Inclusive Apps: Supporting Mobile Accessibility Standards Through Educational Exercises
SIGCSE Special Projects Funding Status Summary
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Using SIGCSE funding, we have made substantial progress with our research. We wrote a paper detailing the progress of our research and we submitted it to ACM Inroads. We have divided the project in two: I) Creation of educational mobile accessibility labs, and II) Analyzing existing, popular mobile applications for accessibility issues.

Creation of MILK Accessibility Labs

The Mobile Inclusive Learning Kit (MILK) labs are educational mobile device accessibility labs designed to inform and motivate students about creating accessible mobile (smartphone and tablet) applications (``apps"). These labs each address at least one accessibility issue. The SIGCSE funding has allowed us to hire two students to build the modules. There are now eleven labs. The existing labs and documentation are available on the project website www.milkally.com.

Using the SIGCSE funding we have conducted workshops for Women in Computing (WiC) and High School students, and have presented the labs to potential collaborators at the Technical University of Berlin. This has enabled us to disseminate our work and gather feedback enabling us to make technical and educational improvements on the labs.

Collaborating with NTID[1], we are developing an NSF-IUSE proposal to further expand these labs. We have also been working with the Access Engineering group at the University of Washington. The Access Engineering group has provided advice on the project's lab content and the direction of the accessibility activities. The proposal is focused on I) Creating more labs II) Evaluating the educational effectiveness of the labs III) Creating more lab components including video interviews of individuals with the specifically discussed disability to provide further student motivation.

For the remainder of the semester, we have a WiC student refining the labs, ensuring that the instructions are clear and that the labs are without technical problems. The WiC student is also providing materials for the IUSE proposal submission. This includes any images, or project modifications.

Heuristic Evaluation for Accessibility of Mobile Applications

Using a heuristic evaluation methodology, several mobile apps developed for Android were evaluated for potential accessibility issues. The checklist used was adapted from W3C's Web Content Accessibility Guidelines 2.0 (WCAG), applied to a mobile and handheld device context. The checklist targets the deaf or hard-of-hearing, people with low or partial vision, and people with dexterity issues.

We hired two WiC students to evaluate the mobile apps using the WCAG 2.0 guidelines. They evaluated popular mobile apps in the categories Social Media & Communication, Productivity & Education, Lifestyle & Entertainment, and Shopping & Finance. The analysis informed us of the most violated guidelines with respect to the existing accessibility problems in these mobile apps. The results were taken into consideration while creating and designing the MILK accessibility labs, so that the MILK labs will cover the WCAG 2.0 guidelines with the most violations.

1. National Technical Institute for the Deaf