SoftEng 206 Report: TĀTAI ASSIGNMENT 3

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Introduction

For assignment 3 we created a program called Tātai. Tātai is a GUI application which tests users on their pronunciation of numbers in Te Reo. This test comes in the form of a basic game. This game asks the user to pronounce 10 numbers (either between 1-9 or 1-99 depending on the level) and gives them feedback depending on how well they did. In the end, the user gets a score out of 10. The user's stats are kept and can be accessed from the main menu. These statistics include total questions answered, total incorrect, total correct and average score. The app we designed is intended to be lightweight, stylish and easy to use.

Processes

Team Work

We started off by delegating some tasks. Buster was assigned to doing GUI templates and HTK and I was assigned to doing the Stats Handler and GUI styling. We decided the rest should be done collaboratively. During numerous meetings, we both started working on our respective tasks. Generally, what would happen was Buster would get an initial working product and then I would refactor and tweak to improve upon the design. Whilst this was not always the case, it is a general process which occurred somewhat naturally. This approach of more shared responsibility allowed us both to be more familiar with what was going on in each other's code and led to a lot of the classes coming from a collaborative effort.

Version Control

For version control, we used { HYPERLINK "https://github.com/" }. We made sure to make frequent commits and that the commits were done on the right branch. This ensures we have a comprehensive version history and a good idea of who did what if any issues were to arise. We also made sure to make new branches whenever we wrote code which could potentially break what was in the master branch or what the other person was working on. We used 7 branches all up (including master).

Design Decisions

All our design decisions were based on a vision involving simplicity and user experience. We approached the GUI design with material design principles in mind. To help accomplish this we used JFoenix, a 3rd party library for JavaFX which introduces new FXML elements. We mainly used this to improve our buttons.

In terms of colour pallet, we chose a pastel range of colours. For our main theme, we chose a grey / red colour scheme. We chose this as it resembles the Māori flag. We then chose to generate random colours for the Game Window for each question. This was to make a more engaging game experience. We also have the whole screen go red or green depending on whether the user got a question right. This was intended to easily convey feedback to the user.

We also put a decent amount of thought and planning into the back end. We did this to ensure we have an extensible program in an object-oriented sense. We figured that it was best to put in the work now and therefore make life easier for any additions we need to make for assignment 4.

Conclusions

Successes

First, and foremost, I think our greatest success was our final product. Ultimately, we produced an application which looks great, is easy to use, is functional and is easy to build upon for future versions. I think we met all our goals for assignment 3 and am very happy with the final product.

I think we had a good group dynamic and excellent communication. We had a lot of meetings and group work sessions where we put our ideas to each other and worked collaboratively. We spent a good amount of time planning our code structure and GUI layout. This paid off as it gave us a shared understanding of what we wanted the final product to be. It also meant we had a clear path to follow at each stage in the development process.

Areas for Improvement

We did a good amount of planning; however, this planning could have been enhanced if we had done some more research beforehand. There were two instances where this lack of research resulted in some issues.

The first issue came about when it came time to package up our program in a jar file. Here we found that the HTK part of our code did not work with our current implementation. This turned out to be a greater issue than we first anticipated and caused some stress close to the assignment due date. This could have been avoided by using Java libraries and/or frameworks to handle recording and reading the files.

The second issue we realized was the way we were storing stats. Currently, we are storing our stats in a CSV file. After some research, we discovered it could be better to store this information in a serializable object or a database of some kind.

Both issues we hope to remedy in assignment 4. Thanks to our good design they should be very easy to implement. We are also looking to add and enhance a number of other features. This includes increasing recording time for level 2, having better colour contrast for the Game Window and adding some extra error checking. These issues can be seen under issues on our repository.