# Introduction

# Problem background

-Elderly more disposable income but less access to the internet due to problems with hands etc.

-With time, more and more old people will be computer literate and will thus need to be able to access computers or the internet in particular.

-Common uses of the internet for the elderly: Shopping, email, banking, Skype etc.

-Larger problem: Finding a set of techniques that can be used to improve the usability of computers for the elderly.

# Investigation purpose and scope

-Use the web browsing as a means of determining a set of methods that can be used to improve the usability of the internet for the elderly. Beyond this, such techniques can be used to improve the general usability of computers for the elderly.

Main means of improving computer usage is the use of speech recognition. Issue with regard to speech recognition is: What sort of visual annotations and voice commands are most suited to the elderly

The primary area of investigation was the issue of whether or not numerical referencing (assigning numbers to links on web pages) would perform better or be less confusing to elderly uses over spoken link names (referring to either their name or a key word within a link name).

-idea that has a simple set easy to pronounce words will perform better.

-idea that numbers are less conducing than having to read out entire link name or specific words

# Requirements

## Fundamental requirements

Iteration 1

....

Iteration 2

...

Iteration 3

...

-Determine whether or not spoken link names or spoken links perform better

-Determine which is preferred by the elderly users

-Determine whether visual feedback or voice feedback is more preferable for the elderly (iteration 1, minor)

## Secondary requirements

-Determine the feasibility of having voice processed on the cloud instead of on local machines

# Success criteria

-get an indication of which voice referencing technique performs better for the elderly

-Get results that give an indication of the preferred means of controlling the web pages by voice

-Does visual feedback give some sort of improved performance or improve user experience?

# Constraints

-Cost: Constrained to use freeware tools.

-Time: Limited time to conduct tests and develop software. Lots of time required to train the elderly...

-Test subjects: The elderly are not always keen to currently conduct experiments on computers

-Health: Finding test subjects who have sufficient hearing, eyesight and intellectual consistency to conduct the test.

-Skill: Most elderly people are not computer literate

# Assumptions

-Assume that all test subjects are not computer literate. This meant that earlier tests had to be very sequential in nature.

-More complicated tests, complete guidance

# Investigation procedure

-construct basic test to derive basic preference

-conduct more specific tests to confirm previous results and elicit more specific user preference

-Conduct a test on a facsimile website which incorporates multiple features from previous tests in an attempt to gain a more qualitative assessment of user experience on this more complicated site.

# Sensitivity to test subjects

-Repetition limited to three times per mistake

-If individuals discomforted at any stage of the test, they were permitted to stop (some had heart problems)

# Ethics

# Tools

Free tools used.

-Initially, Eclipse was used to write the JavaScript and run the client code locally.

-Eclipse also ran very slowly on our machines

-unpredictably and problems that arose meant that an alternative had to be sought out. The loosely typed language of JavaScript meant the usual advantages of IDE’s are not really experienced...

-Chose to use Note++ to do syntax checking

-ran IIS server

-Version control: Used Git and Github to perform merges and backups

-Toggl used to keep track of the time spent on the project

# Group work and division

-Git

-from when Git was used (initial merge)

-Division

# Problems encountered

-Unpredictable behaviour with IIS

-Going through proxy server, vocabulary populated with unknown words

-Internet connectivity and the problem with testing. One of the tests had to be aborted

-Finding test subjects who were willing

# Time breakdown

-History with Toggl

-Due dates for different iterations

-Meeting deadlines?

-Meeting with supervisor?

# Results

## First iteration

## Second iteration

## Third iteration

## Interpreting the results

# Implementation

-Do on Sunday

# Critical analysis

## Tradeoffs

Problems

## Recommendations

-finding the key words within link names dynamically. Can this be done to an extent that will provide adequate clarity sufficient distance between words?

-What sort of words is commonly misinterpreted?

-trained speech engine to deal with elderly voice requirements

-Hand held activation?

-Futuere iterations:

-Automatic button pressing

-Numbering starts again for different sections (confirm whether people like it or not?)

-Colour calibration for links colour and link highlighting, setting confirmation settings

-Do all of this on another website? (more complicated?)

-Possibly extend from mock up to real website to test feasibility of methods in real applications (real websites)

# Conclusion

# Bibliography