StreamFi

Team 10
Project Update
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Refresher

- Opaque fluid containers are inconvenient to monitor
- Lack of precise measuring methods
Concept

- Universal retrofit volume measuring platform
  - Home, stadiums, festivals, etc.
- Monitor containers
  - Active acoustic sensing to measure volume
    - Sweep frequencies to determine change
  - Notifications & container tracking via web application
Updates

● Prototyping with Raspberry Pi
  ○ Volume Estimation
  ○ Sweeping Frequencies 600 - 1400 Hz
    ■ PiGPIO
  ○ Observing resonant frequencies for each container state

● Prototyping web app
  ○ Basic display
  ○ Minimal dataset
Updates

- Volume Estimation
  - Observed resonance at various frequencies and volume levels
  - Empty, Half, Full
  - 600 - 1400 Hz
  - Still working on relating data to fill level
Updates

- Porting to cc3200
  - Driving transducer with AudioBoost pack
- Custom PCB
  - Stripped down cc3200 breakout board
Final Presentation

- **Product**
  - At least two devices reading different volumes of different containers
  - Web application integration
  - Calibration for different kinds of containers

- **Containers**
  - Metal water bottle
  - Keg
  - Gatorade jug
  - Stretch Goal: Observe behavior with propane tanks