Individual Assignment #2
Worth: 5% of course grade
Due: Feb. 2 by start of class
Late Policy: 10% per 24 hours late, up to 48 hours
Last modified: 29 January 2021

Overview

In this assignment, you will tackle a *design challenge* introduced in class. You will apply the concepts you are learning in the course to the design and analysis of a **programmable thermostat**.

The specific learning objectives for this assignment are as follows:

- To practice designing user interfaces and artifacts using the design concepts and principles you are learning in this course.
- To practice analyzing user interfaces and artifacts using the design concepts and principles you are learning in this course.
- To practice discussing design by (a) providing justification for design choices and (b) providing constructive criticism on a design, with an emphasis on how, specifically, the design could be improved.

Instructions

This assignment has two tasks:

1. *Design Task*. Design a simple programmable thermostat to be mounted on the interior wall of a home. Users of the thermostat must be able to accomplish the following three tasks:
    a. *Set the temperature*. Users of the thermostat must be able to set the thermostat to maintain a given temperatures during four different periods throughout the day: morning (7 am - 11:59 am), afternoon (12 noon - 4:59 pm), evening (5 pm - 9:59 pm), and night (10 pm – 6:59 am). Users should be able to set temperatures ranging from 50 degrees to 80 degrees Fahrenheit.
    b. *Override the temperature*. Users must be able to override the preset temperature at any time.
    c. *Hold the temperature*. Users must be able to hold a given temperature indefinitely.
2. *Analysis Task*. Using Norman's concepts discussed in class (**affordance, signifier, feedback, natural mapping, constraint, conceptual model, visibility**), analyze your design. *In a separate paragraph for each concept*, reflect on how your design succeeds (*or does not succeed*) at applying the concept. In addition, as appropriate, consider design changes you could make in order to better apply the concept. In your analysis statements, be sure to put each concept or principle you use in **bold type**.
3. Be prepared to present your design in a breakout room for feedback and discussion. Ultimately, each breakout room will converge collaboratively on a design to present to the entire class.

Assessment

Your assignment will be scored on the following four-value scale:

Points	Meaning	Description
0	Missing	Assignment not submitted, or submitted late
5	Incomplete	Solution is incomplete or significantly deficient. Part of the solution is missing or contains significant gaps.
8	Satisfactory	Solution is complete but could be improved. Minor and obvious deficiencies exist with respect to one or more parts of the solution.
10	Exceptional	Solution is complete and acceptable as is. No obvious deficiencies exist. The submission addresses all functional requirements specified in "Design Task" and demonstrates mastery of each of Norman's concepts covered so far (affordance, signifier, feedback, natural mapping, constraint, conceptual model, visibility).

Handing in your Assignment

Tip: Import your sketches into a word processing program such as Microsoft Word, where you can add annotations and write your justifications. Submit your solution as a .pdf or .docx file through MS Teams by the due date.