Jeremy Booth

Computer-Driven Experiences with Familiar Objects Week 3

Prompt: Why did you choose to manifest your project in this way?

Oh, this an easy one! To briefly summarize, my project asks the question, "What would it be like if 'Internet of Things' devices could read and translate our emotions into the physical world?" and it uses, in its current iteration, Arduino, NFC, and Python to accomplish these goals. From a technical standpoint everything is very straightforward as a result of the platforms I chose, and that's largely the reason why I'm using them. I'm not trying to create an IoT environment, since I don't have millions to spend on R&D like Samsung or Amazon do, and frankly that's just more work than its worth for what I'm trying to accomplish. This is an exercise in speculative design, it's "what if this were possible?" and the "what if" is the physical manifestation of our emotions. All I really need to get the point across is an easily implantable proximity sensor that also stores info, and I chose NFC for this because its easily accessible; and I need something that can easily run scripts and activate circuits, so I chose Arduino+Python because of how well they interface with each other (as shown in my previous research journal). Also, the vast support for both Arduino and Python will make documentation easier, since plenty of people have experience with these languages.

Now, from a technical standpoint, I really doubt that this is going to change, especially since I already have a workflow and testbed setup for these environments. The only things that's up in the air about my project right now are the user experiences and how I'm going to make them interesting and engaging. I plan on meeting with Professor Joel Chan from the University of Maryland iSchool to discuss design philosophies and sort out this issue. Professor Chan was a Postdoctoral Research Fellow and Project Scientist in the Human-Computer Interaction Institute at Carnegie Mellon, and his research focuses on the intersection between people, information, and creativity. It is because of this that I am seeking his guidance on how to design a pleasing experience that demonstrates my "what if" effectively. It took me about an afternoon to find Professor Chan, so I'll say I spent about 3 hours.

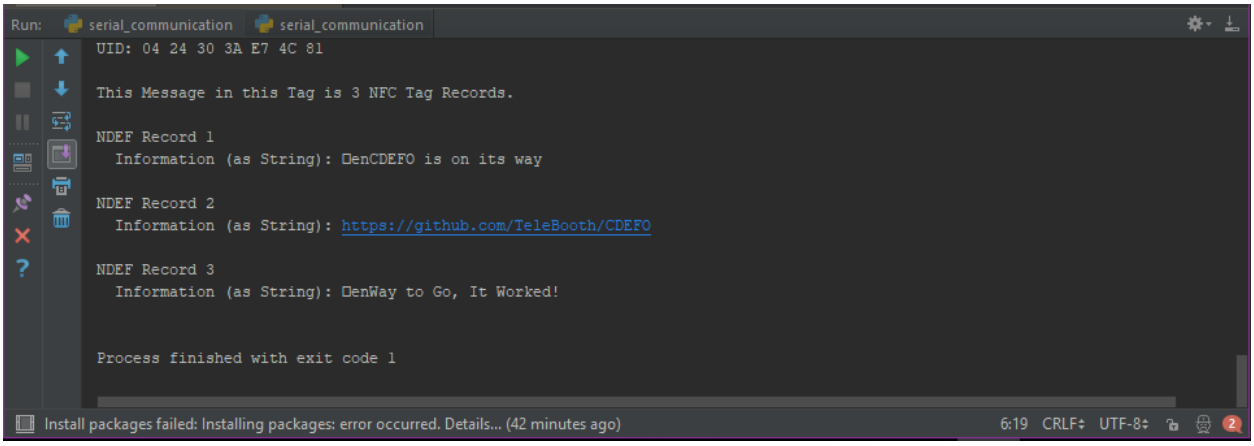
Week 2-3:

- Find more user experiences (continuous)
- Start working on the C++ library (2 days)
  - Try to at least get down function prototypes that apply to the user experiences gathered so far.
- Establish serial communication between the Host Machine and the Arduino (3 days total)
  - Can I get the Arduino to run a command on Windows/Linux/Unix? (1 day)
  - What are the limitations of data transmission over USB? (2 days)
- Establish a reliability standard for the NFC communication (2 days)
  - How often does communication drop?
  - What is the effective distance?
  - Etc.

Now, onto keeping my schedule, the finding user experiences has been halted, as I'm a lot more stumped than I thought. However, I've ordered certain parts that I'm certain I'm going to be using, such as LED strips so that I'm not waiting for parts when I do come across some inspiration. I have workable

NFC read/write sketches that allow me to write strings to the NFC in such a way that they can be parsed easily.

I've established the serial connection between the Arduino and the host machine, and I've even written a Python script that visits a URL that's stored on the NFC (in the example, it is the GitHub repository for my project, named CDEFO).



Despite the setbacks on the user experiences, I can safely state that I am well on schedule! I spent about 9 hours in total on my project, including finding Professor Chan.