Tangible User Interfaces Laboratory

Assignment 3: Design Presentation and Specification + Implementation Plan

Presentation, due March 26th.
Design specification submission, due March 28th (in Orit’s mail box)

The goal of this assignment is to present the design of your TUI. Each team will present and submit its design and discuss an implementation plan. In addition, individually, you will document several aspects of the design process in your blog. The presentation (and submission) will consist of the following parts:

1) Conceptual model: A conceptual model should identify a set of objects and actions which users need to know about in order to use the system. For example for a traffic control TUI you may consider the following objects and relationships: car, driver, road, a driver owns a car etc. Describe the conceptual model using the following format:
   - Object:
   - Object Attributes:
   - Object Relationships:
   - Actions on Objects:
   - Actions on Object Attributes:
   - Actions on Object Relationships:

2) TUIML TAC Palette: Use your conceptual model as a starting point for constructing the TAC palette; Then to complete the TAC palette consider the following aspects:
   - Give a visual representation to each object.
   - Which objects to represent physically (and which digitally)
   - What conceptual relationships can be mapped to token and constraints relationships, what conceptual actions can be mapped to physical manipulations?

   A tutorial on how to create a TAC palette is found in the class website.

In a brief written discussion describe the ways the TUI structure expresses physical syntax. Consider whether the physical properties of tokens and constraints guide users. Also, describe how the physical relations between tokens and constraints indicate to users which actions are meaningful/not meaningful or even legal/illegal?

3) Storyboard: create a storyboard that describes the dynamic behavior of your TUI. Describe how users interact with interaction objects and what events are created by these interactions. Describe continuous interaction of users with interaction objects. Describe the system responses to interaction events and continuous interaction.
A paper with some guidelines (see p.19) on creating an effective storyboard is found in the class website.

4) **Visual Design:** Provide a set of sketches that describes the form, look and feel (shape, texture, color etc.) of the physical interaction objects employed by your TUI.

5) **Low fidelity prototype:** present a sketchy and incomplete prototype with some characteristic of your actual design. Test it in class with users from other team. Submit digital photos of the prototype.

6) **Implementation plan:** Your plan should address the following:
   - What alternative technological solutions for implementing your system you consider, what are the pro and cons of each?
   - What are the main tasks leading to the implementation of a functional prototype of your design?
   - What are the main milestones your team needs to reach until demo presentation? note that a proof of concept prototype is due April 9th.

7) **Individually, Document the design process of your TUI in your personal blog.** Your blog entry should cover the following aspects: motivation for your design, alternative designs your team has considered, rational for developing your current design, the main challenges your team faced while designing the TUI and how they were addressed, design methodologies used (e.g. story telling, sketches, storyboarding etc.), preliminary design sketches.