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CS 590- Cloud Computing Systems for the Blind and Hearing Impaired

Project Proposal

Problem Statement:

The ability to distinguish between the various denominations of currency is imperative to use of cash for commercial transactions. However in the United States, blind and visually impaired people are left at a great disadvantage, since all US dollar bills are of identical size and have no tactile features. Therefore, no provision is made for them to distinguish between the US dollar banknotes.

Visually impaired people have resorted to various creative methods to distinguish between dollar bills, such as folding them into various shapes and sizes based on the denominations. However, these approaches still require complete reliance on another person to determine the value of the banknotes, rendering a visually impaired person vulnerable especially in an unfamiliar environment.

What needs to be done to solve this problem?

To develop a Smartphone (Android) application that enables blind, and visually impaired people to distinguish between US Dollar bills. An image of the banknote can be captured with the phone's camera, and subsequently sent to the cloud. The image will be matched against image database, and the associated text value of the denomination converted to speech.

Requirements: -

-Client application on Smartphone.

-Database of US dollar bill images hosted on the cloud.

-Application hosted on cloud for image matching.

What has been done?

 There are portable currency readers currently in use. They cost approximately $300 and many users claim "they are unreliable and difficult to use".[i]   A banknote is inserted into the reader and the denomination is read out to the user.

What have I done?
- Looking into Android programming
- Image-Matching Technologies.

References

i http://chfs.ky.gov/NR/rdonlyres/C0C94F58-4C04-455C-B3A6-DC2B1894B497/0/CurrencyIssuesfortheVisuallyImpairedApril2007.pdf

http://www.huffingtonpost.com/2008/05/20/court-paper-money
discrim_1_n_102760.html