TEAM: Thermo-Gen

Risky technical challenges

Based on our requirements acquisition work and current understanding of the problem and envisioned solution, the following are the key technical challenges that we will need to overcome in implementing our solution:

C1: Notifying Technician of Conditions. We want to be able to notify the technician operating the testing machinery when testing conditions are met within the testing chamber using pop-up window notifications. To show that a pop-up window notification is effective, it would have to draw the attention of the user; what is challenging here is creating a notification that will grab attention.

C2: Graphical User Interface. We want to be able to display to the technician an easy to understand GUI where they can input their desired test environment then leave. The GUI should also have the ability to change what kind of notification the user receives. It should also give confirmation that the test environment parameters are set.

C3: Simulating Accurate Conditions. As if connected to the final system, we want the conditions we simulate the software with to reflect those found in a real test. These conditions should reflect the extreme high and lows that the client utilizes.

C4: Microcontroller Programming and Connecting. We need to build/make/connect a microcontroller to work in our system. This microcontroller should read-in information from the client's power supply unit and adjust the settings accordingly to what conditions the client provides to the software via the GUI.

Challenges covered by demos:

In this section, we outline the demonstrations we have prepared, and exactly which of the challenge(s) each one of them proves a solution to.

Demonstration 1: Pop-up

Challenges addressed: Notifying Technician of Conditions

Flight Plan: Step by step overview of demo

1. First we will simulate a scenario where the testing conditions inside the apparatus have been met.
2. Then when the simulated data reaches those desired conditions, a window notification will appear on the screen.
3. Finally, the user will have been effectively notified about the situation.

Evaluation:

ü Convincingly demo'd each of listed challenges?

ü Other evaluative comments:

Demonstration 2: GUI

Challenges addressed: Graphical User Interface

Flight Plan: Step by step overview of demo

1. First the user will open the GUI.
2. Then the user will input the desired test environment being even able to choose what unit they want to use.
3. The user will also be able to choose how they want to be notified
4. Finally the user will confirm their desired test environment

Evaluation:

ü Convincingly demo'd each of listed challenges?

ü Other evaluative comments:

Other challenges recognized by not addressed by demo:

If there were challenges you listed earlier that were *not* covered by a demo, list here. This will hopefully be a short list…but better to be clear about where you are. If you have items here, you could list (if applicable) any pending plans to reduce these risks.

- C3 - Simulating accurate conditions as if connected to final system
  - We will be using real data from the client to feed our system during trial runs
- C4 - Microcontroller
  - We still need to learn how to build/make/connect a microcontroller; we are pretty set on an arduino controller and are meeting with an EE professor on 4/23 to learn more about using it