# Softeng 206 Assignment 3 – Tatai! Number Practice

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# Prototype Description

Our prototype features a Java FX based GUI, with a focus on usability. The overall structure of the prototype is as follows:

The user selects the difficulty level they wish to play, then answers a series of 10 pronunciation questions. If the user incorrectly answers a question, they are given one more chance at answering that question. If the second attempt is also wrong, the question is counted as failed, and the user’s answer is compared to the actual answer for the user to see. After all 10 questions have been answered, a summary page is displayed. The summary page shows which questions were correctly and incorrectly answered, and states what the correct answer was for each case. The user is then able to replay this level or return to the main menu. If playing on the 1-9 level, and the user scores 8 or greater, they are given the option to play the next level also.

In designing the user interface, we aimed to make each scene of the prototype user friendly, by only having a small amount of clearly labeled buttons, and using the VBox class to ensure scenes were neatly organized, with each component vertically aligned in the center of the screen. This was done to reduce the screen clutter, and ensure there weren’t buttons or information which could be missed by the user. We also focused on allowing the user freedom to cancel a session and return to the main menu (if, for example, they accidentally selected the wrong level). This user control extends to allowing the user to hear their recording for each question, and re-record before submitting if necessary. This allows the user to be sure that incorrect questions are due to pronunciation, and not an unknown error with their microphone setup.

# Work Distribution

Between myself and Shane, we decided on splitting the assignment into two parts: the Gui & threading (including light logic such as generating the question list), and the voice recognition / HTK / Bash components. I worked on the GUI and threading parts, while Shane handled the HTK recognition and bash parts. Towards the end, we worked on certain parts together if one of us encountered issues we needed help with.

# Workflow / Version Control

For the most part, myself and Shane worked simultaneously on isolated components, as stated in the previous section. We used GitHub and Git for version control, but since we were working on separate parts, we had no need of using branching or many merges, since there were very few times where we would edit the same files at the same time.

# Reflection on partnership

I feel our partnership was very successful, as was the way we split the work between the two of us. Working simultaneously on separate components and then combining these parts through dependencies worked very well, and allowed us to work at our own individual paces, since coordinating dates and times when we were both free was quite difficult due to differing schedules, so this allowed us more flexibility. I feel that the amount of work done by each of us was quite even, and I have no complaints about working with Shane. Next time however, I believe we should make slightly more concrete plans about exact dependency structure in the planning phase, for example; exactly which methods will be needed and where they will be called.

# Design Justification

We reached the design decisions mentioned in the description through consideration of what we look for in a program as users ourselves. Furthermore, we considered that children may also be a target user for this program, and therefore the menus must be simplistic, while not allowing any unexpected sequence breaking. This led us to add features such as buttons being disabled until recording is finished, so that users – particularly children – do not try to submit answers when the program has not finished recording – thus preventing errors. The simplicity of VBox appealed to us, as a vertical button layout increases simplicity, and does not confuse users. Another simplicity-focused feature was the decision to make buttons such as “submit” invisible until a recording is made, so that users are not confused by the supposed option to submit, when they have not yet recorded an answer. In addition to the above, we also focused on allowing the user a reasonable level of control, such as the ability to cancel a session and return to the main menu any time aside from recording or playing a recording. Aesthetically, we tried to strike a middle ground between appealing to adults and children, with a muted brown color scheme (reminiscent of Maori woodwork), and light Maori patterns in the background and one of the fonts.