

Assignment 1:

SmartGarden App: Design Concepts

Due: 5pm Fri, Sept. 15, 2017

Worth: 25%

This assignment will help you develop critical skills in interaction design:

- identifying user needs and analysing tasks;
- sketch-based generation of design alternatives;
- assessing the relative merits of design alternatives;
- written communication of interaction needs, user tasks and design rationale.

Background

REMIT 10 Inc. is an international gardening-supplies company. It is considering moving into the emerging market for integrated control/monitoring of 'smart-gardens' (including small hydroponic centres). They have contracted the famous interaction design consultancy YOUR TEAM NAME HERE to develop a design concept for the mobile app that will be the main resource for interaction with smart gardens. They are interested to learn what tasks users might want to complete through the app, and they wish to see some initial design concepts.

REMIT 10 have patented smart protocols that allow a wide range of garden sensors and actuators to provide a basic description of their capabilities, status, and precise location(s). For example, temperature, humidity, and rainfall sensors are available and they will report requested data regarding their state (e.g., current values, or a set of values over a requested period); heaters and lighting can be controlled for different regions, and they can report their energy use and state; sprinklers and water feeds can be controlled, and they can report their flow rates and consumption over periods; and nutrient feeds can be added to water feeds; etc.

Design brief

Your design brief from REMIT 10's CEO is as follows:

"We want to make the best smart-garden technology ever. We want you to design the interface that will give us a knock-out competitive advantage; one that will delight our customers. At this stage, we want to know what things our customers will want to do using your interface, and we want to see design concepts that convince us that you are the right people to design our final interfaces."

Your design rationale is important to us too. We want to know why you think the set of tasks you identify are important to our users; we want to know why you think your design suggestions are high quality; if there are risks associated with your tasks and designs, explain them. At this stage, it's important that you to convince us that you've

thought hard, considered several alternatives, and are confident that your concepts are good.

We understand that initial configuration of the garden facilities will be a challenging part of the interface design. At this stage we are most interested in your interface designs for our end-user clients who need to control and monitor a pre-configured garden environment. It's likely that our specialist staff will establish the initial configuration using systems and interfaces that are not part of your design. However, if you think you have good solutions for configuration too, we'll be happy to review them."

What you should do

The three key components of this assignment are: 1) identification of tasks that will be supported; 2) roughed out design alternatives, probably including a primary design suggestion; 3) design rationale, which is explanation of the thought processes behind the tasks and designs (i.e., why these tasks are a good idea, and an analysis of the pros and cons of the design alternatives).

You are strongly advised to carefully read the "Interface Design" section of the course lectures, including "Task Centred System Design" (TCSD). Also, read the TCSD shareware book on Learn.

If following a TCSD process, it is near certain that your submission will include clear, specific, concrete representative user tasks.

As stated in the lecture material, you should come up with as many early design concepts as possible (elaboration), and you should clarify and pursue the most promising ones (reduction). A small selection of the best design concepts should feature in your report.

Sketches will be very important in supporting and clarifying your intended design. Sketches need not be neat, but their purpose is to illustrate the intended interaction, so they should not be ambiguous. Sketches should be legible. To assist with this, it would be wise to scan (or photograph) your sketches, import them into a software application supporting vector graphics (e.g., PowerPoint) and embellish them with computer generated labels/callouts/arrows, etc.

Work in teams of four or five

This assignment is most likely to be successful (i.e., you'll learn something) if it is completed in a team. I recommend teams of four or five. If you feel you have *strong* reasons for needing to work in a smaller group, please email me to seek approval, and explain your reason for the request.

It is expected that teams will remain formed for the second assignment (details later), but teams will have the option to reform before the next assignment (so any 'free-riders' can expect to be booted out!)

What you should submit

Each team should email a PDF document of up to 30 sides to

andy@cosc.canterbury.ac.nz – note, ONE submission per team. The submission must include the name and usercodes of all team members, and the final page should contain a statement of the primary contributions of each of the team members. Thirty sides should be more than necessary, including sketches.

Remember, your key objective is to convince the CEO of REMIT Inc. that you are the best team to deliver a final and complete design.

Hints on document structure

Technical reports typically follow a similar format, including Title, Authors, Introduction, CONTENT, Conclusion. It would be surprising if your submission were to deviate substantially from this format. While there is lots of freedom over how to organise and present CONTENT, I would anticipate a structure similar to the following.

Title

Authors

Executive Summary/Abstract (*very* short summary of document purpose)

Introduction

User and Task Identification

Including categories of tasks, scenarios to exemplify tasks, and analysis of their frequency and importance.

Preliminary Design Alternatives and their Rationale (pros and cons good)

Primary Preliminary Design

a sketch and explanation of your preferred initial design

Conclusion