Project 3 - Evaluation (100 points)

This project task is the last of three project tasks that together take you through one iteration of the complete design process.

As a reminder, the overall goal is to design 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.

For instance, the app should support (but is not limited to) the following areas:

- Helping users to navigate through the fitness trail and give recommendations which exercises to do next at which site.
- Helping users by presenting the correct way of doing exercises in different sites.
- Allowing users to track their physical activity and progress.
- Sharing user's progress with others.

ATTENTION:

Unlike previous exercises, this project is due on Sunday. In addition to the answer sheets you have to prepare a *mandatory* presentation for this exercise.

Please keep all of your answers short and on point, and write them in concise bullet points. Please read the instructions for submission at the end of this exercises.

If you have questions regarding the tasks, please ask your tutor.

Groups of 2: For groups that have only 2 members, for some tasks a reduced amount of work is indicated with *Groups of 2:* as an identifier. This does not apply for groups that have three members.

Tasks:

In this project task your goal is to evaluate your high fidelity (hi-fi) prototype. To this end, you will design and run a small user study, in which you evaluate qualitatively the usability and user experience of your prototype and identify opportunities for improvements that would be realised in a next iteration of the user-centered design cycle.

In your study, 4 participants shall perform a given task with your prototype. As methods for data gathering, you should use on-site observations that are followed by semi-structured interviews, and a questionnaire. Note that a strong solution of this assignment does not necessarily confirm that many aspects of your prototype work well. It will be equally (or even more) important to identify concrete problems with the current implementation and identify concrete opportunities and ways of how the prototype could be improved in the next iteration of the design cycle.

1. Procedure of your study (30 points)

   (a) In this task, your goal is to find the key questions that is important to be answered with your study. Find four questions, and try to find the answers with your study. Here is some example questions:
   Groups of 2: find 3 questions

   - How easy is the interface to use? Do users make errors? If yes, which ones? What problems occurred? Why?
   - How well does the interface guide users through the fitness trail?

- How well does the interface help users by presenting the correct way of doing exercises?
- Is there any additional functionality the users would like to be included?
- What (important) concrete suggestions for improvement did the participants make?

(b) Prepare a study task that will be performed by the participants and develop instructions for the task. Your task should be a realistic sequence of actions as they would occur in practice when a user is planning to do the exercise.

- Make use of the functions you have implemented in the last project phase (e.g., navigating through the fitness-trail, guiding to do the exercises, and sharing progress)
- Include at least 5 actions, of which at least 3 are unique.
- Make sure the actions are possible in your prototype.
- The instructions should be formulated to be read to the participants to ensure that all participants get the same instructions.
- Here is a short example of an action sequence (note, these are not the complete instructions):
  - Select one exercise
  - Get instruction
  - Do exercise
  - Mark it as done
  - Share your progress with your friend

(c) Observation method:

- Define who will be participants
- What site will be used for observation
- How observations will be recorded

(d) Prepare a questionnaire to be administered after the observation.

- Write your own questionnaire to collect Information about the participants (see slide set 11, slide 82)
- Use the NASA TLX questionnaire for participant feedback. It is available as a desktop app (`http://www.playgraph.com/apps.updates/NASA-TLX.air`) and as an online tool (`http://www.nasatlx.com/`). We recommend the desktop app, since it provides the option to leave out the 15 pairwise tests. Make sure you try it out yourself once, so you know how to set it up and how to collect the data.

(e) Interviews

- You need to prepare questions for a semi-structured interview
- Each interview takes 10-15 min per participant (ideally no group interview).
- Every group member should conduct at least one interview.

(f) Prepare a consent form. Use the template provided on Moodle platform and fill in your details.

(g) Combine all of the above to a complete procedure description. Hand in the complete procedure description (including instructions).

We strongly recommend to get feedback from tutors on your study design! Please send your answers to Question 1 to your tutor until one day before your tutorial session via email. Then you will get feedback on your study design from your tutor in the tutorial sessions between January, 21^{th} - 24^{th}. This helps you ensure your study design is sound and will help you waste time in Questions 2 and 3.

2. Run a pilot study (10 points)

- Make sure you run the study exactly following your written procedure.

- Make note of difficulties and problems during the pilot study.
- Adapt the study procedure accordingly.
- Briefly explain the changes you have made.
- A good study takes roughly 1 hour per participant.

3. Conduct the study (30 Points)

   (a) Recruit 4 typical paticipants. You can ask your friends or colleagues but exclude members of your group.
   Groups of 2: recruit 3 typical users

   (b) Conduct the study according to your procedure from above.

   (c) Hand in your collected **and anonymized** dataset.

4. Data analysis (5 Points)

   (a) Evaluate the usability of your prototype qualitatively based on your observation, interview, and the results of questionnaire collected from participants. (Base your analysis on the questions you have identified in 1.a)

   (b) Briefly summarize your findings for each question. Prioritize important findings.

5. Final presentation on project challenges (25 points) **This is mandatory!**

   (a) Identify 3 main challenges you have encountered throughout the entire projects cycle (Projects 1-3) which you found to be particularly difficult, a unique aspect in your project, or to yield a valuable lesson learned. Briefly describe each challenge.
   Groups of 2: 2 challenges

   (b) For every challenge, briefly describe how you addressed it, e.g. what solution you came up with and the outcome, e.g. what did you learn or take away.

   (c) Prepare a slide set to present your challenges, solutions, and outcomes in your tutorial.

   - You have 10 minutes sharp for presentation, following 5 minutes for discussion. Therefore the maximum number of slides is better to be around 15.
     Groups of 2: around 10 slides with a 7 minutes time limit

   (d) Present your slide set in the tutorial.

   - Every member from the group must present one challenge.
   - You must use the presentation that was submitted to Moodle. You will not be allowed to change the presentation after submission.
   - Practice the entire presentation at least once. This is important to help you to stay on time. You will lose points if we have to cut you off after your time is up.
   - The presentation schedule is given below. Feel free to direct any questions about the project phase to your tutor.
   - The presentation slots start **on the hour**. Some slots exceeds two hours, if you have problem with that, please contact your tutors to set your presentation in the first two hours.
   - If for any acceptable reason, one of the group members can not attend the presentation, she/he should inform the tutors in advance.

Tutorial	Groups	Presentation Date	Location (room)
Monday, 12-14	M00, M01, M02, M03, M04, M05, M06, M07, M08, M09	04.02.2019 12:00-14:30	E1.7 0.08
Tuesday, 14-16	T01, T02, T03, T05, T06, T07, T08, T09	05.02.2019 14:00-16:00	E1.7 0.08
Wednesday, 10-12	W00, W01, W02, W03, W04, W05, W07, W08, W09	06.02.2019 10:00-12:15	E1.7 0.08
Thursdays, 10-12	T10, T11, T12, T13, T14, T15, T16, T17, T18, T19	07.02.2019 10:00-12:30	E1.7 0.08
Thursdays, 14-16	T20, T21, T22, T23, T24, T25, T26, T27, T29	07.02.2019 14:00-16:15	E1.7 0.08

Instructions for submissions:

- To give you more time to do this assignment, this project is due on Sunday (unlike previous exercises).
- You have this option to send your questionnaire and other relevant information regarding the question 1 to your tutors until one day before your tutorial via email. Then you get feedback from tutors on tutorial sessions between January, 21^{th} - 24^{th} before you start to conduct the study. **(Optional)**
- You can upload your final presentation slides and documents related to this assignment multiple times until February, 3^{th} 2019 - 12am. The most recent version will count. You cannot change your answer after February, 3^{th} 2019 - 12am.
- If one of your group members are not contributing to the exercises, you must inform your tutor.
- Please put your answer sheet, presentation slides, and all the other relevant documents in one archive file (zip) and name your submissions according to the following scheme:

  HCI_exercise_XX_GGG.zip where XX = exercise number (e.g. 03) and GGG = group number (e.g. M01).

Hand-in until February, 3^{th} 2019 - 12am as PDF via Moodle (https://hci-lecture.cs.uni-saarland.de)