Senior Design

Team:

Project Leader: Me

Project Manager: Mitchell

Break Down:

Target Users/use cases:

Alternative, more usable pedometer

Runners

Medical Professionals/Pysical therapists/chiropractors that proscribe to clients

Personal health/fitness tracking (I.e: weight, posture)

Health insurance discounting

Company liability monitor

Use Cases:

A runner wishes to improve their running technique, uses shoe implants to get an analysis of their running form and receive recommendations on how to improve

Record on device

Someone with back problems wants alerts when they’re slouching or an analysis of the way their balancing with recommendations on how to better it

Bluetooth

Doctor with patient who has back/joint problems wants to collect data to help diagnose issue

Record on device

Passive power

Features:

Storage Features:

Bluetooth sent to phone, phone records

Pro: no on device storage needed, reduces size and power consumption

Con: Requires other device

Record on device, send to parent when available

Pro: No other devices needed when recording data

Con: Need significant storage, have to develop storage efficiency techniques, may require too much power

Power Supply Options:

Battery on Device:

pro: less concern about power

con: may require charging, size, weight, possibly lowest lifetime component

Passive Power Through Movement:

pro: never requires charge, less size, less risk

con: may not be enough power for desired features

Proposal:

Categories:

Sensors

Microcontrollers

Communications

Web Server

Mobile Phone Service