

TATA!

USER MANUAL

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Preface

Thank you for choosing to play Tātai! - a Māori pronunciation tool with the sole aim of improving your confidence in:

- answering a range of mathematical equations and,
- number pronunciation in Te Reo Māori.

Tātai! features a graphical user-friendly interface, whose core functionality stems from its integration with the HTK Speech Recognition tool. Users are tested on their ability to solve mathematical equations ranging in difficulty from simple to complex, and then pronounce their answer in Te Reo Māori.

Tātai! serves as a learning tool that provides feedback to the user regarding their Māori pronunciation, and gives them an opportunity to hear and/or redo their pronunciation attempt.

We hope you enjoy Tātai! just as much as we enjoyed developing it.
- Eugene & Shane

First Time Launch Instructions

The Tātai! user interface was designed using JavaFX. As a result, please ensure that you have JavaFX installed on your Linux distribution, which can be done in a terminal window using the following command:

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

To run the program (using the terminal):

1. Navigate inside the folder containing the Tātai!.jar file.
2. Add executable permissions to the .jar file, using the command:

```
chmod +x Tātai\!.jar
```

3. Run the .jar file, using the command:

```
java -jar Tātai\!.jar)
```

Logging In

On start-up, the application prompts users to log-in before they can proceed. The 'hassle-free' log-in feature does not require users to sign-up or enter any form of password – instead, all that is required of the user is that they choose a valid username. A valid username is one that contains only letters, spaces and numbers.

The purpose of the log-in feature ties in with the **High Scores** functionality, which is part of the **Play Maths Questions** game mode. Each user's highest score, as a percentage, is recorded for each game level according to the username they enter in this log-in step.

For more detail on how the users' high scores, and each of the game modes are designed, please refer to the relevant sections in this manual.

Main Menu Screen

Once a user successfully logs in, they are first shown the main menu:

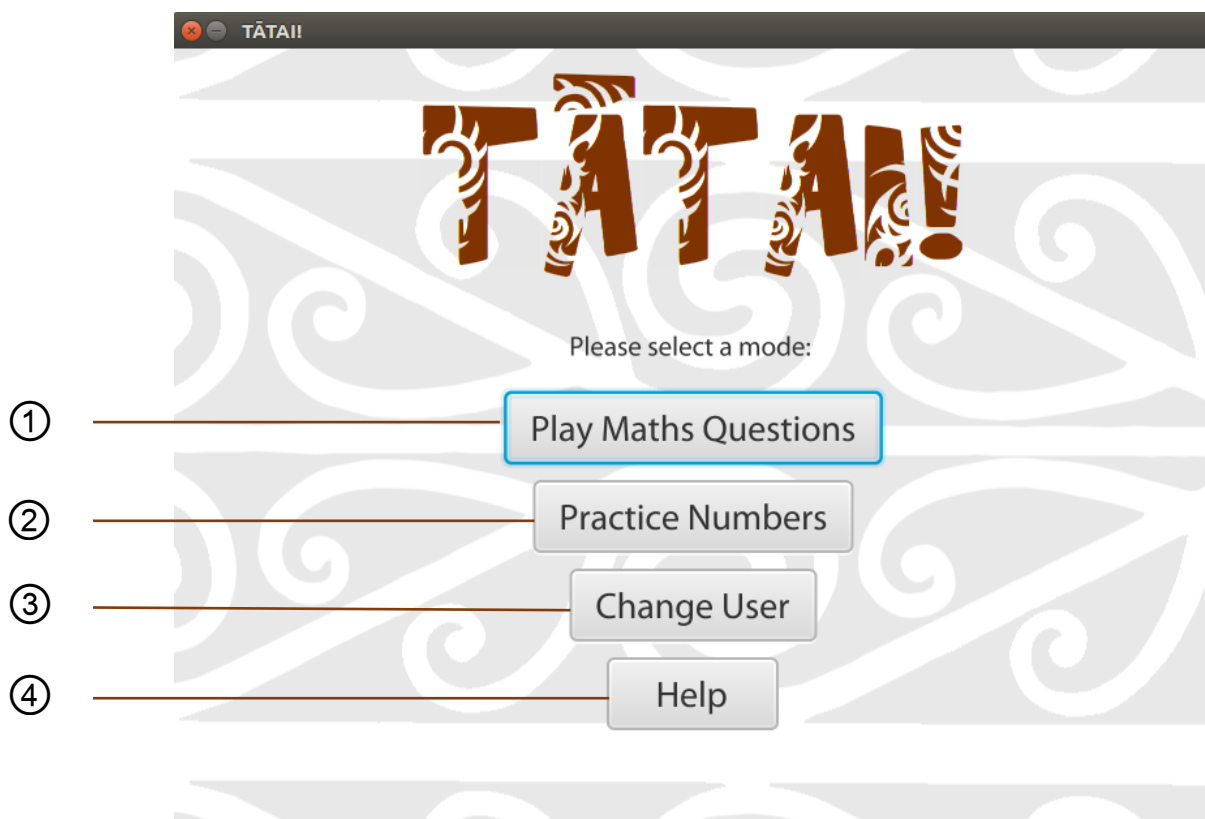


Figure 1: The Main Menu screen.

①, ②, ③, ④ details shown on next page.

- ① The **Play Maths Questions** button lets the user customize the way in which they want to play the Maths game mode (i.e. Play New Questions, or Play Saved Questions).
- ② The **Practice Numbers** button lets the user choose what range of numbers they wish to practice their Maori pronunciation on (i.e. numbers 1-9 or numbers 1-99).
- ③ **Change User** allows the user to change the current username that their logged in as, and takes them back to the log-in screen.
- ④ The **Help** button brings up a brief summary informing the user on how to play Tātai!.

Game Modes

Tātai! offers two game modes – **Practice Numbers**, and **Play Maths Questions**.

- **Practice Numbers** serves as a tool to increase the users' confidence concerning their Te Reo Māori pronunciation of numbers between 1-99.
- **Play Maths Questions** forms the 'game' aspect of Tātai!, and involves the user having to solve ranging difficulties of mathematical equations/sums, and say their answer in Māori

Practice Numbers

Upon clicking **Practice Numbers**, the user is given the choice to begin a practice session with numbers ranging from either 1-9, or 1-99. During the session, the user will need to attempt the Māori pronunciation of 10 randomly generated numbers within the user's chosen range. Once the user completes these 10 questions, they are shown a summary of their scores, which clearly highlights their correct and incorrect responses.

Play Maths Questions

The **Play Maths Questions** game mode differs from the **Practice Numbers** game mode in that it instead features mathematical equations rather than numbers for each question. The equation however, will still equate to an integer between 1 to 99. Unlike **Practice Numbers**, this mode lets users choose the amount of questions that a given session will present on the screen. The number of questions the user can set is between 1-10, inclusive. In this mode, users can also choose to play from a custom created list of questions, as well as view their current high scores before they begin the session.



Figure 2: Options before initiating a Practice session (left) or a Maths session (right).

Gameplay

The following controls available to the user during a typical **Practice Numbers** session are shown below:

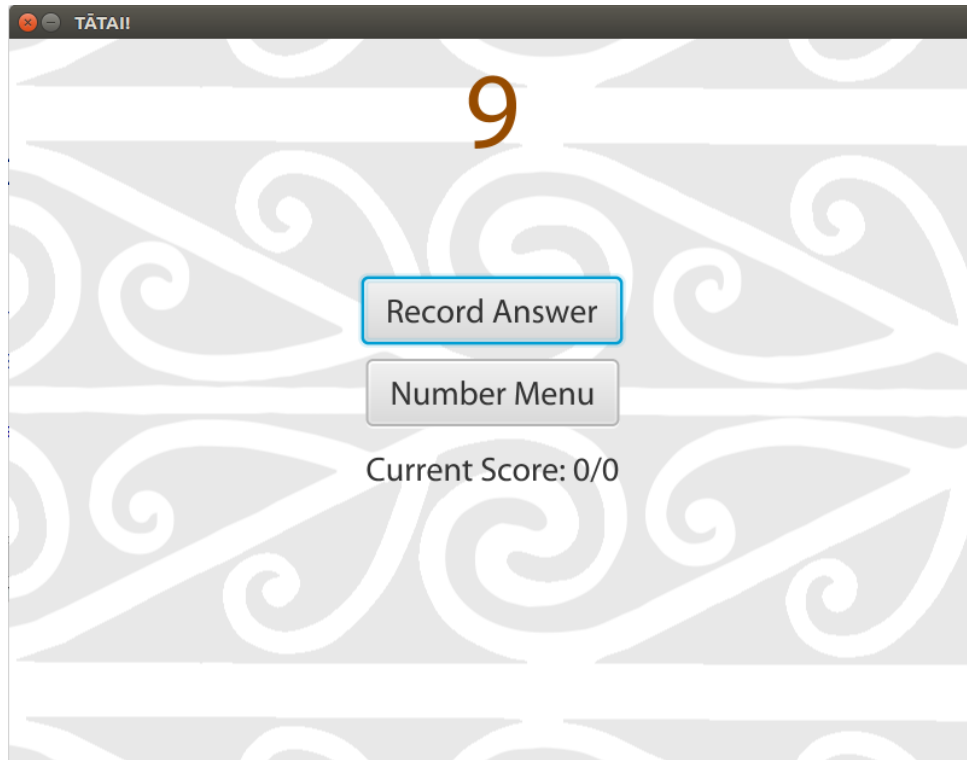


Figure 3: A typical Practice Numbers session screen

Users should familiarize themselves with the options provided to them during a session – *Record*, *Re-Record*, *Hear Recording* and *Submit* to submit their pronunciation attempt when they are happy with it.

Recording and Hearing your attempt

When the user is presented with a new question (or equation), they will receive the options as shown in Figure 3. Once the user feels prepared to pronounce the answer, pressing the **Record** button will give them **three** seconds to complete pronunciation attempt. They are given the following further options once they have completed their first attempt:

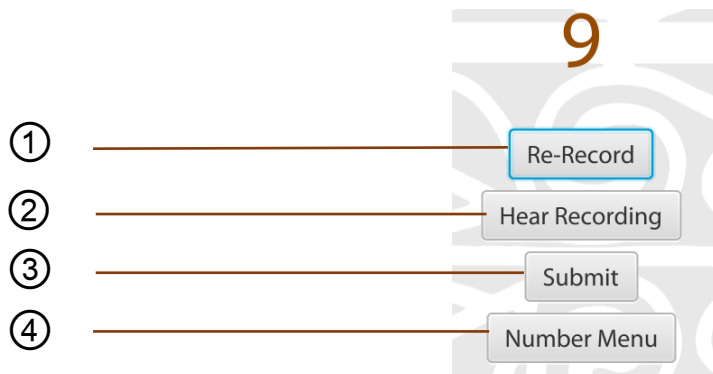


Figure 4: Further options available after the user's first pronunciation attempt.

- ① If the user is unhappy with their pronunciation attempt, they can choose to **Re-Record** their pronunciation as many times as they wish before they choose to submit their attempt.
- ② After recording their pronunciation attempt, **Hear Recording** lets the user listen to their attempt by playing a corresponding audio file.
- ③ Once the user is happy with their attempt, they can choose to **Submit** their answer, and the application will provide feedback on the correctness of their attempt.
- ④ The **Number Menu** button simply exits the current session and returns to the previous menu screen, which in this case, is the menu screen of the **Practice Numbers** game mode.

When recording an attempt and hearing the recording, the application tells the user what exactly is happening ‘behind-the-scenes’ through the use of the following progress bars:



Figure 5: Indication of recording or hearing a recording activity.

Both the progress bars run for exactly three seconds.

Ensure that when choosing to **Record**, **Re-Record** or **Hear Recording**, these activity progress indicators are visible. If they cannot be seen while recording or playing, please refer to the common problems/troubleshooting section of this manual.

Score Summary Screen

After a user completes either a **Practice Numbers** or a **Play Maths Questions** game session, they are shown an outline of their attempts for each question.



Figure 6: A typical Score Summary screen from a Practice Numbers session.

- ① This indicates the total score, out of the number of questions played (10, in the case of a **Practice Numbers** game session).
- ② A breakdown of the user's attempt at each question, clearly indicating the correct Māori pronunciation of that particular number, as well as whether or not the user got the question correct.
- ③ This is the **Play Again** option. After the **Practice Numbers** game session, clicking this button will repeat the level on which they user initially chose (i.e. either numbers from 1-9 or 1-99). After a **Play Maths Questions** game session, the application will replay a game session pertaining to the user's current level. However, if they level up during this session, clicking this button will begin a session in a higher level. For more information regarding the **Level System**, please refer to the relevant sections of this manual.
- ④ By clicking this button, users can return to the menu that lead to this session, which in this case, is the **Practice Numbers** menu.

Custom Equations

As part of the **Play Maths Questions** game mode, users are given the opportunity to create their own equation list, save that list, and play a session based on the new created list. This is done by first clicking the **Saved Questions** button whilst in this game mode. Doing so gives users a view of all created equation lists from all other players (including themselves). Upon selecting a custom created list, the user can choose to begin a game session based on the equations in that list (by clicking **Play Selected List**), or delete the selected list (by clicking **Delete Selected List**).

Creating your own Equation List

Clicking **Create New List** should bring up a screen showing the current questions in that list, as well as options to add new questions or exit the **Create New List** screen. Adding a new question to your custom list (by clicking **Add Question**) will bring up the following screen:

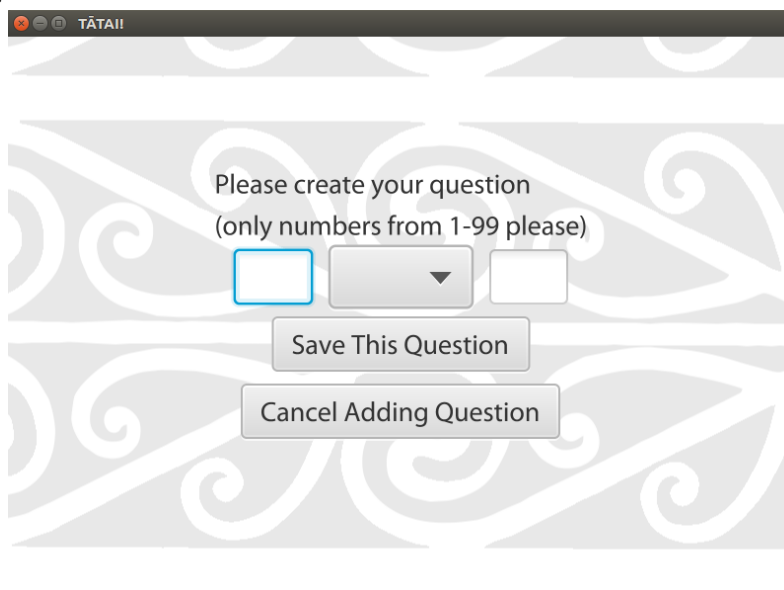


Figure 7: Adding a new equation to your custom list.

While in the **Add Question** screen, users are able to enter an equation of the form $(x) \circ (y)$, where the \circ represents an operation; either add, subtract, multiply, and divide, and the numbers 'x' and 'y' are to be inserted into the editable text field (highlighted in blue in Figure 7).

NOTE: The numbers 'x' and 'y' must be at most two digits, and integer valued, and the solution to the resulting equation **must** be an integer between 1-99 before submitting it as a valid question in the custom list.

Once the user is happy with their equations, as well as the number of equations in the custom list, they can then click **Save Creation**, and create a name for the list, which is visible to all players of Tātai.

Level System

In Tātai, each user has a particular skill level. This level is used primarily when users choose to begin a new **Play Maths Questions** session. This game mode will generate equations pertaining to the user's skill level, which can range from Level 1 to Level 3, as highlighted below:

Level 1

The questions in Level 1 are of the format

$$A + B, \text{ or}$$

$$A - B.$$

Scoring 80% or higher in Level 1 will mean that, in the next **Play Maths Questions** game session, the user will be presented questions from Level 2.

Level 2

The questions in Level 2 include the questions in Level 1, with the addition of two new formats:

$$A \times B, \text{ or}$$

$$A \div B.$$

Scoring 80% or higher in Level 2 will mean that, in the next Play Maths Questions game session, the user will be presented questions from Level 3.

Level 3

This is the maximum level available in Tātai!. Questions in this level are of the following format:

$$(A \circ B) \circ (C \circ D)$$

The numbers A, B, C and D are integer valued and range from 1 to 99 inclusive.

High Scores

The **High Scores** feature is available within the **Play Maths Questions** game mode. A typical **High Scores** screen is shown below:

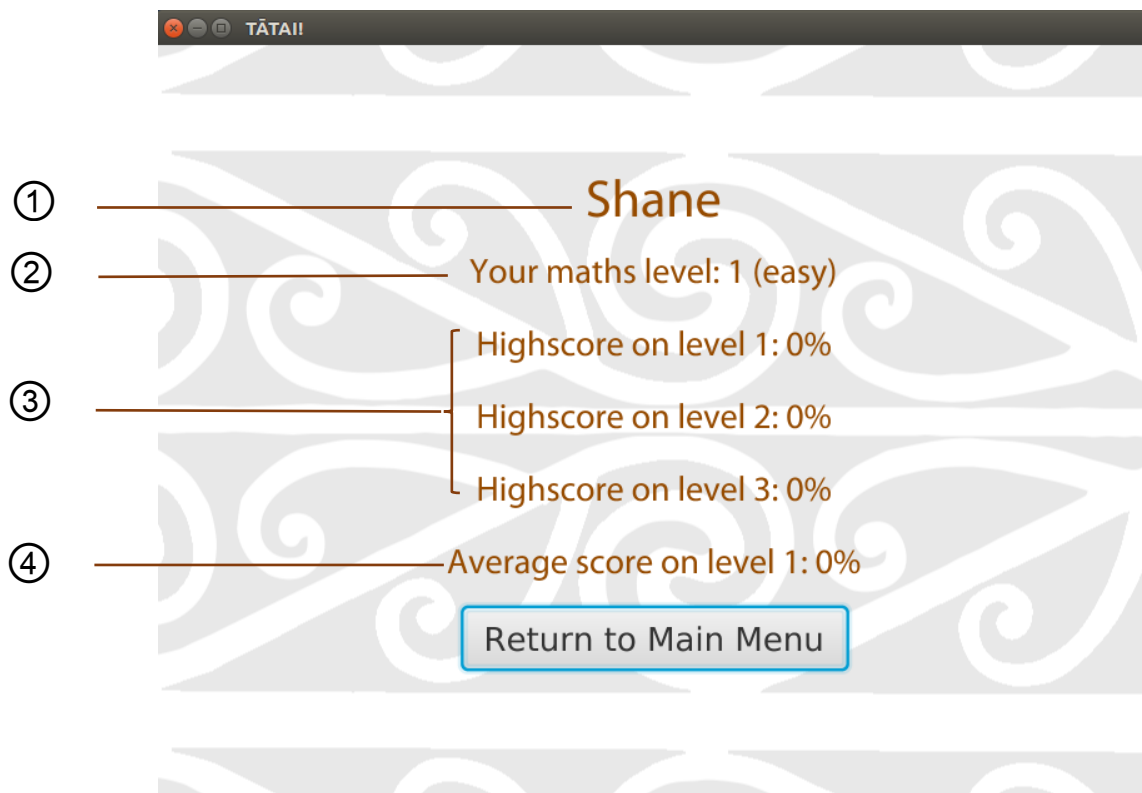


Figure 8: A typical High Scores screen for a user named 'Shane'

- ① This label indicates the current user logged in. The high scores below this username correspond to the high scores pertaining to this user only.
- ② This is the user's current skill level, ranging from Level 1 to Level 3 (as explained under the Level System section of this document).
- ③ These scores represent the highest score, as a percentage (of current questions answered), for each level that the user has attempted.
- ④ This label represents the average score, once again as a percentage, of the users attempts on questions of their current skill level, which in this case, is Level 1.

At the conclusion of a game session, the user's high score, if need be, is updated and the user is notified if they have reached a new milestone (i.e. beating their previous high score).

Common Problems & Troubleshooting

Recording and Playing Audio

It may be the case that, upon recording (using the **Record** or **Re-Record** buttons), or choosing to play audio files (using the **Hear Recording** button), users may find that the recording or playing process ‘skips’ – or doesn’t happen.

POTENTIAL SOLUTIONS

- Ensure that the Tatai! Folder containing the .jar file has the following contents:
 - ‘HTK’ (folder)
 - ‘Tātai!.jar’ (file)
- Ensure that you are running the .jar file on a Linux distribution, as it is required to run commands in a Bash script.