Project Ideas

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1 Rough Ideas

The team came up with few ideas at the beginning before finalizing the top four projects of the projects below.

- Environment Sensing Quadcopter
- Brightness Changing Lantern
- Equalizer/Mixer Board for Music
- Mail Notifier
- Home Automation
- Portable Heating Element
- Smart Cane

2 Final Ideas:

2.1 Brightness Changing Lantern

The brightness changing lantern is a device that has the ability to change its level of brightness due to the intensity of darkness on the outside. The device would use a microprocessor to has a variable adjusting brightness which allows the user to conserve battery if needed. Two sensors would be at the top to detect brightness while using leds for the light.

2.2 Equalizer/Mixer Board

The board is an enhancement tool such as a guitar pedal going into an amplifier. This board will allow the user to increase various ranged such as the 10 Hz to 100 Hz range of frequency or the 500 Hz to 1000 Hz if needed for special utilization for a specific sound effect. Also, if the user would like to decrease the effect, the user could do that as well.

2.3 Portable heating element

The portable heating element is a on the go user friendly device. This can be used for a cup the size of a mug or a taller mug with a fluid near the top. With a two pressure sensor safety, the device is placed on a cup and increases the fluid to a desired temperature. The safety keeps the device from being on without it being on the edge of a cup.

2.4 Smart Walking Cane

The smart cane is a biomedical device that will work as a tool for biomedical diagnosis to learn walking pattern and behaviors of its users to help diagnose disabilities and disorders. This board will have smart capabilities of sensing nearby objects to alert the user and have embedded accelerometers and gyroscopes connected to a network module to study walking patterns from a remote hub. We will then understand walking patterns using variable statistical signal processing.