed and was not looking for someone's guidance. We thought that they knew what exercise suits their mood best and just took them.

Person 5: The next person we observed was willing to perform some activity but she didn't use any smartphone app. It seemed like she knew what activity she was performing because she directly went to specific station of the fitness trail instead of looking around. But we observed that the person was confused in that she went back and forth to the same station twice to look for other varieties of the same kind of activity even though she looked like she was in a hurry.

Person 6: The person we observed was carrying a navigation map and moving around to different stations. We observe that he consulted his smartphone a number of times. It seemed like he didn't have a premeditated list of exercise activity in his mind since he went around looking at different stations without doing any activity on them. We observed that he spent a lot of time on some stations, probably looking through different activities on the same station. Again, we observed that he went all the way back to a station again where he did not do any activity at first. He didn't seem to follow any specific path and just went along the way through his navigation.

Summary of observations: We went to different stations of fitness trail in the University and observed the general behavior of people in the stations. We picked six people to study their behavior. Our goal was to find different types of users in order to better understand the needs of all the groups. Majority of the people took their time to perform an activity. Some even took their time looking at different stations. There was no general pattern which the people seemed to follow in the Fitness-Trail as some people even went back to the stations where they had already visited before. Surprisingly, majority of the people were not carrying any kind of guideline or any fitness app but we noticed that with a fitness app will surely remove all the hurdles that a user had to face while performing any activity on different stations of Fitness Trail.

6 Task 2: Prepare interview questions to further your understanding of the behavior you observed above.

Solution:

- 1.1. Do you like to have activity and fitness trail in everyday live at any point in the University?
- 1.2. Do you carry a fitness training program / use a smartphone application for fitness trail?
a. If yes, how do you organize it?
b. If no, why not?
- 1.3. Do you like to have activity and fitness trail alone / with family / friends?
- 1.4. Do you require a person with you for a guide on how to perform an activity on different sites?
- 1.5. What things are a must for you while going for a fitness trail?
- 1.6. If you don't find your desired fitness trail, then what do you do?
- 1.7. How often do you exercise?
- 1.8. If you don't find your desired exercise program in university, will you approach another fitness trail?
- 1.9. Do you look for a navigation tool to help you find your desired fitness trail?
- 1.10. What is the average time you spent on an activity?
- 1.11. Are you satisfied with fitness training application that are available?
- 1.12. What type of interaction would you prefer with a fitness application?
- 1.13. If a fitness application displays a navigation map to find different fitness trail in the university, will this be helpful? (-0.5P, do not focus too much on the application here, rather ask if it a "general map (not necessary in the app) would be helpful)
- 1.14. Do you keep track of your physical activity and progress?
- 1.15. Name at least one problem you had to face during your exercise time?

-1.5 (missing demographic questions)

Task 3: Conduct interviews**Solution:**

5 key findings found:

- The provided instructions at the trail are sometimes unclear and could be improved. Raised by participant #1, but also #2 and 4.
- A feature to help keep record of one's training would be good, as well as guiding one through it both with the help of navigation tools and good instructions. Raised by participant #2, as well as #4 and 5.
- Showing difficulty level of different exercises would be a good feature, raised by participant #3.
- A training schedule seems to be highly desired. Raised by participant #4, but #1, 2 and 5 also agrees.
- The app should guide the user through the training session. Examples of this could be to tell the user how much weight they should lift, how many repetitions of an exercise they should use or for how long one should continue doing a certain task, e.g. with the help of a timer. Raised by participant #5, #1, 2 and 3 also shared those thoughts.

Below follows a summarization of the interviews. They might look like structured interviews but were done in a more semi-structured manner where follow up questions and similar could occur.

If you are only interested in the key findings, you don't have to read through it and can move to the next task.

Participant 1.

1. Would not like to have fitness in everyday life at campus. Have sometimes stumbled across the trail and played with the stations, but nothing more.
2. Does not use any fitness app since they think it's unnecessary.
3. Doesn't use to exercise at all. Used to do it previous in rehab purpose, but not anymore.
4. A guide is not needed since there are instructions.
5. Nothing particular. Personal equipment such as training clothes are more important.
6. If the fitness center had it, they would sign up there. Haven't done so because of the high prices, though.
7. Never use to exercise.
8. Would maybe search for another one somewhere else. They would probably like one that is more hidden more since it feels uncomfortable to use this where many people pass and can watch one exercise.
9. Doesn't look for navigation tool since they already know where the stations are. Think one know that if one uses to study at this campus, particularly if one uses to take a walk now and then. It's also maps that can be used.
10. They use to spend maybe 10 minutes per station, if it's funny enough.
11. Since the trail is free to use, they are very satisfied with it. Can't see how it would not be enough.
12. In an app they would appreciate if it told them how many repetitions and for how long they should do a particular exercise at a station. Doesn't want to think by them self if they have done enough at a task.
13. A navigation map in the app would not harm, but is not needed for them since they know where they are. Think it would be good with as much functionality as possible in an app.
14. They do not keep track of their physical records.
15. One problem that have occurred is that there are sometimes only images and no text, which can be unclear and it might therefore be hard to know what to do at some stations.

One finding: Instructions provided are sometimes unclear. Could be improved.

Participant 2.

1. It would be nice to have fitness activity in the everyday life at campus, but not necessary. Since they haven't used it, they don't know whether it would change anything or not.
2. They have used a fitness app in the past, but stopped when the pro subscription ended. Have no particular reason to use it now since they are not too much into training at the moment.
3. They prefer to exercise alone, or maybe with the company of friends.
4. It would definitely be good having a guide that could teach one how to use the stations.
5. The equipment at the stations are a must, of course. It must also be in good condition, not broken and not dirty and so on.
6. If they don't find the proper training station for a particular exercise, they would most likely just skip it. If they for example couldn't find one station, they would probably just go to the next station instead.
7. They usually exercise 1-2 times a week.
8. A navigation tool to help find the desired exercises would be helpful. If they spotted something on the way in between two stations that could be used for an particular exercise they want to do, they would most probably stop and use it for that. If there was 2 trails equally distant from home, where one were the campus trail and the other one had all that equipment and more equipment that could be used for a specific exercise they want to do, they would most probably go to the other trail instead. The campus trail however has the advantage that it easy can be used in the everyday life.
9. They have not looked for a navigation app so far. But if there was an app, they would like it to show where to go next.
10. They have not yet tested the fitness trail.
11. They can't tell since they don't know all stations. But based on what they've seen from walking them, they seem to provide a broad variety of exercises. They did not have time to do any of the introduction tutorials at hochschulsport, but otherwise they should have used it.
12. A fitness application should have a description of how to do exercises. It should also have some kind of timer to tell for how long one should do a specific exercise, so that it tells when one can stop doing an exercise. It should also keep track of ones previous score of that station and follow ones progress. A GPS navigation tool would be nice to have too.
13. A navigation map would be helpful, yes.
14. They do not keep track of their training record. Used to do it previous with an app, but it lacked functionality so they stopped using it and thinks it would be too time consuming to do it manually.
15. One problem they have encountered is that the equipment sometimes is taken. The instructions are sometimes also quite unclear.

A finding: It would be good if the app could help one keep record of one's training and guide one through it, both using navigation and providing good instructions.

Participant 3.

1. The interviewed person does not feel the need of a fitness trail at the campus. They want sport in their life, but not necessary at campus.
2. They never use a fitness app. Sometimes they have browsed for them, but never installed nor tested it in the end.
3. They usually want to exercise alone.
4. Since there are descriptions of what to do at the stations, they don't think a guide is needed.
5. They require that the stations have soft ground, so that one doesn't hurt oneself if falling.
6. If they wouldn't find their desired exercise station, they would probably search for another trail that has it.
7. They use to exercise about 3 times a week.
8. Same as question 6.
9. They like the idea of a navigation tool to help find the desired fitness trails.
10. The person hasn't yet tested the fitness trail.
11. They haven't studied the fitness trail too much, but it has seemed fine when they have walked past it.
12. In a fitness application, they would like to have a description of difficulty level of tasks. Something that would tell one how much time one should spend on a task would also be good, and some kind of timer.
13. They think a navigator would be helpful, since they are not sure whether they know where all the stations are.
14. They don't keep track of their training.
15. Sometimes it's hard to continue to do an exercise for a certain amount of time, and having a countdown could motivate one to continue longer.

A key finding: Showing difficulty level of different exercises would be a good thing to have.

Participant 4.

1. They do like to have access to fitness activity in their everyday life at campus.
2. They don't use an app since they don't think it provides anything they needs. Thinks the training is more about how efficient one does an exercise than e.g. how many times one does it, which usually is what an app tells the user.
3. They like to work out with friends since they like the competition.
4. A guide would be good, since having someone with experience is always good.
5. The equipment of the trail is not that important, it's more about personal equipment and mindset.
6. If they don't find the desired station, they only does those available and don't search for other ones.
7. They usually work out every day.
8. If there was not a fitness trail at campus, they would probably go somewhere else for it.
9. They would like to have a navigation tool to help find other trails and training stations.
10. The average time spent on one single station is 30 mins.
11. They are satisfied with the apps available.
12. If they used an app, they would like it to have a schedule of what to do.
13. They do think that a navigation help would be good in such an app.
14. They use to keep track of their records using an app.
15. One problem they have encountered during fitness is that it can be hard to know how to do an exercise, and clearer descriptions would be good.

A finding: Some kind of schedule seems to be desired by many.

Participant 5.

1. They would appreciate the opportunity to work out in their everyday life at campus.
2. They have not used a fitness app, since they haven't found anything that looks good and are free. But they think it would be good if it had sufficient functionality and did not take focus from the exercises.
3. They prefer to work out with only one friend or alone. Could do it in groups also, but wouldn't prefer it.
4. They think they would figure out how to use the equipment without a guide, but having English signs would be appreciated. Prefers to try out on their self, rather than having a guide.
5. Since they often and mainly do deadlift, it's highly desired. However they think it would be difficult to have such equipment freely available since it requires weights that can be stolen. Some equipment to train the upper body would be good though, since they don't think they can train that muscle group without equipment.
6. If they did not find a good fitness trail, they would go to a gym.
7. Usually they work out at least 3 times every week.
8. If they don't find their desired fitness trail at campus they would go to the gym instead, and run to train stamina. The deadlift is a must, but if there is a versatile exercise somewhere else they might use it in between the deadlift passes.
9. They would probably not use a navigator tool, but a regular map or a written note to know where to go.
10. The average time spent on one single activity is 15-20 min for the core activities, and 5 – 10 mins for some smaller ones.
11. They don't know too much about the app range available, since they haven't searched for them. Since the most of them cost money, they however might be unsatisfied with them.
12. Desired features of a fitness app would be a training schedule that says on which days of the week one should work out and which muscle groups to train then. It would also be nice if it said how much weight one should go for.
13. A navigation app would be useful, but they would prefer to just use pen and paper. If there only are a few stations, one should be able to know where they are after the first session and then a map wouldn't be necessary. But it might be good to guide new students.
14. They use to keep track of their record, but only by memory.
15. One problem they have encountered during work out is that they think it's hard to figure out how to stretch all muscles.

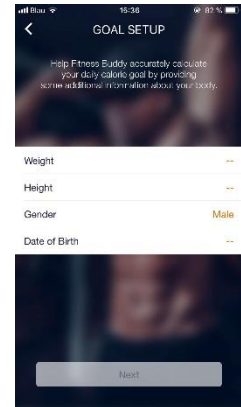
Key finding: The app should guide the user through the exercise session, like as telling them how much weight to lift or for how long one should do a certain exercise.

6 Task 4: Research existing approaches

Solution:

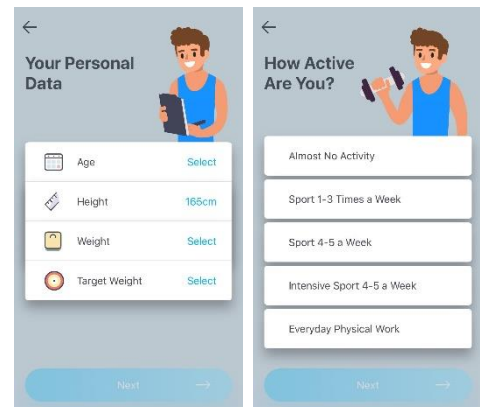
Fitness Buddy (iOS - Free)

- The app enables the users to create schedule which get instantly shared with the assigned trainer. This makes easy for the trainer to properly schedule every person in different slots.
- As noted during our observations, some users like to do workout in a group. Fitness Buddy automatically make a group of different persons trying to work out in a group with the same trainer on the same time.
- Frequently done exercises can be marked as 'Favorites'.
- The app also allows a user to save trainers video. With a single tap, a user can watch it and also save them to the favorites so that they can watch frequently without searching them all the time.



Get Fit (Android, iOS - Free)

- The app allows the users to create daily exercises routine and they can share it with the follow members as well (if they want only).
- The app allows creating custom groups through which users can chat and discuss their progress with the follow members and with trainer.
- Input methods include audio as well.
- The app also includes a QR code scanner. Upon scanning a QR user can be added to different groups who are following different diets, workout techniques, following trainer and watching videos. As noted during our observations, some people looked up the follow members and their progress to start specific routine. By scanning the QR, people can see how many users are following which routine and what diet charts.



15 **Task 5: Identify stakeholders**

Solution:

- a) Customers
 - Direct Customer (e.g. people that doing workout at the GYM and training studios)
 - Indirect Customer (e.g. people that prefer to watch online videos to follow specific routine)
- b) Marketing professionals(Analyst)
- c) Managers and Owner
- d) Trainers
- e) Body Building professionals
- f) IT Manager/Technical Support

Person 1:

Direct customer

Technical Assistant

Fictional Name: Hannah

BACKGROUND

- Female
- 38 years' old
- Married
- Mother of two child

CHARACTERISTICS

- Positive
- Calm
- Confident
- Intellectual
- Purposeful



Hannah watched some training instructions videos before going to bed last night. She found them interesting and would like to test them, and in the app for campus in bewegung she sees in the station descriptions that one of the stations seems to have the right equipment needed for the workout task she has in mind. During the morning she convinces two other colleagues to go work out with her during the lunch break.

The station Hannah wants to try out is located at the other side of campus, and since none of them have been there before they consult the navigation tool in the app to take them there. After arriving, Hannah, who have read the descriptions the night before, explains for her friends how to do the exercises and they then test it out. After half an hour, their lunch break is over so they go back and continue working.

(-1P, here you focus too much on the trail and the app, rather describe her personality more)

Person 2:

Indirect customer

Technical Author

Fictional Name: Maximillian

BACKGROUND

- Male
- 27 years' old
- Un-married
- Writer

CHARACTERISTICS

- Buoyant
- Multitasking
- Active
- Emotional
- Cognitive



Maximillian is a technical author with 12 years of experience. Once he visited friends and went to a party over the weekend. Due to this, he drank some beer and did not work out anything for these days, which he uses to do. On Monday, he mentally feels unfit and want to do something to improve his shape. He therefore quit work an hour earlier than usual to go to the fitness trail. The fitness app tells him that he hasn't done a couple of exercises that was scheduled for the weekend, so he begins with doing those. After that, he also does the things scheduled for Monday. He then drives home, has a shower and cooks food.

4 Task 6: Create scenario

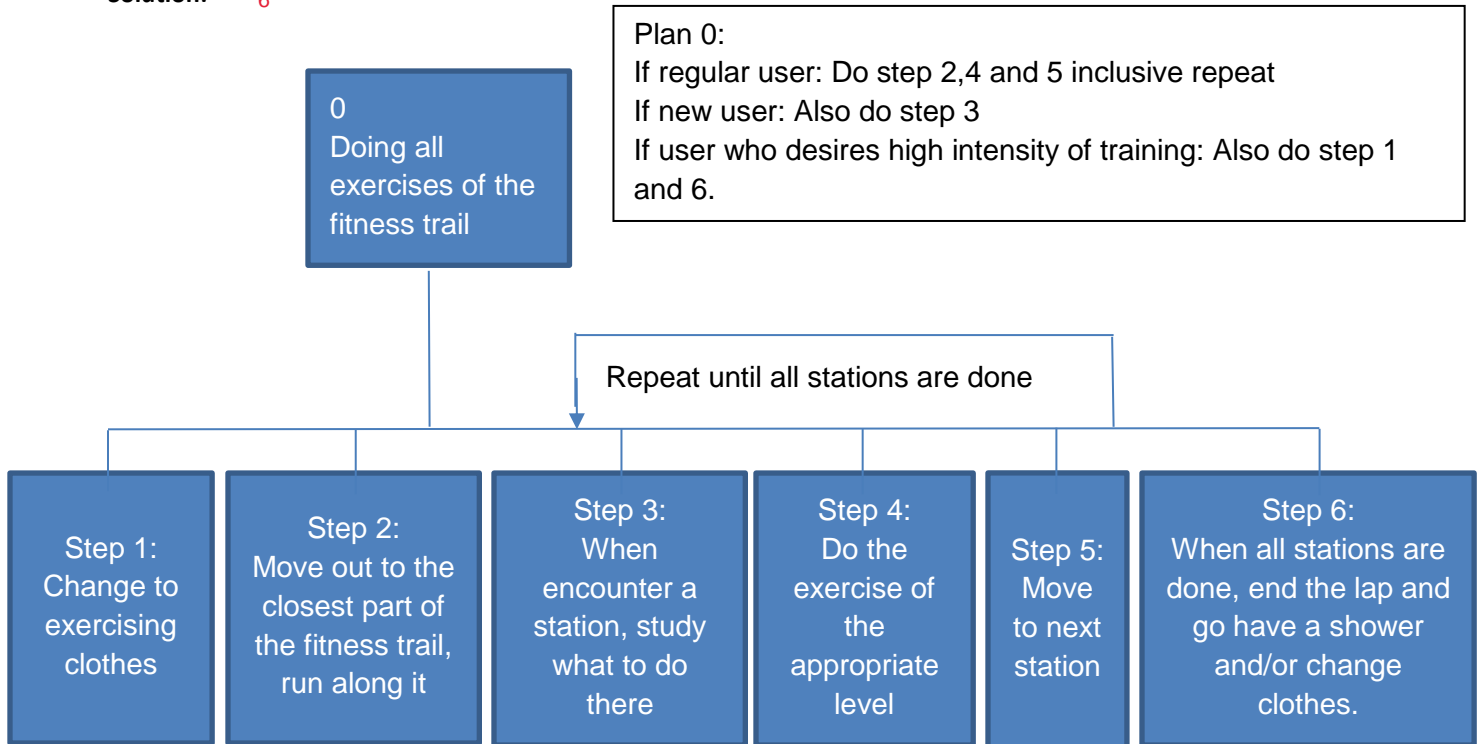
Solution:

2 *Indirect customer scenario:* Hannah watched some training instructions videos before going to bed last night. She found them interesting and would like to test them, and in the app for campus in bewegung she sees in the station descriptions that one of the stations seems to have the right equipment needed for the workout task she has in mind. During the morning she convinces two other colleagues to go work out with her during the lunch break. The station Hannah wants to try out is located at the other side of campus, and since none of them have been there before they consult the navigation tool in the app to take them there. After arriving, Hannah, who have read the descriptions the night before, explains for her friends how to do the exercises and they then test it out. After half an hour, their lunch break is over so they go back and continue working. (-2P, this is your description of the persona, then youse it not as a scenario)

2 *Direct customer scenario 2:* Maximilian visited friends and went to a party over the weekend. Due to this, he drank some beer and did not work out anything for these days, which he uses to do. On Monday, he mentally feels unfit and want to do something to improve his shape. He therefore quit work an hour earlier than usual to go to the fitness trail. The fitness app tells him that he hasn't done a couple of exercises that was scheduled for the weekend, so he begins with doing those. After that, he also does the things scheduled for Monday. He then drives home, has a shower and cooks food. -2P, this is your description of the persona, then youse it not as a scenario)

Task 7: Perform hierarchical task analysis (HTA)

Solution: 6



Task 8: Create a use case 6

Solution:

User case: A person who likes training and is fit, but haven't tested the fitness trail yet. They work on campus and have access to a dressing room for the employees of that department.

1. Since the user is fit and wants to train hard, they first go to the employee dressing room, changing to exercising clothes.
2. The user moves out to the part of the trail that is closest to their work place and starts running along the fitness trail, following the signs.
3. When encounter the next station on the trail, they stop and reads on the sign to know what to do at that station.
4. Since the user is fit and use to exercise hard, they choose and successfully does the "schwer"/hard level of that station.
5. Since this station has only one task to do, they continue to run along the trail, following the signs to the next station.
6. The user repeats step 3 to 5 until all stations are finished.
7. When finished, the user runs back to the dressing room, haves a shower since they got sweaty during the exercise, changes to normal working clothes again and continues working.

Task 9: Identify requirements**Solution:****Must-have:**

- *Functional*
 - Manage one or more workout sequences i.e. create, edit and delete sequence.
 - Add/remove exercises to/from a sequence.
 - Auto completion of queries.
- *Data*
 - Database of diets from which a user can choose.
 - Storing monthly calories calculation of a user(s).
- *User characteristics*
 - User has a basic understanding of using smartphones.

Should-have:

- *Functional*
 - Notification pop-up or highlight diets which have been edited by trainer of the user.
 - Keep track of monthly activities.
 - Group people into different categories.
- *Environmental*
 - Sharing of schedules with other members or trainers.
- *Data*
 - Database of monthly activities.
 - Mapping of groups to specific plans.

Nice-to-have:

- *Functional*
 - Nearby stations suggestions and navigation.
 - Comment on plans added by trainers of the group.
 - Suggest healthier and easier alternatives to plans selected.