Software Engineering Group Project
User Interface Specification, Use Case Document

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Config. Ref.:	GP01-UIS-UCD
Date:	2018-02-01
Version:	1.3
Status:	Release

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1 INTRODUCTION

1.1 Purpose of this Document

This document describes the main use cases of the system. It should be read in the context of the Group Project, taking into account the JoggleCube Requirements Specification [1]

1.2 Scope

This document covers who the typical users of the system are, their needs, use cases and any errors they may come across.

The document should be read by the developers working on implementing the system.

1.3 Objectives

This Document aims to:

- define who the users of the system are.
- identify their specific needs.
- explain the use cases of the system for each type of user.
- identify possible error conditions and what is to be done about them.

2 Typical Users

2.1 Second Year Computer Science Students

As described in the JoggleCube Requirements Specification [1], these users are familiar with standard software tools, and with WIMP software. They are by default, quite lazy, and so the software should provide the indicated features with the fewest possible mouse movements and keystrokes.

2.1.1 Typical Second Year Computer Science Student

2.1.1.1 John Doe

John Doe is a student at Aberystwyth University who loves to spend his time lazing around in bed and gaming when he is not sitting in lectures playing games on his laptop trying to look interested. He enjoys puzzle games to keep his mind occupied and currently plays Boggle religiously against the same grid trying to find more and more obscure words. He currently struggles to get the same grid over and over again and has to keep track of the score on a separate txt document from the game. He would love it if this could be automated and he could challenge himself against the same grid multiple times.

2.1.1.2 Patrick Butcher

Patrick Butcher is a student at Aberystwyth University who enjoys challenging his friends. He'll challenge them to beat his high scores on various games. He would love a game where he can challenge his friends by simply sharing a high score table, that they can load with ease and see his high score.

2.1.1.3 Faith Berry

Faith Berry is one of the few girls studying compsci at Aberystwyth University and likes new and interesting challenges, so instead of playing repeatedly against the same board, Faith would like to play against a new grid each time and have an overall high score table, to see how many points she scored compared to previous games.

2.1.1.4 Lyle Johnston and Francis West

Lyle and Francis are both students at Aberystwyth University. They are both very competitive and love challenging each other in different games. Both Lyle and Francis are colour-blind, although they have different types of colour-blindness (Lyle has Protanopia, also known as red-green colour blindness, while Francis has Tritanopia, blue-yellow colour blindness). Therefore, not only do they need their games to a have colour-blind friendly option, but for that option to be suitable for all types of colour-blindness.

2.1.1.5 Rhys Evans

Rhys is a student at Aberystwyth University . He has come to Aberystwyth from another part of Wales and would like to play JoggleCube in Welsh.

3 Use Cases

3.1 Second Year Computer Science Students

3.1.1 Play against a new Grid

The user will click the Start Game button and a new grid will be generated for the user to compete against. A text input dialog will be displayed to allow the user to enter their name. They will now be able to play the game (please see use case: 3.1.3).

3.1.2 Compete against a saved grid

The user will click the load Grid button and a screen will be displayed where the user can select a saved grid from a list of recently saved grids. Once that has happened the user can click the start grid button to load the grid. A text input dialog will be displayed to allow the user to enter their name. They will now be able to play the game (please see use case: 3.1.3).

3.1.3 Playing the game

The user will be faced with a cube with the 27 letters in a 3x3x3 grid. Space for the words that the user has found, a tab pane for the different grid views, a bar to display the current word, a submit and clear button and a menu icon. There are also two labels to show the time left and current score. The user can then repeat these actions until the timer runs out.

3.1.3.1 Cube rotation

The user will be able to rotate the cube by holding the right mouse button and moving the mouse.

3.1.3.2 3D/2.5D/2D views

The user will be able to switch between 3D/2.5D/2D views of the JoggleCube by selecting the revelant tab on the top of the game screen.

3.1.3.3 3D View exploding

The user will be able to click on a button to explode the 3D view cube in order to view and click the middle block.

3.1.3.4 Finding a Word

The user can select letters by clicking on the relevant boxes on the cube with the mouse, to build up a word. They can then press the confirm word button to check that is it a valid word. If it is valid, the button will change to a different color and the word will be added to the found words list, the score will be added to the current score and the input box will be cleared ready for the next word. If it is not a valid word the word preview box will go red, the user may then change the letters to try alternative words.

3.1.3.5 Displaying the score

The current game score will be displayed in the top right hand corner of the screen.

3.1.4 Ending the game

The user can finish the game early before the timer runs out by clicking the exit game option in the context menu or the timer will run out.

3.1.5 Save Score

Once the user has ended the game their score will be automatically saved to both the overall highscores, if the grid being played was loaded in, their score will be saved alongside that grid also.

3.1.6 Save Grid

If the user would like to replay a grid they must save the grid by clicking the save button which will allow them to save the grid to file by selecting a file name in the dialog box.

3.1.7 View Overall high score

From the home screen the user can press the high scores button to view the current overall high scores.

3.1.8 View Grid High score

Click the load grid button on the home screen then a screen will be displayed where the user can select a saved grid from a list of recently saved grids. Once that has happened the user can click the high scores icon to view the high score for this grid.

Or when a user finishes the game the user can view the high scores for that grid and have the option to save their score to the high score table(see 3.1.5 on saving a score).

3.1.9 Finding help

From all screens in the game the user can click the help button to bring up a helpful guide on how to play. Whilst playing the game they will need to go to the context menu to get to the help option.

3.1.10 Changing Grid Language

The user can select the language to play the game in from the home screen from a drop down

4 Error Conditions

4.1 Start view

4.1.1 Description

The Start view contains 5 buttons which navigate to the various features of the JoggleCube application. They are as follows:

Start New Grid: This will begin the game with a new grid(see 4.6).

Load Grid: This will navigate to the load view (see 4.2).

High Score: This will navigate to the high score view (see 4.3

Settings: This will navigate to the Settings view (see 4.4).

Help: This will navigate to the help view (see 4.5).

4.1.2 Possible errors

Due to implementation the other views are loaded before the game is launched so no errors will occur when switching views.

4.2 Load grid view

4.2.1 Description

This view contains 2 buttons that allow the user to refresh the file list or start the grid from file. The view also contains a list of selectable files to choose from.

When the user selects a grid from the list of recents files, it will load that grid into the game ready to be played. When the user double clicks the file it will both load the file and star the game with that grid.

4.2.2 Possible errors

- If there are no recent grid files it will not display any.
- If the Start grid button is pressed and no file is loaded a dialogue will pop-up informing the user to select a file.
- If a recent file is selected but it has been removed from the system, a dialogue will pop-up informing the user such so they may go and pick another file, the null file will then be removed from the list as soon as it is refreshed.

4.3 High score view

4.3.1 Description

This view contains a table view with two navigational arrows to change between overall score and current grid score.

4.3.2 Possible errors

- If no grid is loaded the navigation buttons will be disabled to stop the user trying to view current cube high scores, so only the overall high scores table will be displayed.
- If there are no high scores to display, a message will display instead of a high score table informing the user to navigate to the start view (see 4.1) to play a game.

4.4 Settings view

4.4.1 Description

This view will contain the game settings that can be changed (color blind mode and clear highscores). It will also have a quit icon in the top right to close the overlay

4.4.2 Possible errors

4.5 Help view

4.5.1 Description

This view will contain details on the controls and how the user can play the game.

4.5.2 Possible errors

4.6 Game view

4.6.1 Description

This view has a points display, a Timer display, and menu button across the top. The center contains a view of the grid and a list of the found words. The bottom has a text field with the current word and a submit button.

4.6.2 Possible errors

- If grid is not loaded from file properly, it will return to the Load view.

4.7 End overlay

4.7.1 Description

This will overlay the game view(see 4.6) when the game ends and will display the players Score and will contain the following buttons:

Save Game: Brings up a dialogue to allow the user to save the game and cube.

High Scores: Allows the user to view the High score view (see 4.3).

Exit: Exits to the Start view (see 4.1).

Replay: Closes overlay and restarts the game state

4.7.2 Possible errors

- if file fails to save a dialog will let the user know.
- if the filename the user has entered is invalid a dialog will let the user know so they can enter it again.

REFERENCES

[1] *Software Engineering Group Projects* JoggleCube Game Requirements Specification. C. J. Price SE.QA.CSRS. 1.0 Release.

DOCUMENT HISTORY

Version	CCF No.	Date	Changes made to Document	Changed by
0.1	N/A	2018-02-01	Initial creation	NAW21
0.1.1	N/A	2018-02-02	Begun writing the introduction and Typical Users Section	NAW21
0.1.2	N/A	2018-02-06	Started writing use cases	NAW21
0.1.3	N/A	2018-02-07	More Use Cases	NAW21
1.0	N/A	2018-02-21	Added Error Conditions	NAW21
1.1	N/A	2018-02-21	Added New Use Case	ALT38
1.2	N/A	2018-04-30	Made edits based on feedback	NAW21, LAP12
1.3	N/A	2018-05-02	Tweaks to ensure accuracy with current UI	RHE24