Accessibility Capstone
Introduction to Disability

Richard Ladner
University of Washington

What We’ll Do Today
• Introductions
• Goals of Accessibility Capstone
• Disabilities
• MobileAccessibility Project
• Other Mobile Projects
• Ideas for Projects (Discussion)

Goals of Capstone
• Design, build, and test accessibility applications on the Android 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.
• Each team has a mentor.
• Weekly review sessions
• Project Proposal – preliminary design and mockup
• Review with users
• Prototype implementation based on input from users
• Test with users
• Final implementation based on input from users
• Final Project Presentation
  – Paper
  – Video
  – Poster session open to the public

Past Seminars
• 2010 Website
• KOMO TV Story
• 2011 Website
• TapBeats Video

Criteria for Projects
• 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)
What We’ll Do Today

• Introductions
• Goals of Accessibility Capstone
• Disabilities
• MobileAccessibility Project
• Other Mobile Projects
• Ideas for Projects (Discussion)

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

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.

Demographics US Population

Source: U.S. Census Bureau, Survey of Income and Program Participation, 1982

What We’ll Do Today

• Introductions
• Goals of Accessibility Capstone
• Disabilities
• MobileAccessibility Project
• Other Mobile Projects
• Ideas for Projects (Discussion)
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

What We’ll Do Today

- Introductions
- Goals of Accessibility Capstone
- Disabilities
- MobileAccessibility Project
- Other Mobile Projects
- Ideas for Projects (Discussion)

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

Braille Sense

BrailleNote

Braillenote with GPS

DeafBlind Communicator

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

More Ideas