INFO3315

**Human-Computer Interaction**

**Project Phase 4**

R16C – Group5

Group Members (SID):

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**1. Procedure of your Experiment**

(a) Prepare an experimental 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 planing the commute.

- Make use of the functions you have implemented in the last project phase. (e.g. Configuring trip origin and destination, configuring timing information, Managing frequent routes, etc.)

- Include at least 5 actions (enter destination, enter time, etc.) with at least 3 of them are

unique.

- Make sure the actions are possible in both your prototype and Opal Travel.

- The instructions should be formulated and written so that they can 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):

– Add the starting bus stop.

– Add the destination.

– Put start time.

– Add this configuration to frequently used route.

– Search for the bus information.

– See bus information for the same route 30 minutes later from the start time. For modes

with service frequencies longer than 30 minutes, choose a suitable time instead.

(b) Prepare a Participant Consent Form (PCF) and Participant Information Statement (PIS). Use

the templates (General) provided on the Project Phase 4 assignment page on Canvas. You will

not be recording audio, video or photos, so remove all unnecessary parts from the templates.

(c) Prepare a questionnaire.

- Write your own questionnaire to collect Information about the participants (see slides 69

to 73 in “Evaluation 2 of 2”)

- Use the NASA TLX questionnaire for participant feedback. It is available as an app from

https://humansystems.arc.nasa.gov/groups/TLX/tlxapp.php.

(d) Prepare the trials

- Prepare within-subject trials targeting 4 (3 if your team has less than 4 members) participants.

- Each participant should do the task with both your prototype and the Opal Travel app

- Record time taken and any errors for each participant

- Be sure to account for order effects, carefully consider counter balancing as necessary at

each step. (See slides 60 to 66 in “Evaluation 2 of 2”)

- Include time to demonstrate the applications or letting participants practice

(e) Combine all of the above and add missing details (e.g. breaks, arriving, welcoming) to a

complete procedure description. Hand in the complete procedure description (including instructions).

(f) Run a pilot experiment with at least one participant (Can be a group member).

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

- Make note of difficulties and problems during the pilot study.

- Adapt the experiment procedure accordingly.

- Briefly explain the changes you have made.

**2. Conduct the experiment**

(a) Select 4 (or 3 as for above 1.d) typical users. Users can be friends or colleagues but exclude

members of your group.

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

(c) Hand in your collected and anonymised dataset (use Excel or CSV format).

**3. Data analysis**

(a) Calculate the mean and standard deviation for both time and errors. Do this for you’re your own app and for Opal Travel (Hint: You can calculate this using Excel).

(b) Calculate the mean and standard deviation for participant age and NASA TLX scores.

(c) Briefly summarise the results above and your findings.

(d) Note: typically, one would conduct further statistical analysis to see whether there is a significant difference between both conditions in terms of time required and errors produced. This would however require a larger sample size, i.e. more participants, which is out of scope for this exercise. If you are interested, feel free to read up on statistical testing, e.g. the t-test.

**4. Field Study**

(a) What additional findings could you get in a field study of your app that would not be produced in the controlled experiment?

**5. In addition to the answer sheets you have to prepare a slide set, which you will present during the tutorial. The presentation should focus on your designs and how they were refined and relate to the requirements you identified. (Presentation will be graded and count into 10% of the final grade of this project phase).**

- Pay attention to Task 1.e, 1.f, 3.c and 4.a when you make the presentation.

- The number of slides should be approximately 10, and you should be able to finish the slides in 10 minutes sharp. You will not be allowed to run over, except in the event of technical issues.

- All members from the group should take part in the presentation.

- You must use the presentation that was submitted to Canvas. You will not be allowed to

change the presentation after submission.