SOFTENG 206 Software Engineering Design 1

Department of Electrical and Computer Engineering

Project

The project is a solo endeavour

Deliverables

Due Week 11, 11th October 2016, 9 am

1. The code for the project, plus a readme file with installation and basic usage instructions.

Due Week 12, 21st October 2016, 5 pm

2. A report which discusses the functionality, development and evaluation of the project.

NB, The class will be involved in the finalizing of the requirements and assessment of the project.

VOXSPELL: Spelling Aid

The project will involve developing a tool to provide real-time feedback on spelling. You will be using Java to create the user interface, Linux system calls to process the media files from the Java app, and the Festival speech synthesis system to provide the commentary.

Whilst the actual coding and design of the tool will take place in the latter part of the semester, preparation for the project will begin **immediately**. Table 1 below outlines the development process of the project.

Week	Activity
4-6	Lectures on graphics, begin implementation
5	Assignment 2 Linux with Java GUI
6-7	Lectures on audio and video manipulation
8	Assignment 3 on the prototype of VOXSPELL
9	Assignment 3 Presentation
11	Peer Evaluation of aids
11	BETA version of project due in (no submission-> automatically lose 20 %)
12	Report and final code for project due

Project

The project involves creating a Spelling aid, where words are “read” out by a speech synthesizer, and the user has to spell the word. Scores are taken for each list of words, and the personal score history for each listener is kept, as well as a record for the best overall score. The spelling list is compiled depending on the user's ability. The aid will have the ability to both automatically compile lists, and also enable a tester to input a spelling list. The features of the aid will include:

- A well designed graphical user interface,
- Help on how to use the different features of the tool,

- File searching abilities,
- Sound playback, both speech and music,
- Video and Audio Rewards,
- A scoring mechanism (which might include a timing function), including notification of personal bests, and over highest scores,
- It must run on Linux, in particular it will be tested in UG4 images.

When you design the aid you will need to keep the target user in mind, this will have a direct impact on the GUI which is the actual spelling interface. You need to **choose one** of the following three target user options:

a. A child user, aged 7-10.
b. A second language learner, young adult (18-25yrs).
c. An elderly user, as a game option on our Healthbot Robot.

Design Decisions

There are many choices you can make in regards to the graphical user-interface, and also in terms of how the information is displayed. Think carefully about these as you will be asked to justify them in the accompanying report. For instance you will need to consider the window design, the choice of colours for both the background and the plots. What kinds of menus are you going to offer the user, and what about button design? Will you have key short cuts? These are only a few of the decisions you will be making. What ever your decisions it is important to discuss these fully and justify them in your report.

VOXSPELL - The report details

Accompanying the code will be a report (approx 10-12 pages). The intended reader of this report will be the chief technical officer, who will be assessing whether your program, the VOXSPELL, is potential candidate for a marketable product. There is no need for you to address any marketing issues. The report will need to contain:

1. A user manual for the VOXSPELL,
2. Information about the features of the VOXSPELL, highlighting the design decisions made, for example the design on the Tester and Spelling interfaces, what is used for the graphics, what was the reason behind the choice of colours, etc. Be sure to justify all the approaches taken,
3. Details about who the intended users of the VOXSPELL might be,
4. Details about how the VOXSPELL was evaluated, both by yourself and peers. Include here such things as: comparisons to other systems (in your class and in general), what changes you would make to your aid as a consequence of the peer evaluations, and justify your reasons. You may decide no changes would be necessary, but you need to also justify these, also you should discuss what exactly has been evaluated and what has not.

Use of external code or information.

You may occasionally use snippets of code or information from other sources if you wish, but you MUST indicate where you have done so and reference the original work. The majority of both the program code must be your own. If you have included someone else's work without clearly indicating each and every usage, we will have to assume the intent was to pass the work off as your own, and take appropriate action.

Marking Schedule

Marks will be allocated for the project on:

- Functionality of the aid,
- Code Quality,
- Code Documentation,
- Development Documentation (written in the journal),
- Report,
- User Manual.

We will release the actual marking schedule of the project in week 9, after a discussion with the class.