

Software Engineering Group Project User Interface Specification

Author: Ieuan Boucher,
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Department of Computer Science
Aberystwyth University
Aberystwyth
Ceredigion
SY23 3DB
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1. INTRODUCTION

1.1 Purpose of this Document

The purpose of this document is to describe the typical users of the application that has been created to help English speakers learn Welsh. Secondly all the use cases each type of user will have. Finally, the error conditions that can occur in the program's use. This document will enable any person to gain knowledge of how the application has been designed with consideration for multiple users, all with different needs and use cases. By detailing each use case it allows for an in depth understanding of how and why decisions were made in designing the user interface.

1.2 Scope

This document describes the typical users of the system, the use cases they will have, and the error cases that could occur. Specifying information that future developers can use to influence decisions and aid designing additional interfaces in accordance to SE.QA.04.

1.3 Objectives

The objectives of this document are to illustrate:

- Typical users
- The use cases for those typical users
- The error conditions that could occur in those use cases

The document provides aid to future and current developers by providing useful knowledge on how the interface was constructed with consideration to a range of users.

2. TYPICAL USERS

2.1 Jane

Jane is a student studying GCSE Welsh. Jane is an active learner, learning best through tests. She has previously studied a bit of Welsh, but she must now learn a lot of new words with only little time before her final exam. Using the Welsh vocabulary application, she adds the words that will be useful to her to the practice list then challenges her knowledge using flashcards and tests. After she feels confident with the words, she attempts to obtain the perfect score on several tests in a row, she then learns from the feedback the application gives.

2.2 Bill

Bill is a single father of 2. After hearing his children communicating in Welsh easier than English. Bill decided to learn at least the basics of Welsh. He added basic words to his practice list and every time he hears his children talk in Welsh, he searches or scrolls through the main vocabulary to find some of the words, using this to figure out the context of their conversations. This is easy with the built-in search, narrowing words he is looking for by typing in the initial letters. He asked his kids to help him with his goal, they have a lot of fun together when they are testing his knowledge using flashcards or tests, slowly increasing Bill's Welsh vocabulary.

2.3 Elaine

Elaine is 60 years old and has recently moved to Wales. She has enthusiastically picked up a couple of Welsh words from hearing them to then look them up on the application. Elaine is not proficient at the language yet as she just moved to Wales, only recently starting to learn Welsh. She has a lot of excess time as she has recently retired. She wants to be more connected with the community so spending time learning the language is important to her. She uses the application's flash cards and tests to challenge herself. Elaine puts all the words she is currently learning in her practice list; this makes it so she can easily access and find them. When she has learned the words, she takes them out and replaces them with new ones.

3. USE CASES

3.1 Looking up a word

There are two methods of look up a word. Firstly, from the start page the user can directly search for the word using the search field, typing the word that is to be looked up. The second method, from the start page the user can sort the dictionary to match their language of choice, scrolling through until the user finds the word.

3.2 Add words to dictionary

From the start page, the user selects the “ADD WORD” button making a popup window appear. In this window there are 2 textboxes. Type the English word in the first box and the Welsh word in the second. To select the class of word (noun, verb etc.), you press the combo box field and select a type from the pre-sets. Lastly you press the “ADD WORD” button.

3.3 View flashcards

From the start page, the user navigates to the practice list by selecting the “PRACTICE LIST” tab. From here the user selects the “FLASHCARD” button which will make a small window appear. This window is split into two cards: The first card is a word from the practice list. The second card is hidden and says, “Click to reveal” once selected the card will reveal the translated word. After the user clicks it, they can press the “NEW CARD” button to draw another flashcard.

3.4 Take multiple choice test

From the start page, the user navigates to the test tab and selects the “MULTIPLE CHOICE” button. This will start the test. A randomly selected English word will be displayed on a large white panel near the top of the body. There are 6 buttons below the panel, random meanings in Welsh are assigned to 5 of the buttons, the last button having the correct meaning corresponding to the word in the top panel. If the word selected is correct, then the box will turn green. If the word selected is incorrect, then all the incorrect boxes will turn red and the correct box will turn green. A new question will be displayed after a certain amount of time has passed.

3.5 Take translation test

From the start page, the user navigates to the test tab and selects the “TRANSLATE” button. This will start the test. A randomly selected English word will be displayed on a large white panel near the top of the body. Below the panel is a textbox which the user will type their translation to the corresponding word in the top panel. The “SUBMIT” button will check their translation. If the translation is correct a green colour will be displayed, if incorrect red will be displayed.

3.6 Take match word test

From the start page, the user navigates to the test tab and selects the “MATCH WORDS” button. This will start the test. 4 randomly selected Welsh words from the users practice list will be displayed in the dark grey panels to the left. Next to each dark grey panel is an empty light grey panel, this will eventually display the word that the user drags into it. On the right there are 4 white panels which contain the English translations of the randomly selected Welsh words. At the top left of the body is the users score, this will increase by matching the correct English and Welsh words. The user can click and drag the white panels into the light grey areas to match the words. The “CHECK ANSWERS” button will check if the user has matched the words correctly. If a word is matched correctly the corresponding panels will turn green, if they are incorrect then they will turn red. A new question will be displayed after a certain amount of time has passed.

3.7 Take full test

From the start page, the user navigates to the test tab and selects the “GENERATE FULL TEST” button. This will start the full test. The full test is a combination of all the application’s tests. Displayed inside a dark grey box is the number of the current question, the user can track their progress through the test using this. The users total score is displayed when the test is over. Underneath the total score there is feedback, displaying correct and incorrect questions.

3.8 View practice list

From the start page, the user navigates to the practice list by pressing the “PRACTICE LIST” tab.

3.9 Add words to practice list

To add a word to the practice list, the user first finds the word they want to add using one of the search features explained in *Use Case 3.1*. The user then adds the word to the practice list by selecting the green plus icon to the left of the word.

3.10 Remove words from practice list

To remove a word from the practice list, the user first navigates to the “PRACTICE LIST” tab explained in *Use case 3.8*. From here the user finds the word that they want to delete and selects the red minus icon to the left of the word.

3.11 Changing language

To swap the primary and secondary language used in sorting, flashcards and tests. The user needs to toggle the button found on the top bar of the main dictionary, or practice list between the corresponding words "ENGLISH" and "WELSH". When the primary language is set to English (default) dictionaries are sorted by English words, flashcards have English words revealed and Welsh hidden, you are given English words in tests while welsh ones have to be selected, typed in or connected. When Welsh is set at the primary language everything is flipped.

4. ERROR CONDITIONS

- **User doesn’t enter data for one or more attributes of a new word.**
 - Resolve by not adding the word to the data, and providing user with an error and feedback on which attributes need to be filled in.
- **User enters exact duplicate of an already existing word**
 - Resolve by providing an error message to the user informing them the word already exists, and not adding the word to the underlying data structures.
- **User’s search brings up no results**
 - Resolve by displaying no records in the table.
- **Word is not added to database after user input submitted**
 - Resolve by checking input and storage code and running tests with several examples of valid, edge case and incorrect user input.
- **User enters correct answer in test but is told they answered incorrectly or vice versa.**
 - Resolve by checking input and storage code and running tests with several examples of valid, edge case and incorrect user input.
- **User attempts to remove word from practice list without selecting a word**
 - Resolve by preventing the “remove” button from being pressed unless a word is selected.
- **User attempts to run/access tests or flashcards with no words in practice list**
 - Resolve by providing an error message to user stating that they need to add words to their list before using these features.

- **User attempts to runs the word-definition matching test with fewer than 4 words in the practice list**
 - System informs the user that four or more words must be in the practice list to access this test.
- **User accesses a full test with fewer than 4 words in the practice list**
 - System does not include word-definition matching questions in the generated test.
- **User runs program with corrupted JSON**
 - Program provides user with an error message saying they need to replace the JSON file.

REFERENCES

- [1] Software Engineering Group Projects: Quality Assurance Plan. C. J. Price. SE.QA.01. 2.2 Release.
- [2] Software Engineering Group Projects: General Documentation Standards. C. J. Price. SE.QA.02. 2.3 Release.
- [3] Software Engineering Group Projects: User Interface Specification Standards. C. J. Price. SE.QA.04. 1.2 Release.

DOCUMENT HISTORY

<i>Version</i>	<i>CCF No.</i>	<i>Date</i>	<i>Changes made to document</i>	<i>Changed by</i>
1.0 Draft	N/A	11/02/20	Initial draft made	IEB7, KRB21, JAT69
1.1 Draft	N/A	25/02/20	Suggestions added to document in formal review meeting	SEC26, MAC127, BID1, SHW30, MAL102, LAB54, IEB7
1.2 Draft	N/A	25/02/20	Clarified typical user section	IEB7
1.3 Draft	N/A	25/02/20	Expanded use cases	IEB7
1.4 Draft	N/A	26/02/20	Expanded error conditions	IEB7
2.0 Release	N/A	26/02/20	First release version	IEB7
2.1 draft	N/A	05/03/20	Fixed formatting as per feedback from Chris Price	IEB7
2.2 draft	N/A	05/03/20	Merged KRB21's contribution into newly formatted document	IEB7
2.3 draft	N/A	31/03/20	Filled in typical users and added use case (edited) at the end	JAT69
2.4 For review	N/A	09/04/20	Completed the QA review, marking any changes in comments.	MAL102
2.5 Release	#19	27/04/20	Finalised for review.	MAL102