

A thick green vertical bar runs down the left side of the page. A green arrow points to the right from the bar, containing the date.

2017 27th Oct

Tātai!:

Te Reo Maths Aid

User Manual

A stylized green grass graphic with several blades of varying heights and colors (light green, medium green, dark green) growing from the bottom left corner.

Suying Shen & Grace Meng

Tātai!: Te Reo Maths Aid – User Manual

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Installation

Thank you for choosing Tātai, the dedicated education application for Māori numerical pronunciation! Before launching this application, please be aware that testing has also been run in only Linux System with HTK, JavaFX installed. We take no responsibility if the application failed to run in another system environment.

JavaFX Setup

The JavaFX platform is required for this application. If your system currently does not have this installed, please install by typing the following command into Terminal.

```
sudo apt-get install openjfx
```

Language Setup

Our application is able to run in two languages; English and Chinese. Please be aware, users who choose to use Chinese version of this application will first need to check that the Chinese language support package has been installed. Please follow the following procedures to do so.

Check Language System Package:

1. Go into System Settings from the top left of the screen
2. Once in System Settings, click on Language Support
3. Once in Language Support, check whether “汉语 (中文) ” is present in the list
4. If Chinese is present in the list, this means you already have the package installed and ready for the next step
5. If Chinese is not present, please click on the “Install/Remove Languages” button below, and then choose Chinese from the new list. Then press Apply.
6. The installation process should take a short time. Once complete, you are all set to go

How to run

Please download the zip file of this application and unzip it to your working directory. Please check the unzipped files contains the bank folder and the HTK folder.

You can run this application by opening terminal, and go to the working directory containing the file “Tatai.jar”, and then type in the following commands:

```
java -jar Tatai.jar
```

Before you start, please also make sure your microphone works fine.

Now you are ready to run this application! Enjoy!

First Time Launch

The entry point of this application is the login page (shown in figure 3 below) which manages the multi-user entry system. You can also change the language from here.



Figure 3 Login page

Upon your first launch, there would be no existing users. You would be required to create a new user before continuing. This could be done by clicking the add button (shown in figure 2 below)



Figure 2 Empty User List

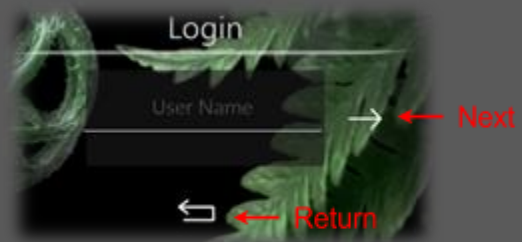


Figure 1 Create New User

Once the add button is pressed, the list switches to a text field where you could enter the name of the user you wish to create (shown in figure 1). Please NOTE, username could only contain alphabets and numbers. Special characters and spaces are not permitted.

Press the "Next" button to continue when you have entered the username. (shortcut key: press Enter also has the same function as the button)

Next time you launch this application, you will see the user from the login page list. To login to an existing user, select the user and then press continue (shown in figure 4).



Figure 4 Delete User

To delete a user, select the user and then press delete.

Welcome to Tātai!

Once user has been selected/created. User will be directed to the main page of this application (shown in figure 5 below).

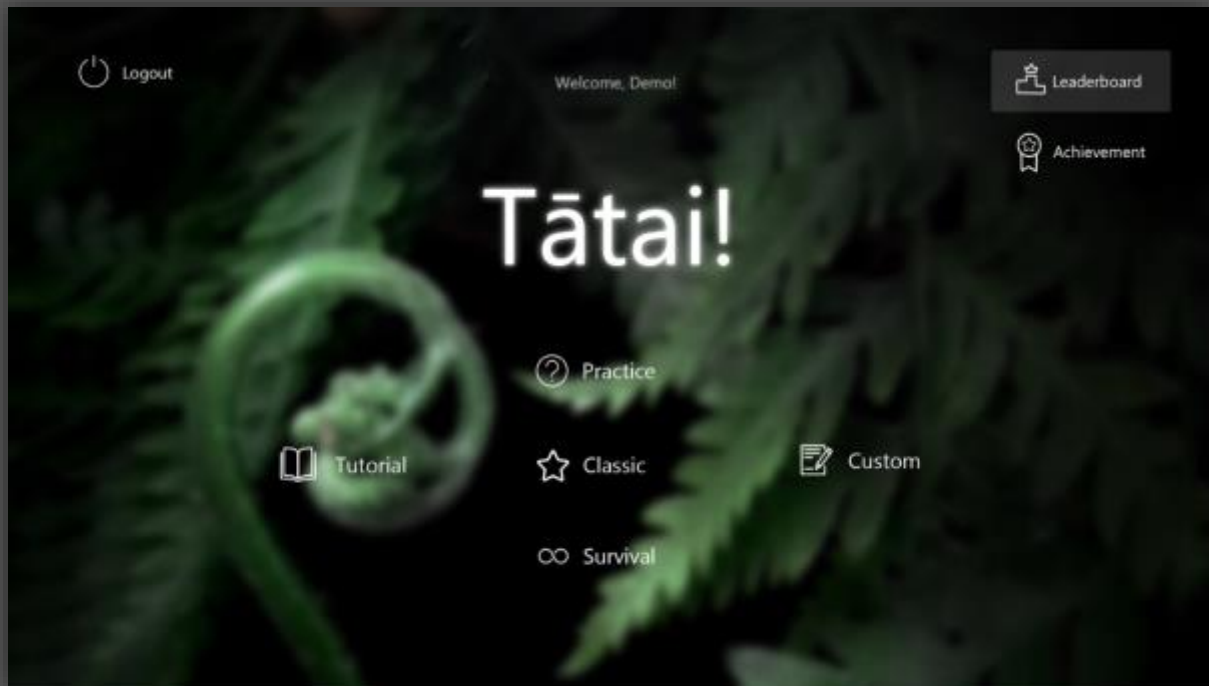


Figure 5 Main Page

There are several options to be explored here. Details of each of the options will be introduced later in this manual.

- Tutorial
 - Basic introduction of how to use this application
- Practice
 - Practice pronunciation of Māori Numbers from 1 to 99
- Classic
 - 15 challenging levels ranging from easy to advance
- Survival
 - Exciting endless mode to challenge your limit
- Custom
 - Create your own customised question suite, and share it with other users
- Leaderboard
 - Compete against your friends and other users
- Achievement
 - Check your highest records and achievements
- Logout
 - Logout current user and go back to the login page

Tutorial

Tutorial displays the basic instructions for this application. The user is able to navigate through the pages by pressing the arrow keys on the grey bar as shown in the figure below.

The return button on the top left leads the user back to the main page.



Figure 7 Tutorial 2

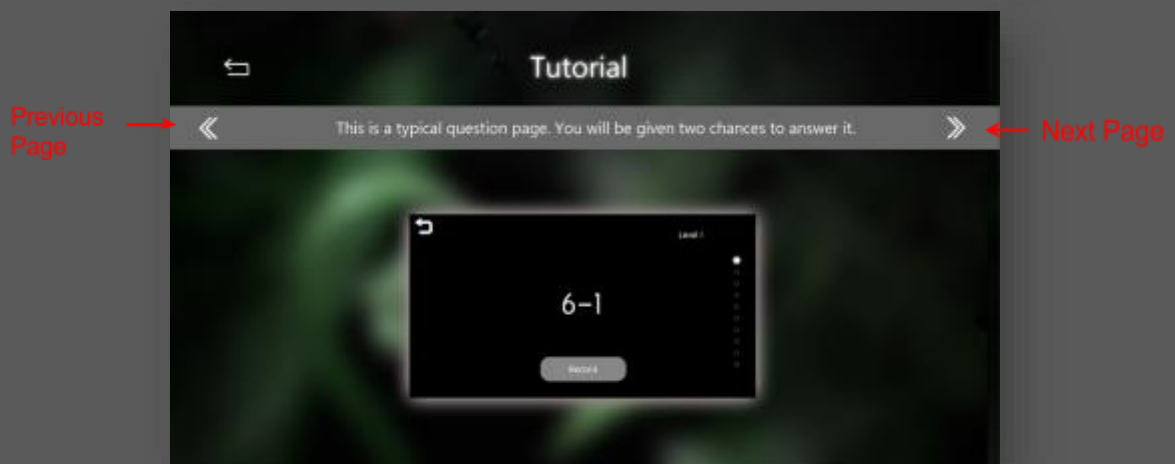


Figure 6 Tutorial 1

Practice Mode

Upon selecting the practice mode, the user will be directed to the practice menu page as shown in figure ## below.

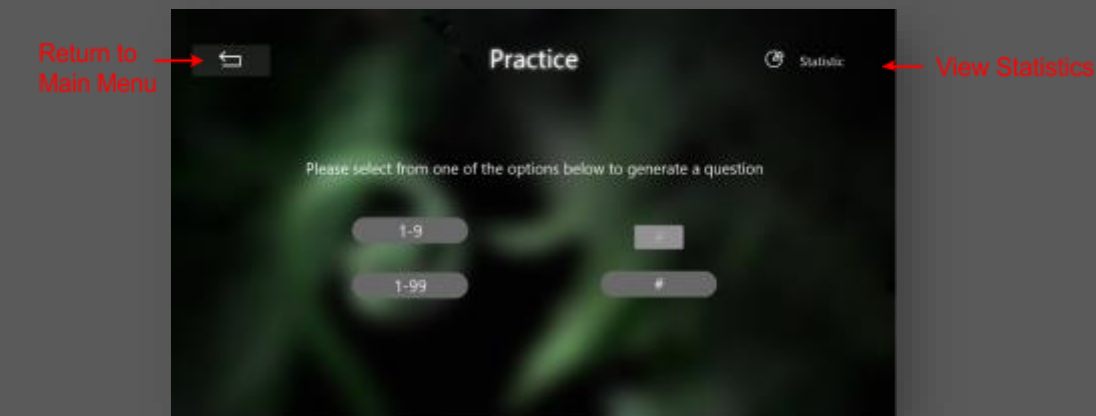
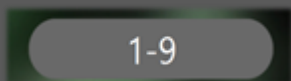


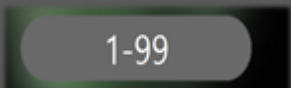
Figure 8 Practice Page

Practice Modes

There are three options from the practice mode:



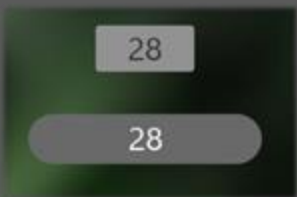
1. Randomly generate a number between 1 to 9



2. Randomly generate a number between 1 to 99



3. Customize and pick the Māori number the user wishes to practice by entering it into the text field shown in the figure on the left. The input must be a number between 1 to 99. If the input is not within the range, the button will be disabled and displays "input undefined" until user changes to an acceptable number. Once the user has entered a valid number, the button



is also updated to display the input. The user could start the question by pressing the button with number (as shown in the figure below)

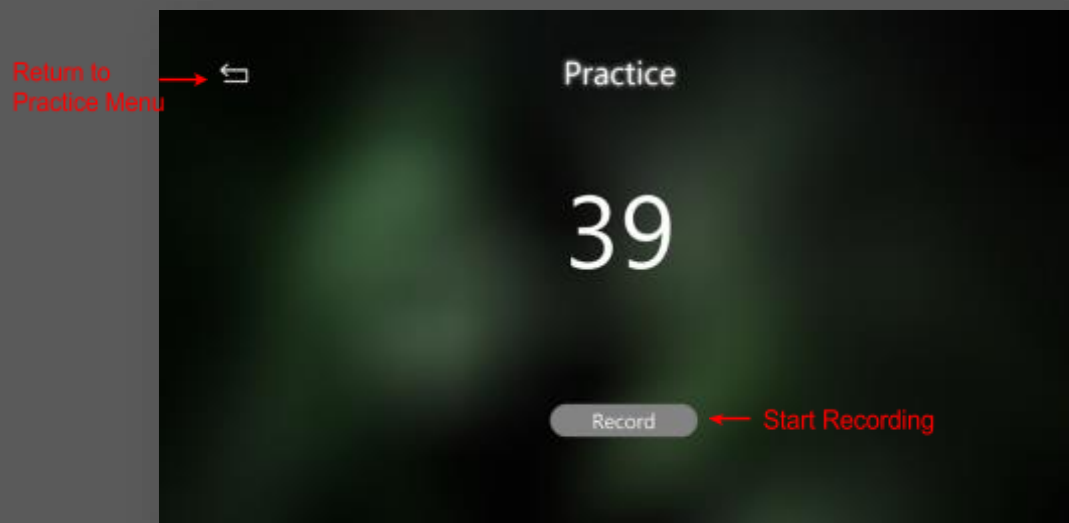
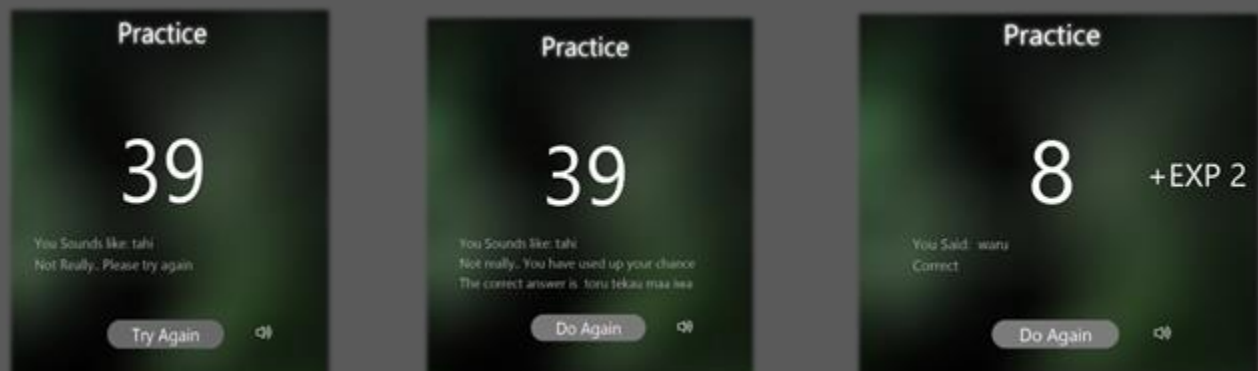


Figure 9 Practice Test

Once a number has been generated/selected, the user is then lead to the question page. To answer the question, user needs to press the “record” button and would then be given 3 seconds to read it in Māori.



After the 3 seconds, the result of your answer will be displayed. There are three possible outcomes as shown in figure 8 above.

Figure 8-1 displays the screen when your first attempt on the question is incorrect. An approximation to what you may have said is given. The user will have a second chance to record a new answer by pressing the “Try Again” button.

Please note that when the message displays “Nothing was recorded”, please check your microphone connections before continuing.

Figure 8-2 displays the screen that shows when user’s second attempt to answer a question is yet incorrect. By this stage, the user has used up their attempts, and the correct answer is displayed. “Do Again” could be pressed to repeat this question.

Figure 8-3 displays the screen that appears when you correctly answer a question. “Do Again” could be pressed to repeat this question. At the first successful attempt of saying a number, you will be awarded 2 EXP points.

Statistic page

Note every time the result is displayed, button that links to the statistic page appears for user to keep track of his/her progress. Upon entering the statistic page, the pie chart on the right is initialised to display the overall ratio of correct attempts and total number of attempts on all numbers from 1 to 99.

The two tables on the left displays the 5 most well-done numbers and 5 numbers that need more practice on. User could get a graphical representation of a particular number in the table by selecting that specific row. The pie chart will then switch to display data on that specific number.

User can switch the pie chart to display overall information by clicking on the label on top of the two tables with the text “Overall: Correct... Incorrect...”

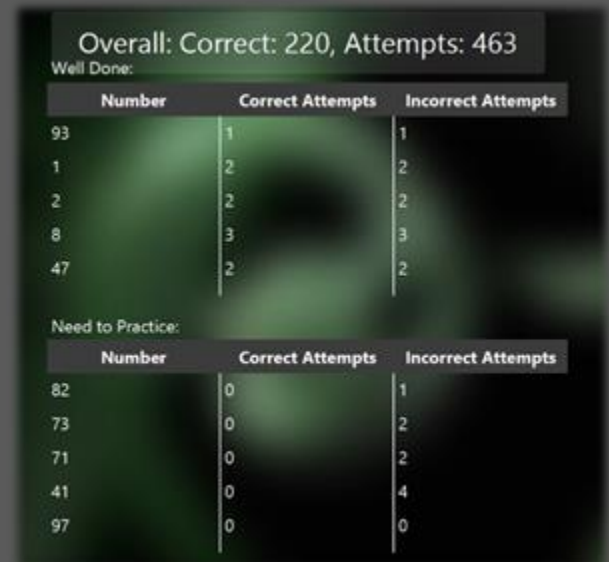


Figure 10 Well Done Numbers and Need To Practice Numbers

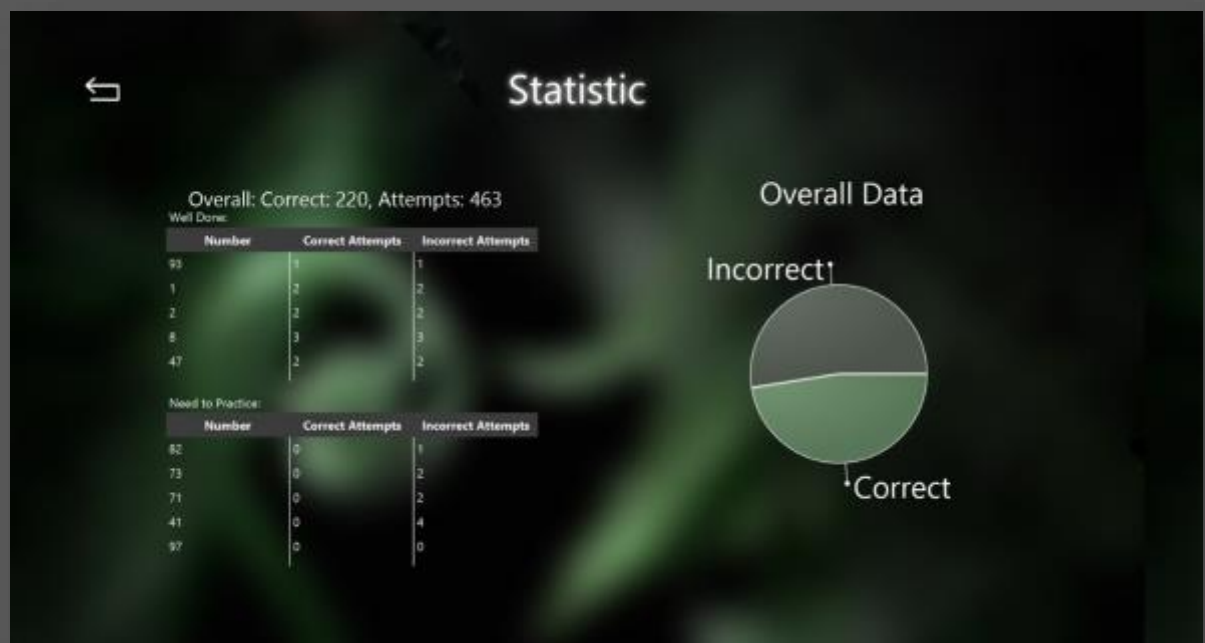


Figure 11 Practice Statistic Page

Classic Mode

There are a total of 15 levels within classic mode (shown in figure 6 below). The levels range from easy to advance, level 1 being the easiest, and level 15 the most advanced.

Each level contains 10 questions. You will be given two attempts for each question. Figure 7 below shows what a typical question would look like.

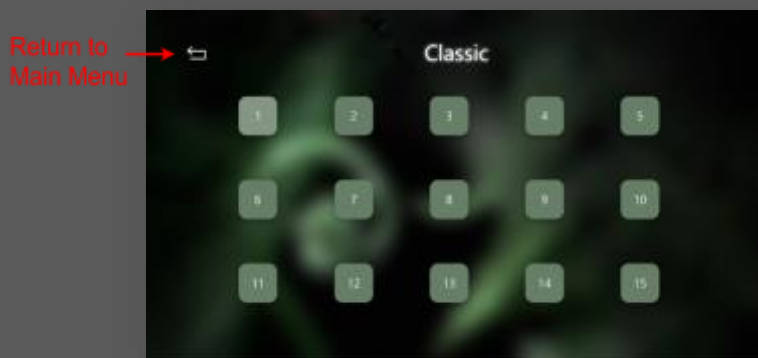


Figure 12 Classic Menu

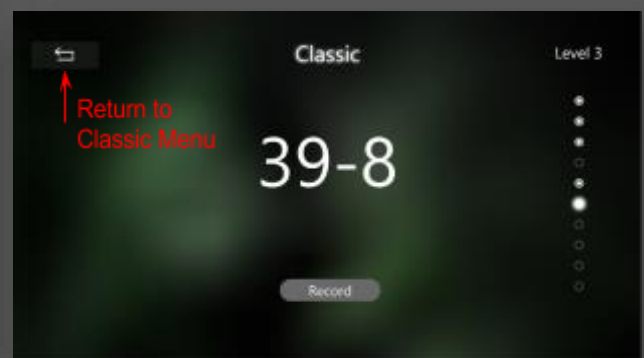


Figure 13 Classic Question

Answer Question

Similar to the practice mode, to answer a question, press the “record” button to start recording. User will be given 3 seconds to record the answer of this question in Maori.



After the 3 seconds, the result of your answer will be displayed. There are three possible outcomes as shown in figure 8 above.

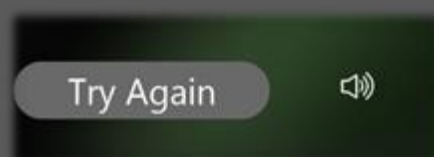


Figure 14 Play Button

A “Play” button also appears every time showing the result to a question (see figure 9). User could press this to hear their previous recording.

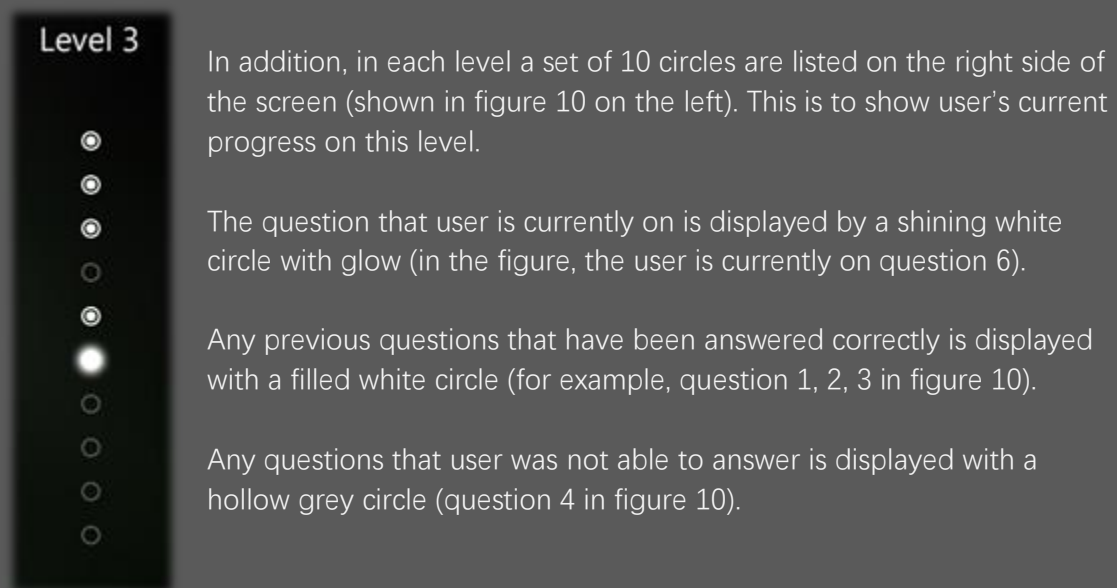


Figure 15 Indication of Right or Wrong

Types of Questions

There are different formats of questions.

Fundamental levels (1 ~ 11) contain only arithmetic questions represented in digits.

As level increases, digits are replaced with numbers written in Māori to increase difficulty.

Level 15, the hardest level, consists of word questions that would require critical thinking and calculations. Figure 11 shows all the types of questions in classic mode.

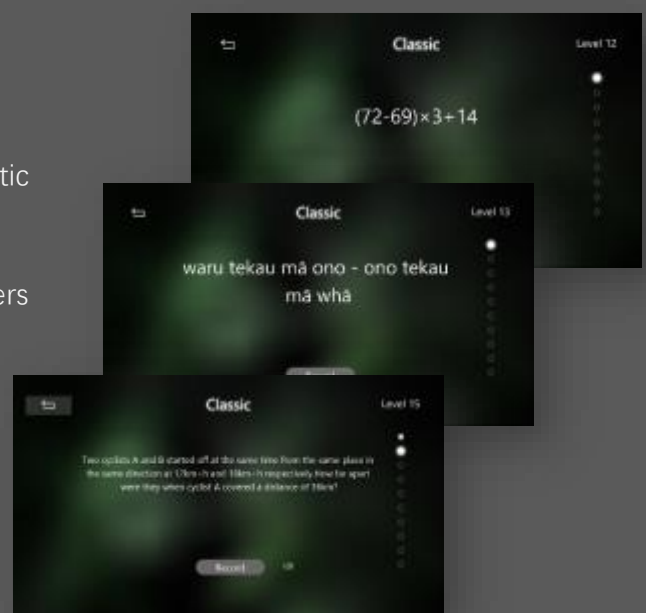


Figure 16 Different Difficulty Levels in Classic Mode

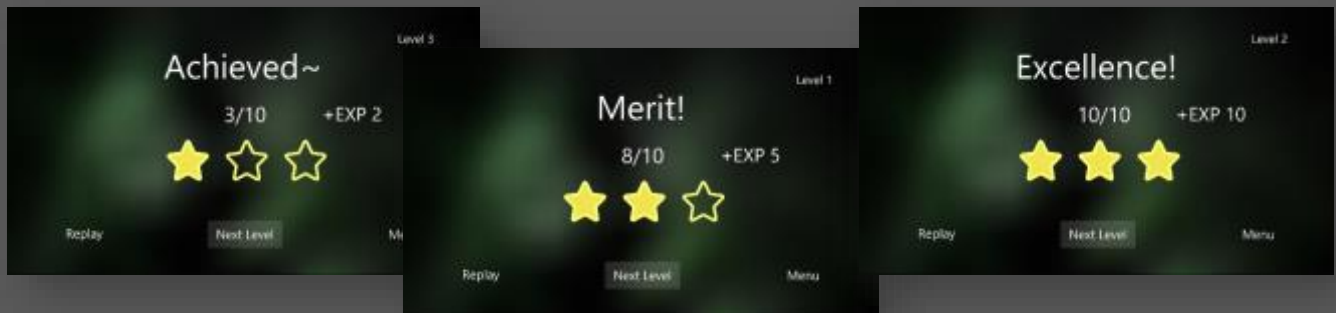


Figure 17 Classic Awards

At the end of each level, feedback is given to user as how well they performed in this level. Stars are given to each level based on the best result. (*EXP points will be explained later in this manual)

- 0 - 2 questions correct: 0 star, no EXP point*.
- 3 - 5 questions correct: 1 star, 2 EXP points*.
- 6 - 8 questions correct: 2 stars, 5 EXP points*
- 9 - 10 questions correct: 3 stars, 10 EXP points*.

Figure 17 above shows screens with different number of stars and EXP points. Figure 18 shows the class mode menu page once the user has completed and earned stars on some of the levels.

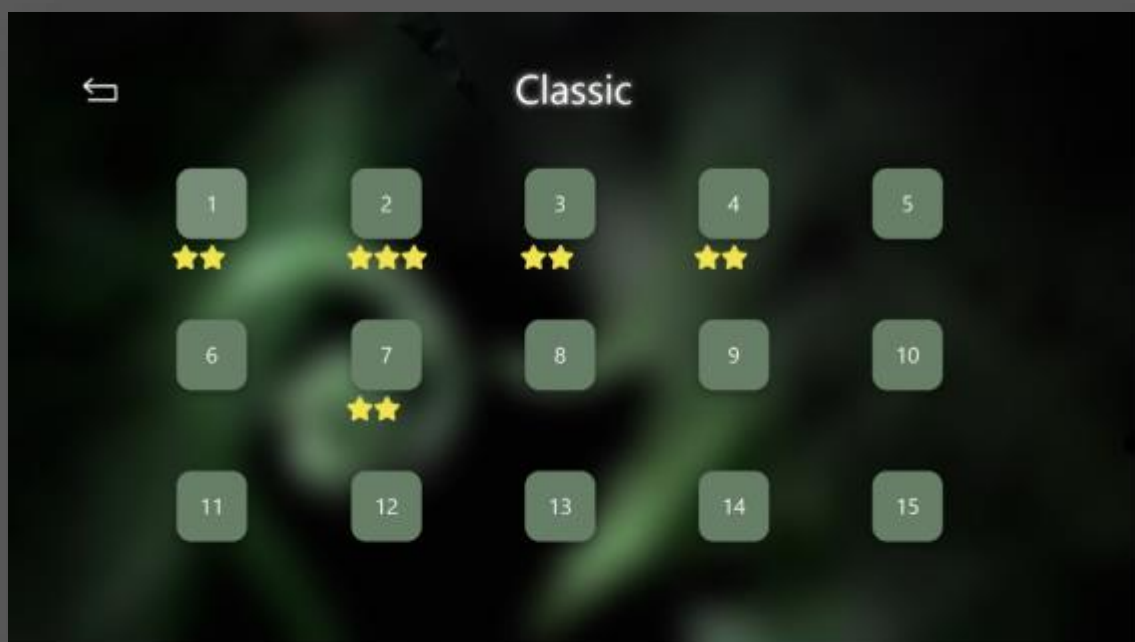


Figure 18 Classic Menu with Stars

Survival Mode

Upon Choosing the survival mode, the user will be directed to an instruction page that explains some of the basic features (as shown in the figure below).



Figure 19 Survival Instruction

Survival mode contains endless number of questions. The questions are continuously generated until the user loses all three lives. As the user progress, the difficulty of the questions also increases.

As seen in the figure below, hearts and scores are displayed on the top right corner of the screen. For every question the user answered correctly, the score would increase by one. For every question that user answered incorrectly, one of the three lives is detected, and the score remains unchanged.

Different from answering questions within the classic and practice mode, the user is given only one attempt on each question to increase difficulty.

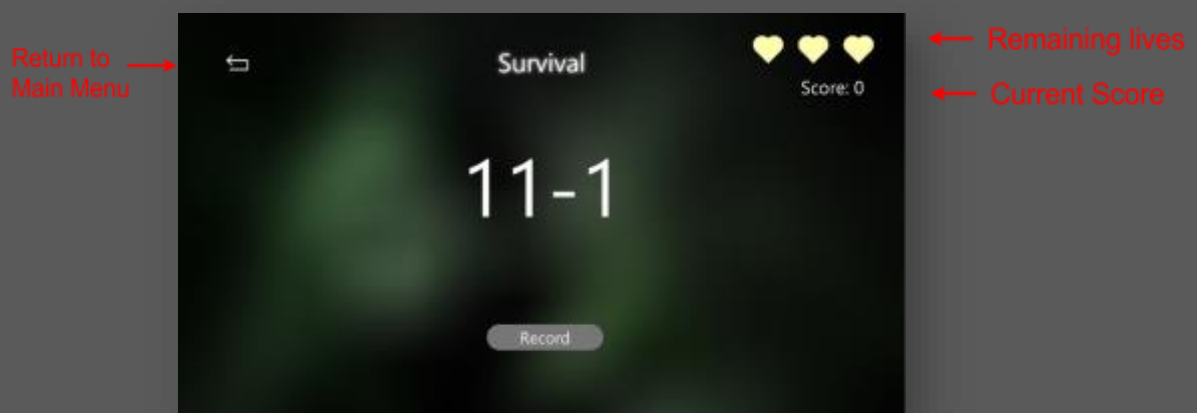


Figure 20 Survival Game Page

When the user runs out of all three lives, the game ends.



Figure 21 Survival Game Over Page

If the score is better than all previous records, the best score would be updated, and a notification message is displayed (as shown in the figure below).

Also note that the user could gain user EXP points from the survival mode as well. The EXP points are calculated as following: (details and purpose of EXP points will be explained later in this manual)

- question 1 - 10 1 point for each question
- question 11 - 25 2 points for each question
- question 25 above 3 points for each question.

Custom

Custom mode allows user to create their own question suite, or do question suites created by other users.

Upon choosing custom mode, a table is presented to the user as shown in the figure below. This table contains all the question suites that have already been created.

Note how there are two tabs called “public pool” and “private pool”. The user could switch between them. Public pool contains all the “public” question suite, whereas the private pool contains user’s own “private” question suites. Details of the difference between “private” and “public” will be explained a bit later.



Figure 22 Custom Page

To do the questions within a question suite, the user would need to first select the question suite from the table, and then press the “do question” button. The user will then be directed to the test page, and will be given two chances on each of the questions.

Deleting a question suite works in a similar manner. The user need to first select the question suite, and then press delete. A warning window would then appear to confirm with concern. If the user confirms the action, then the question suite is deleted.

Add Question Suite

To create a new question suite, press the add button at the bottom of the table. The user will then be directed to the create screen as shown in figure # below.

← Create Question Suite ?

Description ☒ Public

Equation Add

1+1 delete

Create

Figure 23 Create New Custom Question Suite

To create a question suite, the user is required to enter some description of the question suite, decide whether to make the question suite public or private, and add question(s).

When a question is made “public”, this question suite would be able to be accessed by all the users. On the other hand, “non-public” (private) question suites could be accessed by the user created it only.

Each question could contain 1-10 question(s). The user would not be able to create the question suite unless all the mandatory fields have been filled.

← Select Question Suite ?

Public Pool Private Pool

ID	Author	Description	Number Of Questions
840000	Clara	This is a demo of private custom mode	8
840001	Clara	This can have multiple question suites	1

→ Do Question ⊕ Add ⊖ Delete

Figure 24 Select a Question Suite from the Custom List

Leaderboard & Achievement

Leaderboard

User could check their progress via the leaderboard and achievement pages.

Figure ## below shows the leaderboard page with some users inserted. There are a total of three leaderboard: the EXP leaderboard, the Star leaderboard, and the Survival leaderboard.

- EXP leaderboard based on user's EXP point
- Star leaderboard based on the number of stars user collected

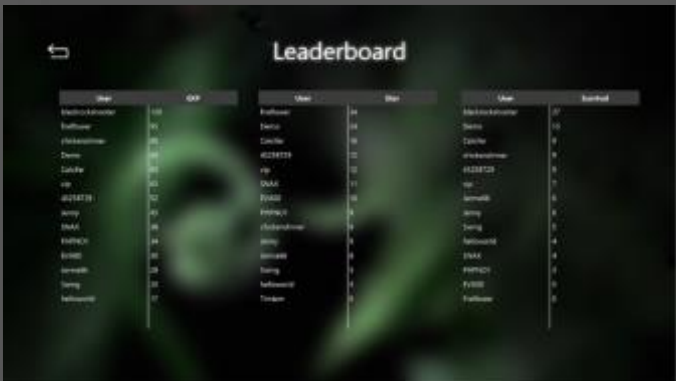


Figure 25 LearderBoard

- Survival leaderboard based on user's highest score in survival mode

Achievement

The achievement page shows information and records of the current user.

The three icons on left respectively represents the number of stars collected, high score in survival mode, and EXP points earned so far.

On the right-hand side, there are 8 achievements medals to be collected by the user. Once the user has met the requirement of a medal, the medal is collected; shown with a gold star. (user has collected the first two medals in the figure below). Uncollected medals are shown with a question mark.



Figure 26 Achievement Page

EXP System

The EXP system is adopted throughout this application. Its existence gives user a good understanding of their progress and encourages user engagement into the learning process.

EXP point could be collected through several ways:

- In classic mode, user is given 2 EXP points for completing a level with one star, 5 EXP points for completing a level with two stars, 10 EXP points for completing a level with three stars.
- In survival mode, user is given 1 EXP point each for the first 10 questions, 2 EXP points each for question 11 -25, and 3 EXP points per question for question 26 and onwards.
- In practice mode, the user is given 2 EXP point on their first successful attempt on a number, so there are a total of $2 \times 99 = 198$ EXP points in total to be collected.