ESE111

Cell Phone Teardown

**Introduction:** In this lab, you will be examining a piece of technology that you use every day: a cell phone. You will be performing a teardown, which is dissecting a piece of technology to see how it works and gain insights into its functions. In the process, you will see how the concepts introduced in lecture and the components introduced in lab are used in commercial technology. For some awesome examples of teardowns check out: [http://www.ifixit.com/Teardown](http://www.ifixit.com/Teardown)

**Goals:**

- To disassemble a phone (without completely destroying it)
- To identify the different electrical and mechanical components of a cell phone
- To understand how these components work together in the device and exemplify concepts seen in previous lectures and labs

**Instructions:**

Each group will not have the same phone, so it is impossible to write a set of instructions that will apply to everyone. The following instructions are meant to be a general procedure. It is up to you and your lab partner to fill in the blanks. Googling your phone’s specific model is a good place to start. The post-lab for this lab requires a very detailed description of your teardown, including many pictures. You should be documenting the process with LOTS of pictures.

1. You should have a phone at your lab bench, if not, ask the TAs for an old cell phone. There should be one phone for each lab partner pair. Please take your “before” photo
2. Remove the battery cover and battery from your phone. There should be no power supplied to your device during the teardown.
3. Remove all external screws and open the casing. Screws may be hidden under labels or screw covers. Some bending and prying may be necessary. But take care not to damage the phone.
4. One the phone is open, identify the key components. Below is a list of suggested components. Once the component is identifies, remove it from the phone and look it up on the internet to see what additional information you can find on it. It is common practice to include links to component datasheets in teardown write ups.

    **Components:**
    - LCD Screen
    - Processor
- Microphone
- Speaker
- Camera
- Communication circuitry (ADC/DAC, Antenna, ICs)
- Keypad/Buttons

5. If you can identify components that have been used in the lab or components that relate to an idea in the lecture, document it and call over a TA!

6. When you have removed and identified as many components as you can, lay out all of the components and pieces and take your “after” photo

7. Clean up ALL components and make sure lab station is clean

Post Lab Assignment:

Create an information document or presentation to organize your pictures and findings. Make sure to include:

- Pictures and commentary for each step of the teardown
- Pictures of identified components with description and links to relevant information
- A paragraph relating components and their functions to concepts learned in lecture and lab

This assignment will be turned in on Canvas. Lab partners may submit the same write up, but make sure to include your partner’s name.