Swell Alert Video
The Idea

Without

With

SWELL ALERT
Group Specialties

Eric Goodman – Team Lead, Wi-Fi, Server

Ryan Summers – Processor, SDRAM, GPS

Adam Sundberg – All things Music

Outhone Bounkhoun – Power, Touchscreen
Resulting in PCB

Assembled
Swell Alert Video
Software Overview

Polling
- Touch Panel Flag
- Get GPS
- Setup Wifi
- Wifi Play
- SD Card Play
- Alarm
- Volume
- Stop Music

Interrupt
- Touch Panel
- Real Time Clock
- Wifi Data Receive
- Rotary Encoder
- Close Wifi Connection
Wifi and Server

- Get location from coordinates
- Get coordinates from location
- Get local beaches
- Get surf data
- Get drive time
- Search for song
- Stream song
Swell Alert Demo

- Home Screen
  - Scrollable beaches
- Expanded Beach View
- Music
  - Server and Local
- Location
- Alarm
  - Indexing System on SDRAM
- That’s Swell Alert!
How much will it set me back?

- What it cost us
  - Parts ~ $67.50
  - Fabrication ~ $150
  - Assembly ~ $200
  - Slave Labor.. FREE!
  - Grand Total $417.50 per board

- However, buying in bulk ~ 1000 boards
  - $100 per board
Conclusion

➢ What we did right
  ▪ Great organization and teamwork
  ▪ Designed with fail safes/robustness

➢ What we did wrong
  ▪ Assumed certain subsystems would be easy to implement (usually turned out to be the hardest ones)

➢ Advice for future Senior Capstone Students
  ▪ Mistakes made in the Fall will amplify in the Spring
  ▪ Pick a topic that will be fun and interesting! Makes the long hours a lot easier
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Q&A