Audio-based Fitness Tracking

Team Jonathan: Michelle, Joe, Jen

About Jonathan

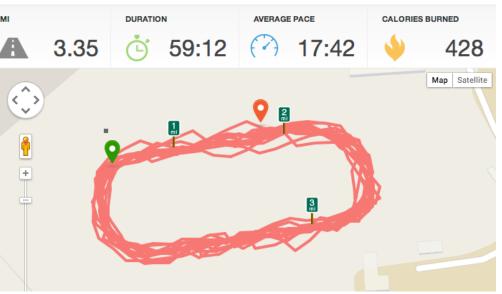


- Legally blind for his entire life
- Held various careers including lobbyist for people with disabilities
- Worked with AT projects before
- Active physical life

An active physical life







Jonathan's request

Assistive technology that...

1. Reports data during a workout

- Distance
- Steps
- Heart rate

2. Tracks information regardless of location

- Indoors \rightarrow treadmill
- Outdoors \rightarrow track

3. Provides access to data post-workout

- Mobile
- Desktop

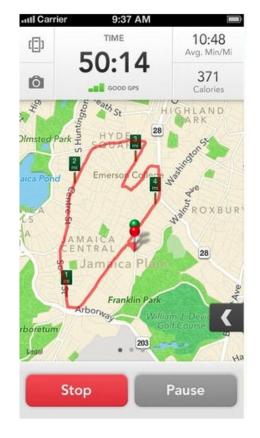
Performance Metrics

- 1. Access to Metrics While Exercising
- 2. Access to Metrics from Past Workouts
- 3. Efficiency
- 4. Satisfaction
- 5. Comfort Level

Research: Existing Fitness Tech







Our solution: iPhone + heart rate monitor

Accessibility VoiceOver					
VoiceOver					
 VoiceOver speaks items on the screen: Tap once to select an item Double-Tap to activate the selected item Swipe three fingers to scroll 					
VoiceOver Practice					
Speak Hints					
Speaking Rate					
*	*				



Phase 1: 3 "Paper" Prototypes



3 Different Focuses

- Efficiency
- Learnability
- Satisfaction
- We imitated iOS Voice Over

Be consistent and verbose.

- Consistency is key
- More > Less
- Audibly confirm actions

Phase 2: Barebones iPhone app

- 3 Main Options
- High fidelity with basic functionality
- No persistent data

Configure a New Workout Use Last Workout Configuration Review Previous Workouts

Jonathan's Fitness App

Phase 2: Lessons learned

- External Consistency
- Make sure mental model is the same as actual app

Select Time Inte	rvals for A Next		
		Carrier 🗢	8:43 AM 🗩
No ti	me		
30 sec 1 min	iute		Resume
			Hear Stats
			End Workout

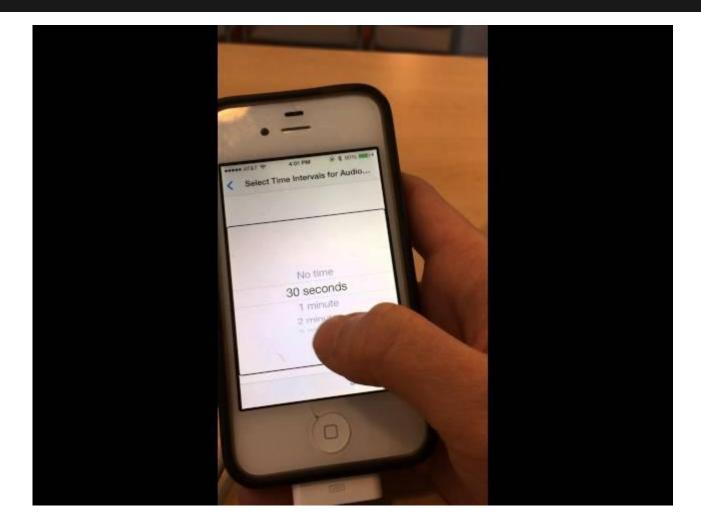
Phase 3: Functional Prototype

• Integrating functionality

- \circ connecting to heart rate monitor
- saving/fetching data

- Improving the user experience
 - adding confirmations
 - display vs. speech

Demo: Configure a new workout



Demo: Use last workout configuration

٢	Use Last Workout Configuration	I,
ł	Audio metrics on: time elaps	
	Time interval: 30 seco	
	1	

Demo: Review previous workouts

ASAM ASAM Back Workout Summary Date: 12/03/13 Time: 00:00:04 Average heart rate: 66 bpm	Back Workout Summary Date: 12/03/13 Time: 00:00:04		1
Time: 00:00:04	Time: 00:00:04	A PART A	
		Date: 12/03/13	
Average heart rate: oo opan	Average heart rate: oo opin		
		Average heart rate: oo opin	

Performance Metrics - Evaluation

1. Access to metrics while exercising	 On demand Automatically at a range of intervals
2. Access to metrics from past workouts	 By date, metric Averages across ranges of time
3. Efficiency	 "Use last workout configuration" option
4. Satisfaction	 Time, heart rate, calories burned Highly configurable
5. Comfort level	Bluetooth connection

Team Roles

Joe - Storyboard/Retroactive Retrieval Rockstar

Michelle - Accessibility/Wahoo Wizard

Jen - Core Data/Configuration Queen

Next Steps

- Submit to App Store
- Integrate with phone GPS
- Integrate with pedometer/distance tracker
- Setup Desktop access



Thanks!

Contact us @mit.edu

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Phase 2: iOS Storyboard

