

# HUMAN COMPUTER INTERACTION

## Project 1 – Establish Requirements

86.5

**Julian Jürgen Janson – 2548428**

**Hassan Mahmoud Soliman – 2576774**

**Koushik Chowdhury – 2572865**

### TASK 1

- Experiments and Observations are conducted on 4 people/groups on the fitness trail "Campus in Bewegung"
- Experiments and Observations conducted by Hassan Soliman on 15.12.2018 on the following participants:-

ID	NAME	CONTEXT OBSERVED	CONSENT	TIME OBSERVED
01	Osama Mowafy	Individual	Accepted	20 MIN
02	Islam Rumel	Individual/Group	Accepted	25 MIN
03	Koushik Chowdhury	Individual/Group	Accepted	10 MIN
04	Mohamed Taha	Individual	Accepted	10 MIN

### EXPERIMENT STEPS

- First, I asked all participants for their consent to observe them and take pictures while they interact with the fitness trail.
- Second, I collected some data of the participants, e.g. their age, height, degree of strength. So that I could get insights on their characteristics and capabilities.
- Third, I let them deal with the different equipment of the fitness trail, then started to make observations of what they are trying to achieve, and how they did it.
- Fourth, I asked each one of the participants about the problems faced during their interaction with the fitness trail, and their general opinion about their experience.
- Finally, I asked them to if there is no problem to state their names in the experiment, and call them again for further experiments and interviews.

18P ( -6P missing summary on the key findings)

OBSERVATION NUMBER 1



Figure (a)

Figure (b)

PARTICIPANTS' ID	CHARACTERISTICS & CAPABILITIES	WHAT THER ARE TRYING TO ACHIEVE	HOW THEY DID IT	PROBLEMS ENCOUNTERED
01	<ul style="list-style-type: none"><li>- Age: 24 years</li><li>- Height: 185 cm</li><li>- Weight: 83 KG</li><li>- Physique: Bulky</li><li>- Strength: High</li></ul>	<ul style="list-style-type: none"><li>- He tried to climb and hang on the metal rod in fig. (a)</li><li>- He tried to move around the metal rod and rotate around it hanged upside down as in fig. (b)</li></ul>	<ul style="list-style-type: none"><li>- He managed to get his legs upside down hanged on the rod</li><li>- He just kept one part of body hanged before moving to the other rod</li></ul>	<ul style="list-style-type: none"><li>- Get his legs hanged from the other side of his hands</li><li>- His shoes were slippery when trying to make it rest on the metal rod</li></ul>



Figure (c)

PARTICIPANTS' ID	CHARACTERISTICS & CAPABILITIES	WHAT THER ARE TRYING TO ACHIEVE	HOW THEY DID IT	PROBLEMS ENCOUNTERED
03	<ul style="list-style-type: none"><li>- Age: 24 years</li><li>- Height: 182 cm</li><li>- Weight: 81 KG</li><li>- Physique: Moderate</li><li>- Strength: High</li></ul>	<ul style="list-style-type: none"><li>- He tried to keep balanced on the stretched rod, he did the same thing also on the cylindrical rod as in fig (c)</li></ul>	<ul style="list-style-type: none"><li>- He just stood on it and started to walk from one end to the other one</li></ul>	<ul style="list-style-type: none"><li>- He encountered no problem, he thought it was easy, he stated that the hardest rod to move on is the wooden cylindrical rod in fig (a)</li></ul>

## OBSERVATION NUMBER 3



Figure (d)

PARTICIPANTS' ID	CHARACTERISTICS & CAPABILITIES	WHAT THER ARE TRYING TO ACHIEVE	HOW THEY DID IT	PROBLEMS ENCOUNTERED
- 02 - 03	<ul style="list-style-type: none"> <li>- Age: 23 years</li> <li>- Height: 179 cm</li> <li>- Weight: 77 KG</li> <li>- Physique: Moderate</li> <li>- Strength: Moderate</li> <li>- Age: 24 years</li> <li>- Height: 185 cm</li> <li>- Weight: 83 KG</li> <li>- Physique: Bulky</li> <li>- Strength: High</li> </ul>	<ul style="list-style-type: none"> <li>- They tried to make a contest on the wooden cylindrical rod in fig. (d)</li> <li>- The winner will be the one who stays on the rod longer than the other, so they tried to make each other fall.</li> </ul>	<ul style="list-style-type: none"> <li>- Each one stood on one of the two ends of the rod</li> <li>- Each one tried to make the other one fall first.</li> </ul>	<ul style="list-style-type: none"> <li>- It was hard to stand on a cylindrical rod compared to other rectangular rods.</li> </ul>



Figure (e)

PARTICIPANTS' ID	CHARACTERISTICS & CAPABILITIES	WHAT THER ARE TRYING TO ACHIEVE	HOW THEY DID IT	PROBLEMS ENCOUNTERED
- 04	<ul style="list-style-type: none"><li>- Age: 22 years</li><li>- Height: 176 cm</li><li>- Weight: 74 KG</li><li>- Physique: Slim</li><li>- Strength: Low</li></ul>	<ul style="list-style-type: none"><li>- He tried to keep balanced on the parallel two metal rods and move towards the other end as in fig. (e)</li></ul>	<ul style="list-style-type: none"><li>- He tried to hold onto both rods by using both hands and started to move step by step to the other end.</li></ul>	<ul style="list-style-type: none"><li>- It needs very strong nerves, also he complained about the cold weather, and his hand hurt because of that.</li></ul>



Figure (a)

Figure (b)

PARTICIPANTS' ID	CHARACTERISTICS & CAPABILITIES	WHAT THEY ARE TRYING TO ACHIEVE	HOW THEY DID IT	PROBLEMS ENCOUNTERED
02	<ul style="list-style-type: none"> <li>- Age: 23 years</li> <li>- Height: 179 cm</li> <li>- Weight: 77 KG</li> <li>- Physique: Moderate</li> <li>- Strength: Moderate</li> </ul>	<ul style="list-style-type: none"> <li>- He tried to stand on the twisted plate, then jump from one plate to another as in fig. (a)</li> </ul>	<ul style="list-style-type: none"> <li>- He failed to jump directly from one plate to another, he needs one more step in between to reach the other plate as in fig (b)</li> </ul>	<ul style="list-style-type: none"> <li>- The distance is long between the two plates, so he needed a step in between to reach the other plate.</li> </ul>

## TASK 2 INTERVIEW QUESTIONS

7.5

- Are you a student of this University?
  - If not, what do you do at the University?
  - What do you study?
  - How long did you study (or worked) at this University?
- How old are you?
- Do you follow projects and news about the University?
- Do you know the fitness path?
  - How do you hear about it?
  - Did you ever see any kind of promotion for this path?
  - Do you use them and how often
    - If not, why not?
    - Do use them as your main activity?
    - What parts of this path do you use especially?
  - What are the goals you try to achieve, while using it?
- Could you imagine to use an app, to support you, while using this path?
  - If no, why not?
  - What could that look like and for which activity would you use it?
- Do you think an App to navigate through the path and give you information would be helpful?
  - If no, why not?

-0,5, question 6 and 7 focus too much on the app itself.

7. Would an App be useful that give you goals every day to achieve, while you decide how active you want to be?
  1. If no, why not?
  2. If yes, what could that look like and would you use it regularly?
8. Would you use any of this Apps if there exists on?
  1. If no, why not?
9. Do you do other Sport at the University?
  1. Which one and how often do you do Sport?
  2. How difficult was it to Subscribe for this?
  3. Would you say there are much more students that interests for university sport, but there are to less space?
10. Would you have done or will do sport on this path if you had knew this path before
  1. If no, why not?
11. Do you think this path should get a better Promotion?
  1. How could this promotion look like?
12. Do you think this path is useful at all?
  1. If no, why not?
13. What kind of Problem do you expect is the biggest with sports at this path?
14. Do you think motivation is a problem that an app should definitely try to help with?
  1. How do think that could happen?

### TASK 3 CONDUCT INTERVIEWS

14.5

- Interviews are conducted by asking people for permission to collect some data for 15 minutes as a part of a project in Human Computer Interaction Course.
- Answers of the Interviews are based on the questions in Task "2", and have the same numbers of the questions respectively.
- Next you can find the anonymous participants on which the interviews are conducted: -

ID	ANONYMOUS NAME	CONTEXT OBSERVED	CONSENT
01	Loan	Individual	Accepted
02 – 03	Chiara & Marghe	Group	Accepted
04	Steven	Individual	Accepted
05	Ashik	Individual	Accepted
06	Nobin	Individual	Accepted

1. Yes, I study masters of biotechnology, I have been studying for 2 semesters now.
2. I'm 24 years old.
3. Yes, but not usually, I just check the webmail and the posters hanged on the walls.
4. Yes, I know it, but I didn't see any kind of promotion for it, and I never use them, because I usually don't have enough time, also I think it will me make feel more tired.
5. Yes, why not, it can be an app which reminds you of different exercises you can make using the fitness trail, I would use it to understand how this equipment in the fitness trail can be used.
6. Yes, it would help absolutely.
7. Yes, I think so to some extent. The app can show the different exercises available to make on the main screen, and by clicking on any one of them, it will show more details and visual steps for it. I admit, I won't use it regularly, because it will depend on my schedule.
8. Yes, maybe I will use the one which can give me a goal every day, if I have free time of course.
9. No, I have never done other sports at the University, I think there are a lot of space for sport, but most university students don't normally do sports.
10. I have already known about this fitness trail, but I just don't get used to it.
11. Yes sure, I don't know, but maybe I think the app you are going to make may help with promoting it.
12. Yes, it can help you keep healthy, and make you active.
13. There is a probability that you can get hurt, especially if it's your first time using it.
14. Yes, we all need motivation, and an app can help of course with that, by collecting points each time you complete your daily goal, and then rewarding the one with the most points each month maybe.



1. Yes, we are both studying Translation. We are just here for only 1 semester as Erasmus students.
2. We both are 21 years old.
3. Yes, we always check the posters on the wall, and information for events especially from the ZIS Facebook page.
4. No, we never heard about that.
5. Yes, it's probable, we would use it to know more about it, and how to do different exercises.
6. Yes, of course, otherwise, we won't be able to use it.
7. Yes, it will be a kind of motivation, it can remind me of goals every day and tell me which exercises to do on which day, said Marghe. But Chiara said that "I won't use it regularly, it will be tough work".
8. We will try using the app at least.
9. Yes, we go to the GYM, It was easy to subscribe. No, we think there are always places for all students to practice any sport.
10. Sure, we would have tried at least once.
11. Yes, we didn't know about it. Promotion could be like making the fitness trail more prominent by adding signs for directions towards it, and make it obvious.
12. Yes, any kind of exercise is very useful of course.
13. The time, there isn't enough time to do sports because of weekly assignments and exams.
14. Yes, motivation is really important, we don't know but maybe by some propaganda for people who usually exercise, so that other people get motivated for that.

1. Yes
  - 1-
  2. Mathematics
  3. 7<sup>th</sup> Semester
2. 22
3. No
4. Yes
  1. moved though this path
  2. No
  3. No
    1. I hate sport
    2. No
    3. None
  4. None
5. No
  1. I don't want to use it
  2. Never
6. No
  1. I don't want to use it
7. No
  1. I don't want to use it
8. No
  1. I don't want to use it
9. No
  1. -
  2. -
  3. No
10. No
  1. I hate sport
11. No, everybody can see this path while moving over the campus
12. Yes
13. Like the most things at the university this will just rust and will be destroyed
14. No

1. Yes
- 1.1 NA
- 1.2 Computer and Communication Technology
- 1.3 Two Years
2. 26
3. Yes
4. Yes
- 4.1 Facebook
- 4.2 No
- 4.3 No
- 4.3.1 Don't have enough time
- 4.3.2 No
- 4.3.1 NA
5. Yes
- 5.1 NA
- 5.2 Don't know, never experience this kind of things
6. Yes
- 6.1 NA
7. Yes
- 7.1 NA
- 7.2 More informative, I don't know that I would use or not
8. No
- 8.1 I have other works to do
9. No
- 9.1 NA
- 9.2 NA
- 9.3 Yes
10. Yes
- 10.1 NA
11. Yes
- 11.1 Social media, University off line notice board etc.
12. Yes
- 12.1 NA
13. Addiction and that would create "Time Wasting"
14. No
- 14.1 Don't know

1. Yes
  - 1.1 NA
  - 1.2 International Bioinformatics
  - 1.3 3th Semester (Currently)
2. 25
3. Yes, Sometimes
4. NO
  - 4.1 NA
  - 4.2 NA
  - 4.3 NA
    - 4.3.1 NA
    - 4.3.2 NA
    - 4.3.1 NA
5. Yes
  - 5.1 NA
  - 5.2 Hard to say, may be for all light exercise.
6. Yes
  - 6.1 NA
7. Yes
  - 7.1 NA
  - 7.2 More informative and There should be an option for feedback, and Yes, I would use regularly.
8. No
  - 8.1 I don't have any idea of this types of things
9. Yes
  - 9.1 Badminton
  - 9.2 Not so difficult
  - 9.3 Yes, More space is needed
10. Yes
  - 10.1 NA
11. Yes
  - 11.1 Facebook, Twitter etc.
12. Yes
  - 12.1 NA
13. As Space is not enough, Things would be crowded.
14. No
  - 14.1 No Idea

## KEY FINDINGS

1. In Interview Number "2", During the Answer of Question Number "14" by Marghe and Chiara. I think the idea of making propaganda for people who usually exercise can motivate other people of course. The app can be used towards that by adding a picture of them regularly on the home page.
2. In Interview Number "1", During the Answer of Question Number "14" by Loan, I find the idea of collecting points each time you achieve your daily goal can help people stay committed and motivated to doing exercises. This can be tracked in the App for each user.
3. In Interview Number "3", During the Answer of Question Number "11" by Marghe and Chiara. I think the idea of adding signs along the roads till the fitness trail is very good, this can help people who never see it before to recognize it and be curious to try it.
4. In all Interviews, During the Answer of Question Number "3", all participants said that they follow projects and news about university except for only one-person Steven. So, the majority can get to know also about the new app when it's publicized on the news and projects of the University.
5. In Interview Number "5" & Number "6", During the Answer of Question Number "11", the two participants Ashik and Nobin agreed that using Social Media is a very good way of promoting the fitness trail. So, we must take advantage of Social Media like Facebook and Twitter during the stage of promotion.

missing findings regarding doing sport activities, what could be the target group? -3.5P, yo focus here much on how to promote the app and context differences between individual vs group was not stated ( i see you interviewed a group, but did you saw differences?)

## 6 TASK 4 RESEARCH EXISTING APPROACHES

a)

1. Bodywork (Google AppStore)
2. Workouts Zuhause

b)

The First App try to find out what you want to archive and has an option of different training plans.

The app show you videos and want that you copy this tasks. So the goal of this app is to animate you to do sport tasks and try to teach you with videos how you should do this.

The second app is a little different, it let you choose out of different categories of training and asks you about your fitness level. After this is just tells you what task you should perform and how often. So the goal of this is definitely to help with a trainings plan.

They also try to archive some kind of routine at which time of the day the user should do sport, while remind them at the same time every day.

c)

This are problems that are often saw, first the motivation and second the right act of the moves. These two main problems are, also the problems you saw at the observations.

These results because of the knowledge of the persons is not good enough to do the move correctly and the motivation of them to archive their goals is maybe not high or long enough.

I think that's related to the motivation aspect and should be solved in an app, but couldn't be observed at task 1.

## 10P TASK 5 IDENTIFY STAKEHOLDERS

3 a)

Customers  
University Employers who need to promote it  
Maintenance employee  
Investors

-1P ( who are the stakeholders in detail here?)

7 b) -1P ( you could have give them names)

1. Customer
2. Promoter

Person description 1:

Background:

- 21, male
- Sport student
- Does sport regularly

Motivations:

- Very competitive
- Keeping up with peers
- Keep using smartphone all the time

Frustrations:

- Empty phone battery
- Loosing at a competition
- Rain that prohibit to easy do sport outside

Person description 2:

Background:

- 30, Female
- Employee at university
- Married

Motivations:

- Keeping up with other couples
- Mother of children
- Try to archive more money with good work

Frustrations:

- Tech problems at work
- No breaks at work
- Poorly time for Family


## 8 TASK 6 CREATE SCENARIOS

a) Scenarios

Person 1: Customer, Student, Male

Dave study sport at the Saarland University and live on the campus. He study sport at the first semester and moved to the campus a short time ago. He worried because he, think that he isn't in good shape to start a sport study now.

So he try to do sport nearly every day for some hours, so he decided to get member of a university sport activity. He is somewhere in the mid of the semester and saw, at the university webpage, that all activities are crowded.



He asks himself where to do sports elsewhere and started searching for further information. After a while he saw, again at the university webpage, that there exists a path around the university with some kind of sport tools and decide to look upon this.

As he finished this he was happy to found a cheap way to do sports right infront of his home and decide that he, does sport at this path as long as the sport activities are full.


Person 2: Promoter, Employee at the University, Female

Amanda is a employee at the university and started working there about 8 years ago. At the first view year of her job she just get rather boring stuff to do, including sorting documents and search for them.

But then her workspace changed and she was, together with a team, responsible for promotion of different projects at the university. She always tell her family what project she is working at the moment and try to discuss what's the best way to promote it or if the project is even useful at all.

She is married and have two kids, so there are always things to do. At the last view months her job costs a lot of time, but at least make fun and isn't that boring anymore.

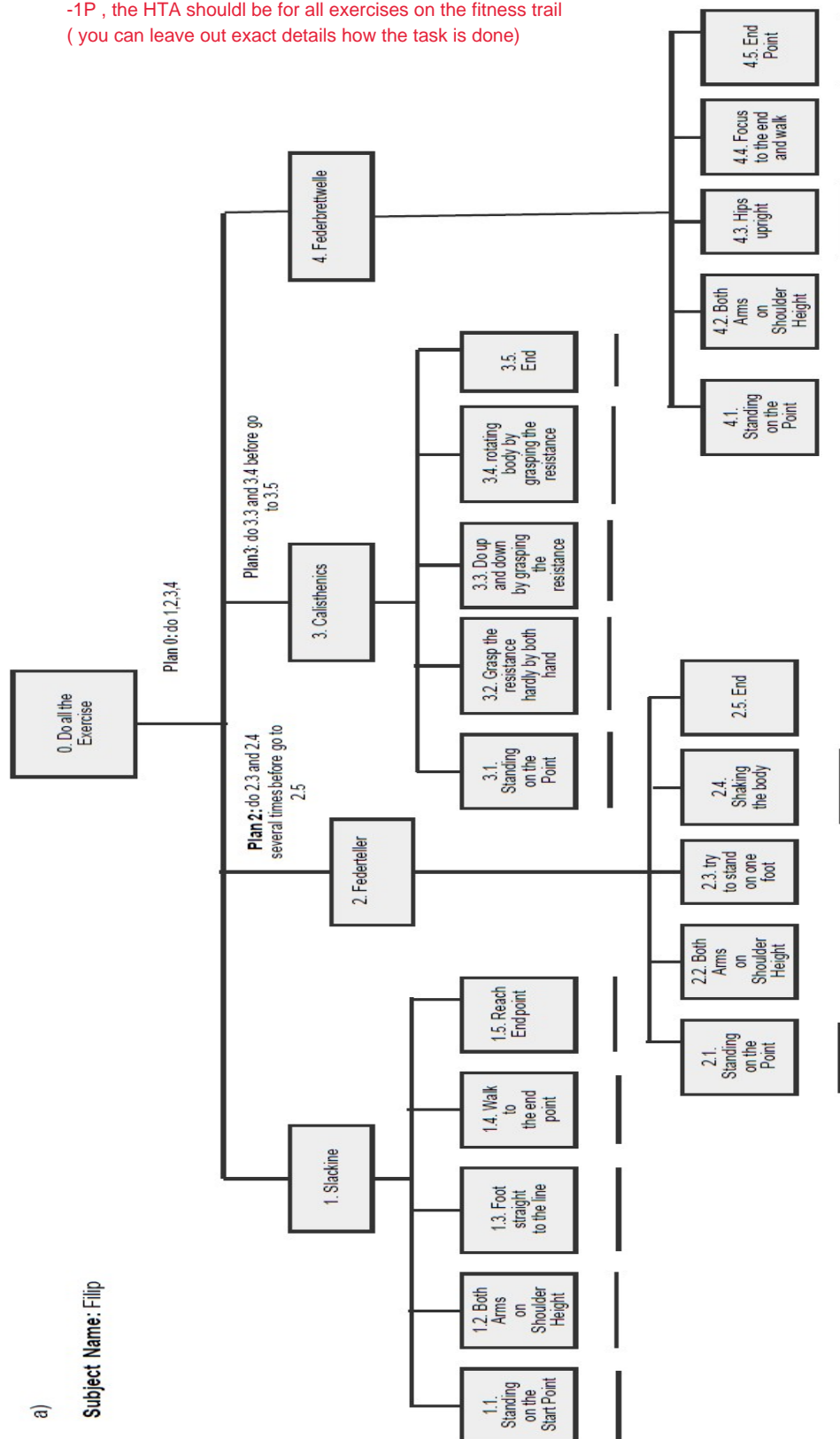
Lately the new project is to promote a fitness path and animate student to do sport at this path especially to relieve the sport activities at the university, but also and that's what they think is more important, to help the university to get more credit with doing such projects for the student and show that they care for the students.



## Task 7: Perform hierarchical task analysis( HTA)

a)

Subject Name: Filip



\*\*\*\* To get a clear picture, you will find the PNG file in the ZIP file. \*\*\*\*



a)

Use Case (Textual Description)

Use case 1: Do Slackline

Primary actors: Human Being

Goal: do exercise on Slackline

Scenario:

1. The subject starts the exercise by standing on the start point.
2. The subject opens both arms to shoulder height to make a balance.
3. The subject analyzes the destination point.
4. The subject makes his/her foot straight on the line.
5. The subject walks to the destination line by keeping the balance.
6. The subject touches the destination point.

Use case 2: Do Federteller

Primary actors: Human Being

Goal: do exercise on Federteller

Scenario:

1. The subject starts the exercise by standing on the start point.
2. The subject opens both arms to shoulder height to make a balance.
3. The subject stands on one foot by keeping the balance.
4. The subject moves the body.
5. The subject jumps on that point.
6. The subject ends the exercise.

Use case 3: Do Calisthenics

Primary actors: Human Being

Goal: do exercise on Calisthenics

Scenario:

1. The subject starts the exercise by standing on the start point.
2. The subject grasps the resistance by both hands.
3. The subject does up and down by grasping the resistance.
4. The subject rotates the body by grasping the resistance.
5. The subject grasps the resistance by both feet.
6. The subject rotates the body again.
7. The subject ends the exercise.

Use case 4: Do Federbrettwelle

Primary actors: Human Being

Goal: do exercise on Federbrettwelle

Scenario:

1. The subject starts the exercise by standing on the start point.
2. The subject opens both arms to shoulder height to make a balance.
3. The subject makes his/her hips upright.
4. The subject focuses to the destination point.
5. The subjects walk through the line.
6. The subject touches the destination point.

a)

Functional:

- The system will motivate user to use fitness trail.
- The system will help user to do various exercise by showing the right way.

Data:

- Allow user to see the descriptive manual of an exercise.
- Allow user to see the feedback of a particular exercise.
- Allow user to see the different location of fitness trail.

Environment:

- Allow user in noisy environment. (Physical)
- Allow user to see the experience of other people. (Social)
- Allow user to get in touch with the fitness group. (Organizational)
- Must be accessible via an Android or IOS device. (Technical)

Characteristics:

- Help forgetful user to remembering a particular exercise rule.

b)

must-have

Functional:

- The system will motivate user to use fitness trail.
- The system will help user to do various exercise by showing the right way.

Data:

- Allow user to see the descriptive manual of an exercise.

Environment:

- Must be accessible via an Android or IOS device. (Technical)

should-have

Data:

- Allow user to see the feedback of a particular exercise.

Environment:

- Allow user in noisy environment. (Physical)
- Allow user to see the experience of other people. (Social)

nice-to-have

Data:

- Allow user to see the different location of fitness trail. ( i would rather say this is a must have -0.5)

Environment:

- Allow user to get in touch with the fitness group. (Organizational)

Characteristics:

- Help forgetful user to remembering a particular exercise rule.