

Group Project III:

Driving Behavioural Change with Digital Tools

Student project teams develop a website to encourage individual behavioural change. A research question will be defined together with an external Challenge Partner. By drawing on focus groups and desk research, the projects will develop a strategy on how to communicate their message most effectively. Moreover, with simulated data, the projects will run an experiment. The insights generated by these methods will inform UX design choices and the website's eventual form. Finally, student project groups present their website to the Challenge Partners and the CSSci community.

How to work on the project...

...as a group

- Interact professionally with your core lecturer, project partner and stakeholders that you may be in contact with as well as study participants.
- Specify a research agenda that is of appropriate scope for the project.
- Lay out a timeline including important milestones and regularly check whether you are on track.
- Be aware of your implicit assumptions and biases regarding the project challenge.
- Incorporate feedback throughout the project, especially from the nine Weekly Goals.
- Reflect on the weaknesses of your approach and adjust as necessary.

...individually within your group

- Behave professionally towards group colleagues.
- Fulfil the group expectations laid out in the Team Charter.

Deadlines

Weekly Goal	What?	Progress Check Deadline (at 14:00, unless specified otherwise)	Weekly Goal Deadline (at 17:00, unless specified otherwise)
Weekly Goal 1	<i>Identify Your Target Audience and Research Question</i>	13/02/2025	14/02/2025
Weekly Goal 2	<i>Focus Groups: Recruitment Plan</i>	20/02/2025	21/02/2025
Weekly Goal 3	<i>Design Iteration I</i>	27/02/2025	28/02/2025
Weekly Goal 4	<i>Focus Groups: Execute</i>	-	7/03/2025
Weekly Goal 5	<i>Focus Groups: Report on Findings</i>	20/03/2025	21/03/2025
Weekly Goal 6	<i>Design Iteration II + Memo (Dedicated feedback meeting with partners to discuss the Memo)</i>	27/03/2025	28/03/2025
Weekly Goal 7	<i>Experiment: Vignette Design</i>	03/04/2025	04/04/2025
Weekly Goal 8	<i>Experiment: Trial and Reflection (qualitative)</i>	15/04/2025 (17:00)	17/04/2025
Weekly Goal 9	<i>Experiment: Data Analysis and Report</i>	24/04/2025	25/04/2025
Weekly Goal 10	<i>Design Iteration III</i>	15/05/2025	16/05/2025
Weekly Goal 11	<i>Finalizing and Hosting the Website</i>	22/05/2025	23/05/2025
Final Deliverable	<i>Comprehensive Project Report</i>	-	28/05/2025
Project Closing Event	<i>Attendance is mandatory for all students. Project Partners are expected.</i>	-	3/06/2025

Weekly Goal 1: Identify Your Target Audience and RQ

Deliverable

Assessment of how behaviour change is possible for the applicable stakeholder/s (i.e., those whose behaviour the intervention is targeting). Formulate a tentative (preliminary) research question. This research question can be further refined as your Group Project is taking shape.

Assessment Criteria

- Stakeholder map:
 - Shows the most relevant stakeholders in the field in relation to each other and to the project
 - Indicates the stakeholder/s whose behaviour the intervention is targeting;
- Concise statement of the decision rule
- Specifies how theories discussed by the faculty speakers (e.g. on behavioural change) informed your choices
- Brief descriptions of stakeholder/s whose behaviour the intervention is targeting
- Concise explanation of how behaviour change is possible for the applicable stakeholder/s (i.e., those whose behaviour the intervention is targeting)
 - Identifies characteristics of the stakeholder that may be relevant when developing a behaviour change tool
 - Links those characteristics to specific elements of behaviour change theory/s
 - Appropriate use of ideas presented in lectures, workshops, and/or readings
- Specify what you want to find out (your tentative research question)
- Word count: 800 (with a 10% margin)

Weekly Goal 2: Focus Groups – Recruitment Plan

Deliverable

A short description of the group(s) that you want to recruit (provide basic characteristics and possible variation among participants, e.g. in terms of age or otherwise) and a short recruitment strategy.

Assessment Criteria

- Provides concrete details on who will be recruited, and which strategy helps to achieve this goal.

Weekly Goal 3: Design Iteration I

Deliverable

A proposal for the website, composed of:

- (a) A brief description of the proposed website including its target audience, purpose, and content
- (b) An explanation of how the desired behaviour change can be achieved by the proposed website including links to the theories and concepts introduced in the course
- (c) A prototype of the proposed website as low-fidelity wireframes consisting of multiple “pages”
- (d) Diagram(s) of the anticipated user flow within the prototype
- (e) Description of key design choices aimed at enhancing the experience of your website users including justification for your choices based on the concepts introduced in the course

Assessment Criteria

- Suitability of the proposed website for its target audience considering their characteristics
- Specifies how theories discussed by the faculty speakers (e.g. on acceptance of digital tools and human-computer interactions) informed your choices
- Potential of the proposed website to serve its intended purpose considering its content and design elements
- Effectiveness of the low-fidelity wireframes in presenting the design plan
- Clarity and efficiency of the anticipated user flow for the users
- Effective integration of the theories and concepts introduced in the course

Weekly Goal 4: Focus Groups - Execute

This is the suggested deadline for the execution of focus groups. Discuss with your CL if you need a deadline extension for executing your focus groups. The deliverable described below needs to be submitted by the original weekly goal deadline regardless of the execution date.

Deliverable

A short description of the basic information (time, location, number participants, etc.) and a short reflection on problems that occurred or might occur while organizing and doing the focus groups.

Assessment Criteria

- Provides the basic information on the focus groups
 - Minimum number of participants: 5
- Reflects on (potential) problems, how these could (not) be addressed and their implications for the research
- Word count: 400 maximum

Note: No feedback will be given

Weekly Goal 5: Focus Groups - Report on Findings

Deliverable

A report reflecting on focus group participants' perspectives and the implications of these findings for the larger Group Project.

Assessment Criteria

- Identify (different) perspectives on the key themes in your Group Project among the participants of your focus groups
- Consider how these findings are relevant for and can inform your website design
- Specifies how theories discussed by the faculty speakers (e.g. on Citizen Science from the Community Empowerment Perspective) informed your choices
- Word count: 800 (with a 10% margin)

Weekly Goal 6: Design Iteration II + Memo

Deliverable

- (a) An improved version of the prototype as mid/high-fidelity wireframes
- (b) A written reflection on ethical considerations of your website design integrating the concepts introduced in the course (min 300 words)
- (c) A Memo for the project partners and CL
- (d) Date, time and location of the meeting agreed with the project partner to discuss the Memo

Assessment Criteria: mid/high-fidelity wireframes and ethical reflection

- Incorporation of the focus group findings and other available feedback into the website design
- Specifies how theories discussed by the faculty speakers (e.g. on Ethics in Research and Design) informed your choices
- Effectiveness of visual hierarchy and information architecture (i.e. navigation chain, information layout) concerning the purpose
- Implementation of visual communication and UX design principles, in line with the ethical considerations introduced in the course
- Utilization of appropriate tools for user interaction (e.g. buttons, links, input fields)

Assessment Criteria: Memo

- Describes the current state of the project, including preliminary answers to the research question, and (a link to) your prototype
- Demonstrates that you can communicate about your project to non-academic audiences
 - Identifies and communicates the most important aspects of the project and results to stakeholders
- Demonstrates that you can reflect on your Challenge Partners' stake in your project
- It is shared with the Project Partners and CL no later than 28 March, 2025, at 17:00

Weekly Goal 7: Experiment – Vignette Design

Deliverable

Design a survey experiment in which you draw on relevant theories on behavioural change using digital interventions. Formulate a research question (RQ) on how a particular experimental condition (a text, an image, or a combination of the two) within the survey experiment may impact participants' behaviour, construct hypotheses, design a vignette and concretely consider how to operationalize the concepts of interest (using survey questions).

You will run a small trial with your survey experiment (see Weekly Goal 8) and later (see Weekly Goal 9) receive a simulated dataset with which you test your hypotheses.

Assessment Criteria

- The survey experiment includes two experimental conditions, which are informed by theories on behavioural change
- The design of the survey experiment incorporates elements that are relevant to the target audience and partner. In this way, the design also shows originality compared to existing designs that can be found in the literature
- Clarity of RQ, hypotheses, and the operationalisation plan
- Consistency between the RQ, hypotheses, and the operationalisation plan
- Feasibility of the operationalisation plan, taking into consideration the experimental conditions and survey questions
- Specifies how the literature discussed by the faculty speakers (e.g. on Experiments) informed your choices
- Word count: 800 (with a 10% margin)

Weekly Goal 8: Experiment - Trial and Reflection

Deliverable

Run the survey experiment by a sample of approximately four people whose behaviour the intervention is targeting. Let the participants in the trial complete the survey experiment, ask them to read the questions aloud and directly share their experiences about the given material (a handout will be shared with more instructions on the Think Aloud method). These trial sessions are audio recorded with consent, transcribed and qualitatively analysed in Atlas.ti (in a way that is comparable to how you analyse a conventional interview transcript). Reflect on the outcomes and implications for the design of the website.

Assessment Criteria

- Conducting a trial survey experiment with approximately four people whose behaviour the intervention is targeting
- A clear understanding of the implications of the trial for the design of the website (including concrete design ideas)
- Specifies how the literature discussed by the faculty speakers (e.g. on Experiments) informed your choices

Weekly Goal 9: Experiment - Data Analysis and Report

Deliverable

Analyse the **simulated** dataset using the appropriate statistical tests in Python. Discuss your hypotheses in the light of the analysis, answer the main research question, and reflect on the implications for new research.

Assessment Criteria

- Selects appropriate tests and demonstrates adequate understanding of the relevant methodologies and statistical concepts
- Specifies how the literature discussed by the faculty speakers (e.g. on Experiments) informed your choices
- Clearly answers the research question and outlines concrete avenues for new research (e.g. using different sample sizes, different contexts, different measurements)

Weekly Goal 10: Design Iteration III

Deliverable

- (a) An improved version of the prototype as high-fidelity wireframes or as (partially) translated wireframes into HTML, CSS and (optional) Python code
- (b) Brief explanation of improvements and choices made in this version of the prototype

Assessment Criteria

- Incorporation of the trial experiment findings into the website design
- Incorporation of the partner inputs from the Memo meeting into the website design
- Appropriate tone set by the design of the website for its purpose and audience
- Specifies how theories discussed by the faculty speakers (e.g. on Self-Regulated Learning or Actor Network Theory) informed your choices

Weekly Goal 11: Finalizing and Hosting the Website

Deliverable

Final website package (zipped) including:

- (a) All the files (HTML, CSS, Python and data) used in generating the final website
- (b) the URL of the website hosted either in GitHub (for static web pages) or PythonAnywhere (for dynamic web applications)

Assessment Criteria

- Consistent translation of the wireframes into HTML, CSS, and (optional) Python code
- Database integration (if applicable to the project)
- Style aspects:
 - Incorporation of relevant UX design principles and ethical considerations introduced in the course
 - Responsive design for various devices

- Quality of the website code:
 - Functionality:
 - code generates the intended website page(s) accurately
 - links and interactive elements (e.g. input fields, forms, buttons) function accurately
 - Incorporation of the good coding principles covered in the first semester (e.g. avoiding code repetitions, adding clear comments)
- Clarity and reproducibility of the overall website package with good documentation
- Online accessibility of the website

Final Deliverable

Deliverable

Comprehensive Project Report (note that the appendices to the report are also part of the assessment)

Suggested Structure of the Comprehensive Project Report

Introduction: Sketch your challenge and its relevance.

Background:

- Reflect on target group, stakeholders and project partner
- Situate the problem raised in the project in the extant literature

Report on focus groups

- Describe the focus group setup (e.g., participants, RQ)
- Explain how focus group data contributed to the initial prototype design

Report on the survey experiment

- Elaborate on the methodology, RQ, hypotheses and setup of the survey experiment
- Summarise the results of the survey experiment
- Explain how the survey experiment informed your UX design choices, and how these, in turn, are expected to influence your target group's behaviour

Discussion

- Outline the key findings from your analysis and discuss...
 - ... them in light of theories on behaviour change and the diffusion of digital innovations
 - ... their implications for your project partner and (potentially) other stakeholders
- Assess the limitations of your project
- Provide recommendations for next steps

Appendices (refer to them in the main body)

- Updated stakeholder analysis
- Focus group: basic information and discussion prompts
- Images of key wireframe pages
- Materials related to the survey experiment

Assessment Criteria

- Active participation in the Project Closing Event

- Application of sound scientific methodology in focus groups, in alignment with the assessment criteria in Weekly Goals 2, 4, and 5
- Quality of the final website, in alignment with the assessment criteria in Weekly Goals 3, 6, 10, and 11
- Quality of the design of the survey experiment and the way in which it is analysed, in alignment with the assessment criteria in Weekly Goals 7-9
 - Soundness of the data preparation, analysis and interpretation
 - Quality and comments of the analysis code
 - Adequacy and quality of figures depicting the results
 - Selection of key findings
- Adequacy of the Memo to challenge partners, in alignment with the assessment criteria in Weekly Goal 6
- Concision of summary of the research results and discussion of their relevance
- Connection between reported findings and project goals and stakeholders, in alignment with the assessment criteria in Weekly Goal 1
- Link to appropriate and clearly represented social science theory
- Demonstrated ability to iterate and improve the design based on feedback
- Use of appropriate sources and their correct referencing
- Use of clear and concise academic language in the report
- Word count: 3,500 words maximum (excl. appendices)

Project Closing Event

The Project Closing Event takes place on 3 June, 14:00-17:00, at the REC campus and student attendance is mandatory. Project Partners are going to be invited to this event as well. During the event, students will present the milestones of their project and demonstrate their final products to CSSci staff and Project Partners.

Assessment Criteria

- Attendance at the Project Closing Event
- Students are able to give a clear, concise verbal explanation of the main points of the research, such as:
 - Explain the link between the digital product and the research question
 - Explain the reasons for research and digital design choices
 - Explain the link to relevant social science theories
- Effectively communicate with the target audience:
 - Uses evidence that is likely to appeal to the Project Partner
 - Uses an appropriate visual and spoken tone

Learning Objectives

Social Sciences and Humanities Expertise

The student is able to ...

- present theory on planned behaviour, persuasion models, and the innovation diffusion; and apply these to propose digital interventions
- provide an overview of individual-level interventions, classify these along various dimensions, know in general terms their advantages and disadvantages
- apply theories of motivation and (self-regulated) learning to develop interventions aiming at change of attitudes and behaviour and the promotion of critical thinking
- reproduce the ideas behind technology enhanced learning and apply these to propose digital interventions
- explain the ways in which interventions may shape individual and collective behaviour and yield empowerment as well as their biases and limits impacting the development and diffusion of such interventions

Digital Expertise

The student is able to ...

- explain the relevance of the components in the web development stack
- explain the difference between client-side and server-side applications
- apply the UX principles to prototype a better app
- use the principles of user design to create the wireframes of an app using an off-the-shelf tool
- apply basic web development principles to devise a web-based prototype
- apply fundamental techniques of data cleaning (for instance, finding inconsistencies, duplicates, and replacement using regular expressions)
- integrate a user-tracking system

Research Expertise

The student is able to ...

- match research questions to the research methods to answering them
- decide on the design of and execute research projects using focus groups / group interviews as a (qualitative) method
- decide on the design of and execute research projects using online experiments as a (quantitative) method
- analyse data from focus groups in a systematic way using qualitative methods
- analyse quantitative data using descriptive statistics
- assess and interpret the reliability of experimental designs using the adequate statistical methods
- compare groups in quantitative data using inferential statistics
- assess the influence of independent variables on dependent variables using inferential statistics
- critically reflect on the ethical, legal and social aspects of research designs involving human participants as well as of their underlying assumptions and biases

Change Making Expertise

The student is able to ...

- acknowledge and recount diverse stories based on stakeholders perspectives
- critically reflect on the strategies and the applicability of the presented interventions and tools
- develop and formulate academic-based solutions and problem-solving approaches
- present academic-based solutions and problem-solving approaches
- adapt a writing style that is appropriate to the purpose of the text
- structure a presentation by building a convincing storyline and use clear visualizations to enhance the story
- organize and structure a long-term project (project management skills)
- compare the strategies and the applicability of the presented interventions and tools

Version History:

Jan. 20, 2025: V1.0