# Software Engineering Group Project
# Maintenance Manual

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Config Ref: SE_G17_MAINTENACNE_DOC
Date: 30th April 2020
Version: 1
Status: Release

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# Contents

# 1. INTRODUCTION

## 1.1 Purpose of this Document

The purpose of this document is to answer any potential questions that a maintainer may have about the software and refer to useful information in the design.

## 1.2 Scope

This document describes how changes or improvements may be made to the software and how to add tests for new functions and potential improvements.

## 1.3 Objectives

The objectives of this document are:

- Answer any questions about implementing new functions or improvements
- Where to find the necessary file for the software
- Explain the rules which the program uses to process the files
- Explain how new tests may be implemented

# 2. MAINTENANCE MANUAL

## 2.1 Program structure

The structure of our program is described in full in the design document we produced [1]. The programs flow is described in the design document [1] under 5.1, where the sequence diagrams can be found. Also, in the design document [1], is a list of classes (2.2) with a brief description of their purpose, and their methods with a brief description of each method to describe what its purpose is (4).

## 2.2 Algorithms

The most significant algorithms in this software are loading, searching, GuessTheWord, and flashcards. All of which are described with detail in the design document under point 5.2. [1]

## 2.3 The main data areas

These data areas are covered with detail in the design document [1] under point 5. For details of the data structures in the software refer to point 5.3 in the design document [1].

## 2.4 Files

The software requires certain JavaFX libraries and a json.simple-1.1.1 library; these files are provided with the software and can be found under uk\ac\aber\cs211\group17\Required Files. The JavaFX jar files are required to run the graphical user interface and are not necessary for the backend of the program. However, the json-simple-1.1.1 jar file is crucial for reading json files, which the software uses to store the dictionary itself and the words saved by the user. Therefore, this project needs to have access to two json files, which are both, stored in uk\ac\aber\cs211\group17\Assests. The first is dictionary.json and is used to store the English-Welsh dictionary. The format in which this is done is that the file consists of a json array, which holds json objects that represent words. Each object in this array has three attributes: English, which is the English translation of the word, Welsh which is the Welsh translation of the word, and wordType, which is the type of the word (e.g. "verb"). All of these attributes are of string type variables. The second file (practiceList.json) stores information in the same way however, the key difference here is that this file only stores word that the user has put into their practice list. Initially this file is empty.

## 2.5 Suggestion for improvements

In the project there are desired features that could not be implemented due to time constraints or sometimes lack of experience. A suggestion for an improvement for the program, would be in the match words game. It would have been more appealing to have the words connected via lines that the user can drag around to choose the word they think is the correct translation. The current iteration of this game changes the button colours based on which it is connected to, which works decently enough for now, but it would be much more intuitive and user-friendly to have these connected via lines. It would have also been desirable for the games to keep track of your score throughout playing, so that the user could track their progress by seeing their scores improve. Another suggestion for an improvement would be to have the program filter the input when attempting to add words to the dictionary so that the user cannot add any potentially harmful words/phrases.

## 2.6 Thing to watch for when making changes

If you are planning to use a different json file, then it must be in the correct format, which is described in 2.4 Files. To use a different type of file, such as tables from a database, there would have to be an alteration to loading data and saving data within the program. When making changes to the GUI, it is important to use the correct version of JavaFX, information of this can be found in 2.4 Files. This program was designed and built to run on a standard PC within the Department of Computer Science at Aberystwyth University, running on Windows 10.

## 2.7 Rebuilding and Testing

When rebuilding the program, you must make sure that all the of necessary files are included. See 2.4 Files for reference of where files should be found. The Main.java class is where the project should be built from. All of the necessary .java and .fxml files are to be found in src\sample.

All documents for this software use standard MS word format in line with the QA standards for this project. For testing the unit tests will be provided with the software and can be found in uk\ac\aber\cs211\group17\tests. These tests are written in JUnit 5. These test each method for each class. In the case of a new problem discovered or a new function being added to the software, the new test can be implemented using the standard JUnit 5 format. For more detail on the tests refer to the testing document for this project which contains the tests used during the development. In the case of new tests needed these need to be added the document [2] with a specified input and output and a pass criterion. Since these tests were done manually there is no need to implement a new test anywhere but rather done manually In the case of using automated testing this would require the new test to be implemented there, in addition it would be recommended to implement all the other tests too for efficiency.

# REFERENCES

[1] Software Engineering Group Projects: Design_spesification.pdf. Group 17. SE_G17_DESIGN_DOC. 1.0 Release
[2] Software Engineering Group Projects: Testing_document.pdf. Group 17. SE_G27_TEST_DOC. 2.0 Release

# DOCUMENT HISTORY

| *Version* | *CCF No.* | *Date* | *Changes made to document* | *Changed by* |
|---|---|---|---|---|
| 1.0 | N/A | 30/04/20 | N/A - original version | bas21 |
| 1.1 | N/A | 30/04/20 | Added to sections | brb19 |