**Transiently Powered Computer Systems Independent Study**

**Idea:**  A transiently powered electronic notebook

**Power Source:** Motion of the electronic pen

**Details:**

1. An algorithm will transform into electronically print type characters the characters written on the notebook by a pen.
2. As the pen moves over the surface of the notebook, energy is created by its movement across the screen providing the algorithm enough power to perform its work and eventually display the print character on the screen of the notebook.

 Electronic Notebook - a device that translates writing into print characters on a screen. I was not sure if we could go for a touch screen device or simply a motion sensor which any text editor can use - I hoping the later would be preferred.

1. Hybrid powered - kinetic and solar powered. I also was thinking of RF waves as a potential power source, but I don't know if that would be very realistic.
2. For storage, an SD card would be used to store the notes unless the latter option is used, then it would not be needed.

 Currency Exchange Rate Tracker - a watch-like device that allows the wearer to view currency exchange rates of whatever countries they would like to compare.

1. Mainly powered with kinetic energy - may need to be solar powered as well.
2. No need for storage.

 A mapping device - A device that tracks locations from a starting point and maps the routes that it goes through. The person can then transfer the map and name locations if need be.

1. Powered using the kinetic(again) energy from its displacement.
2. A SD card would be used for storing the route.
3. I thought of this because of Haiti having many locations that still need mapping, I think, but if there is a small device that tracks locations and can harvest energy from the sun, and that might be a way to reach some of the lesser traveled places

Deliverables for Dr. Knisely:

Idea: A watch-like device that keeps track of locations from a starting point, and later allows uploads to an application that allows the wearer to name locations, unless it is already mapped, so the wearer can view where he traveled.

Usefulness: Facilitates mapping in places that are potentially unreached, for example unmapped places in a country like Haiti. Anyone can wear this, but travelers especially can use to accurately keep track of where they have been when travelling in places where energy is scarce.

Power source: Kinetic and solar energy

What I am measuring: distance ~ change in displacement

Investigation on power source: Needs doing.

Hardware & compilation of the hardware: Needs doing

Paper on device operations: Needs doing

Altimeter = to measure altitude

Compass – to measure direction

Clock –

Power to extended life or transiently

Literature survey

Atmel 7 atmega

To track time

Possibility

ICE-cord C-bus

Semester Outline:

January: literature survey

February: device

March:

April:

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Idea: A 5x3” flat device, possibly with Bluetooth support, that converts characters written by a “special” pen to printed ones on a computer or simply any electronic device for any application that supports text editing. – *simple version*

Usefulness: For people who never learned how to type but learned to write and would love to be able to use the advantages of word-processor/text editor or simply a computer, they can simply write on the device and the character will appear on the spot the cursor in the text editor.

To clarify, this will hopefully not encourage laziness when learning how to type, since it is proven that people can type much faster than they can write. This idea only addresses the need, for example people who don’t have enough fingers to type but can write.

Power source: Kinetic (& Radio waves)

What I am measuring: motion across sensor (algorithm will convert to print character -> device will send proper signal to connected computer)

Investigation on power source: Needs doing.

Hardware & compilation of the hardware: Needs doing

Paper on device operations: Needs doing

Semester Outline:

January:

February:

March:

April: