CruftFest 2014

... the fourth annual festival of recycled & hacked equipment!

> *cruft*, n.
>
> 1. The dust that gathers underneath a bed
> 2. Bad code
> **3. Accumulated physical or virtual junk**
>
> -- Urban Dictionary

The UK alone generates over 1.8 million tonnes of electronic waste each year. Worldwide, millions of discarded computers and appliances end up in landfills where they leach toxic chemicals into the environment. Many others are sent for processing to developing countries with lax safety standards.

Each of you will save a small amount of cruft from the dump by repurposing it as a digital media interface. Your assignment is as follows:

1. Find an obsolete or discarded piece of equipment, for an example an old computer or peripheral, a piece of stereo gear, a home appliance, or a non-electronic household item. Find something with character!

2. Repurpose your cruft as either a digital media controller (which lets a human performer control graphics or sound) or a digital media installation (a self-sufficient piece of artwork involving computer-controlled visuals, sound or motion). You can make use of the device's existing functions-- knobs, lights, motors, etc.-- or remove all the internals and replace them with your own sensors/displays. You are also welcome to modify the structure or appearance of the device however you wish.

3. On the due date, provide a brief (max 5 minute) demonstration or performance with your interface and exhibit it as part of an open exhibition day at QMUL.

4. Submit a 3 or 4-page writeup of your design, a short video or a blog-style entry with photos, and all code and any other relevant technical information (e.g. schematics). **The only "cruft" in this project should be your repurposed equipment. We expect your code to be beautiful!** Specifically, it should be legible, well structured, and thoroughly commented.

Due Date: Wednesday, 5 November 2014 (in class)

Suggested tools for this project:

Arduino: Use your Arduino to collect data from buttons, knobs, or other sensors. Many kinds of sensors can be ordered online, including light sensors, accelerometers and gyroscopes, microphones, pressure sensors, flex sensors, etc. Visit Oomlout (oomlout.co.uk), Proto-Pic (proto-pic.oc.uk) or Farnell (farnell.com) for ideas. You can also use your Arduino to control lights, motors, or other output devices.

Processing: Use Processing to communicate with your Arduino, to control graphics, and to handle other computer input. Depending on your project, you may end up writing the main body of your code in Processing. OpenFrameworks can be used as an alternative to Processing for those with C++ experience.

Max/MSP or SuperCollider: Use these for audio or MIDI handling. Several tools are available to communicate between these languages, Arduino and/or Processing.

You can use any hardware and software you want, as long as you document your efforts. Your hardware setup need not be elaborate: you are welcome to do most of your project on the software side with a simple interface to your cruft.

Turn In:

1. A 3 or 4-page writeup describing what your CruftFest project does, what your motivations were and what technical challenges you solved.
2. A short video or an HTML-formatted article *with several images* showing your project in action. This is important! Think about how you'd want to share your project online.
3. An archive of code, schematics and design files used in your project.
4. **IMPORTANT:** Any code or designs you have reused from another source *must* properly credited. Give the URL and say what you used. You are welcome to build on other sources, so long as they are properly credited and you also make a substantial contribution of your own.

Marking:

This project counts for 40% of your module mark. Your project will be evaluated on completeness (did you make an interface, and are all materials submitted?), clarity/ thoroughness of code, quality of presentation, and creativity/style. More complicated is not always better: make something fun, quirky and elegant!

Examples:

Check out some photos from past IDMT CruftFests:
2013: https://www.flickr.com/photos/matqmul/sets/72157637595458243/
2012: http://www.flickr.com/photos/matqmul/sets/72157631989341384/
2011: http://www.flickr.com/photos/58917033@N07/sets/72157628097750005/

And a few examples of projects from past years:

'Uruca Caliandrum' crawling hairbrush: http://youtu.be/qCjgobi53T8
Free London Radio: http://vimeo.com/79521135
Digital bow and arrow game (with real bow): http://qmat.net/project/digital-bow-and-arrow/
'Status Suit' Twitter-enabled suit (started as CruftFest, expanded for Barbican): http://qmat.net/project/status_suit/
Heartbeat-modulated cyclically interactive game: http://you-rhythmic.com/?page_id=38
CruftFest message bag: http://christinemorris.com/2011/11/cruftfest-message-bag/
cyKorg (hacked classic 1984 Korg Super Section): http://vimeo.com/32686701
Using face tracking to draw on an Etch-a-Sketch: http://vimeo.com/32689570
Supersonic toy airplanes: http://vimeo.com/32682413

More hacks and ideas:

- http://hackaday.com/
- http://hacknmod.com/
- http://makezine.com/
- http://www.sparkfun.com/tutorials