

Project Title: Subliminal Fitness

Project Summary:

Six volunteers will be hooked up to a heart rate monitor and pedometer for 24 hours. Each volunteer will not be told why they are wearing the devices or what the data will be used for. The project is a race the competitors are not aware of.

The data from the two devices will be analysed and each volunteer will be presented with a laser etched Perspex slab and other media detailing their activity over the 24 hours. The slab and other media will display their activity ranking in comparison to the other volunteers. They will only discover that they are being compared to the other volunteers when they receive their slab.

Development:

There are three parts to this project, the collection of data, the analysis of data and the presentation of data.

The collection of data will require a pedometer, a heart rate monitor and a method to store the data collected. An Arduino board can be used to collect the signals from the two devices and store the data for collection. Both heart rate monitors and pedometers are relatively easy to build. Pedometers are also cheap to buy and easy to modify, but heart rate monitors are expensive. We will create an infra-red LED heart rate monitor. This works by measuring the amount of infra-red light that can pass through the user's finger, when the heart pulses the higher density of blood absorbs the infra-red light creating a pulsing output on the infra-red receiver.

The analysis stage of the project will be quite simple. Heart rate and steps will be sampled every 10 minutes throughout the day. Only heart rates above 100bpm will be counted. The aim of the project is to record activity and exercise, heart rates below 100bpm are resting rates. The heart rate samples above 100bpm will be totalled, as well as the number of steps for the 24hour session.

Through a few tests we will determine the correlation between steps and heart rate. We will assign both heart rate and steps a weight depending on how much we think they are valuable to exercise. The total heart rate and total steps will be multiplied by their respective weights and added together to provide the final point value for each volunteer.

The data will be presented to each volunteer in many ways in order to saturate their lives for a short time with information about their activity and exercise (Thoughts in Figure. 1). Primarily they will be presented with a Perspex slab with laser-etched details about their position in comparison with the other volunteers and information about their heart rate and steps.

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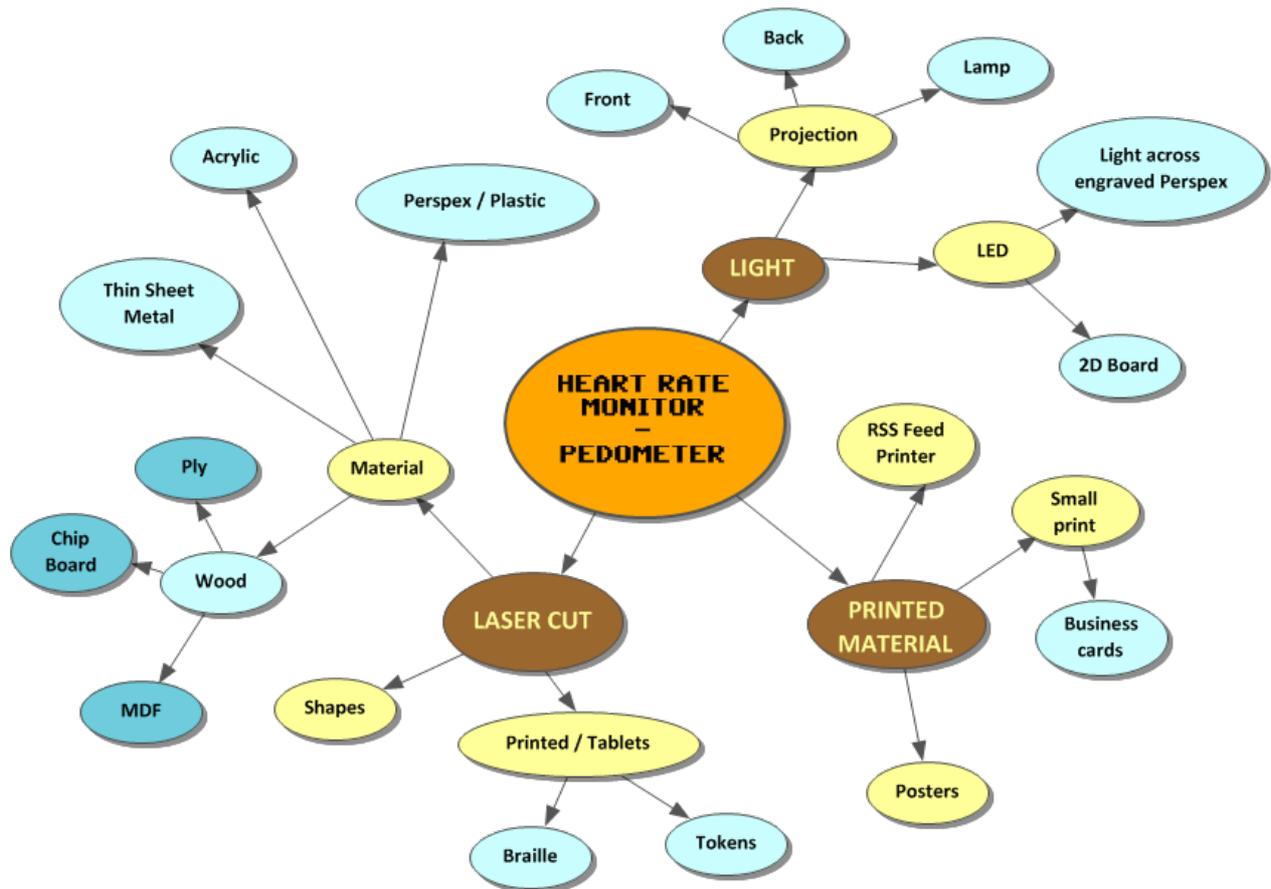


Figure 1: Mind-Map

This project could be continued on after the deadline. If we had the time we would create many more recording devices giving one to each of the volunteers. This way we could record each volunteer on the same day each week and present them with the data each week as a continuing form of motivation for activity and exercise.

Plan of Work:

Part 1: Create pedometer and heart rate monitor. Roughly 1 week to wait for parts to arrive. 1 week to assemble.

Part 2: Write Arduino code. 1 week.

Part 3: Testing and valuing of steps vs. heart rate. 1 week.

Part 4: Recording volunteers. Given 1 day for recording, 1 day to move device from one volunteer to another and a spare 5 days. 17 days.

Part 5: Creating presentation materials 1 week.

Total: 52 Days

Stephen Dunn | Chris Hatton

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Output:

The project will create a device that can record a user's steps and heart rate across 24 hours.

The data collected from the volunteers will be presented in many different forms in order to saturate the volunteers with information about their 24 hours. They will each receive a Perspex slab; this will have their overall score, graphs of their steps and heart rate and comparison to the other volunteers etched into it. A mount for the slab will be created; this mount will hold the slab at the top and shine a light into the slab to display the content etched into it.

They will also be presented with a wooden laser etched representation of all the volunteers' scores as they increase throughout the day.

Posters will be created to display in an info-graphic style all the gathered information about all the volunteers and will be put up in locations where the volunteers are likely to see them.

Other methods of presentation will also be used. (Figure. 2)

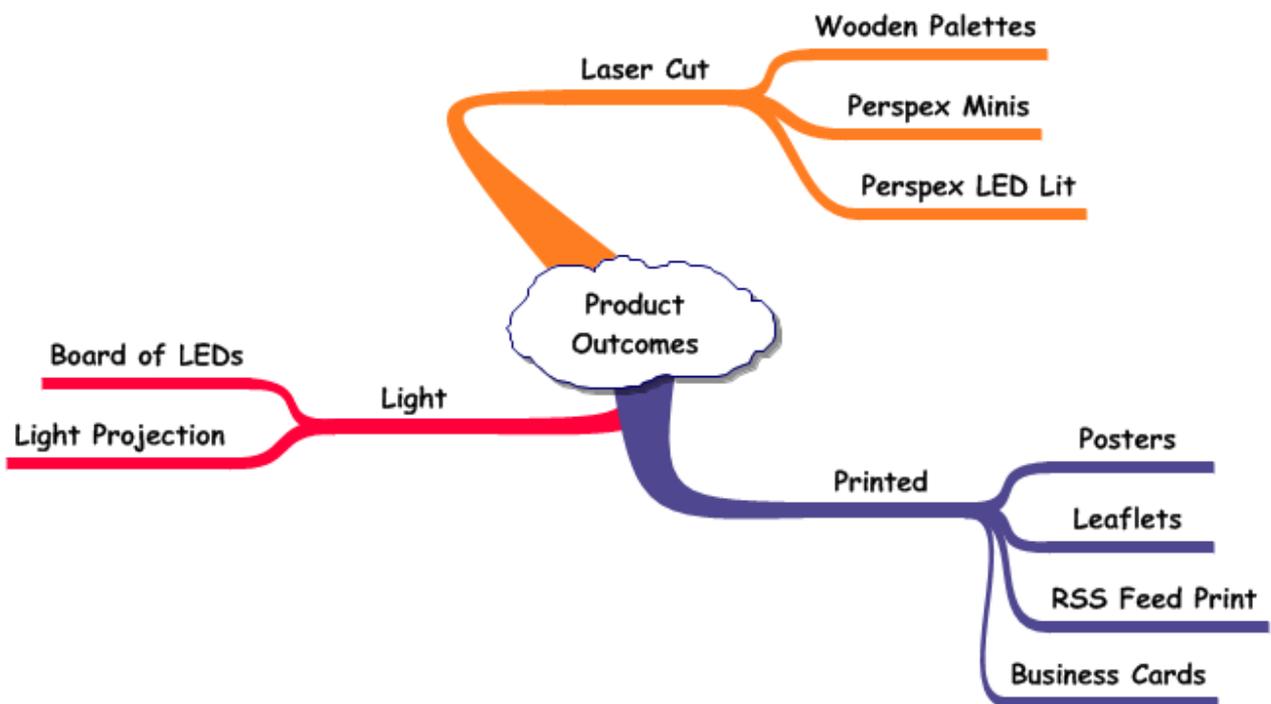


Figure 2: Project Outcomes

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Each day people go about their daily activities not realising the amount of exercise they are getting, or lack thereof. This project is attempting to manifest the data of a person's daily routine in a way that not only shows their activity but compares them with others in order to motivate them to become more active.

Criteria:

This project uses a range of software and hardware to record and manifest data to give people an insight into how much exercise they get during their average day and influences a change in behaviour.

We will be demonstrating our understanding of a variety of forms of media from physical to print and an awareness of environmental presentation of information.

By using so many forms of media we will be studying the work of many disparate disciplines and artists.

References:

Berg's Little Printer
bergcloud.com/littleprinter/

A small electronic RSS feed printer; to print a custom RSS feed receipt when required.

Double Dragon Laser-Cut Piece of Wood - Aled Lewis

Posted by Tamari Kharebava

blog.wirebot.com/2011/09/17/double-dragon-laser-cut-piece-of-wood/

Lewis creates a laser-cut art piece based off the Gameboy game: Double Dragon II.

Reddit's Guide to Fitness

www.greatist.com/fitness/reddits-guide-to-fitness/

Displaying a very visual guide on how to exercise and keep fit.

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Simon Faithful
www.simonfaithful.org

Faithful incorporates travel into his work as he tries to display his journey from South to Antarctica (2004-2005). A majority of his artwork focuses on simple pixel line.

Stefanie Posavec
www.itsbeenreal.co.uk/

Posavec is a freelance designer who specialises in communication design. Her work mostly focuses on printed material; ranging from posters to books.