What We’ll Do Today

- Introductions
- Goals of Accessibility Capstone
- Discussion of project ideas
- Demo Android apps you developed
- Optional – reprise of Richard Ladner’s short course lecture
  - Models of disability
  - MobileAccessibility Project
  - Other Mobile Projects

Goals of Capstone

- Design, build, and test accessibility applications on the Android (or other) platform.
- Present results.
  - Code in the open source MobileAccessibility repository or other repository
  - Short paper
  - Poster
  - Short Video

Design Process

- Work will be done in teams of 2-3 students
- Each team has a mentor
- Weekly review sessions
- Work with users with disabilities to identify needs for applications
- Project Proposal – preliminary design and mockup
- Review with users
- User testing of paper prototype or equivalent
- Prototype implementation based on input from users
- Test with users
- Final implementation based on input from users and additional testing
- Final Project Presentation
  - Paper
  - Video
  - Poster session open to the public

Criteria for Projects

- Design process
  - Understanding the needs of the intended users, identifying real needs, regular testing with users (New)
- Functionality
  - Does it actually work as intended
- Quality of the code
  - Can the code be adopted by others as part of an open source effort
- Innovation
  - Is the application novel
- Impact
  - Does the application have impact on the lives of people with disabilities
- Quality of products
  - Written report, poster, video
- Effort
  - Was the student’s effort proportional to the overall team effort (A team is expected to have equal effort from all members)

Reprise of Richard Ladner’s short course lecture

- Models of disability
- MobileAccessibility Project
- Other Mobile Projects
Past Seminars

- 2010 Website
- KOMO TV Story
- 2011 Website
- TapBeats Video

Basic Data

- 650 million people world-wide are disabled
- 16% of US population to ages 15 to 64 is disabled.
- 10% of the workforce is disabled
- 5% of the STEM workforce is disabled
- 1% of PhDs in STEM are disabled

Demographics US Population

Disabilities

- Vision
  - Blind
  - Low-Vision
  - Color Blind
- Hearing
  - Deaf
  - Hard of Hearing
- Speech
  - Ability to speak
  - Stuttering
- Mobility
  - Ability to walk
  - Ability to use hands/arms
- Cognition
  - Dyslexia
  - Short-term memory loss
  - Dementia
- Multiple
  - Deaf-blindness

Models of Disability

- Medical Model
  - Disabled people are patients who need treatment and/or cure.
- Education Model
  - Disabled youth need special education.
- Rehabilitation Model
  - Disabled people need assistive technology and training for employment and everyday life.
- Legal Model
  - Disabled people are citizens who have rights and responsibilities like other citizens. Access to public buildings, voting, television, telephone, and education are some of those rights.
- Social Model
  - Disabled people are part of the diversity of life, not necessarily in need of treatment and cure. They do need access when possible.

Platform

- Sensors
  - Video camera
  - Microphone
  - GPS
  - Compass
  - Accelerometer
- Human input
  - Keyboard
  - Touch screen
  - Speech
- Output
  - Speech
  - Audio
  - Visual
  - Vibration
MobileAccessibility Project
bridge to the world for blind, low-vision and deaf-blind people

Web Services
Camera
Accelerometer
Compass
Speech output
Many Useful Apps

Braille
Input/Output

Smartphone
GPS

Ideal Group
http://ideal-group.org/sj131264/

Project Possibility
http://projectpossibility.org/index.php

Screen Readers
• VoiceOver for iPhone
• Eyes-Free Shell and Talkback for Android

K-NFB Reader Mobile
• Optical Character Recognition
• Focalization
• GPS
• Cell Phone

Braille Notetakers
BrailleSense
BrailleNote
Braillenote with GPS

DeafBlind Communicator

Variety of Access Goals
- Everyday living in the home
- Transportation / mobility
- Sensing the environment
- Education
- Communication
- Games