**Software Engineering Group Project**

**AUM Group**

**Design Specification Document**

Author: jty

Config Ref: SE\_JC\_DS\_01

Date: 24 March 2018

Version: 1.1

Status: Draft

Department of Computer Science

Aberystwyth University (Mauritius Branch Campus)

UniCiti, Coastal Road

Flic-en-Flac

Copyright © Aberystwyth University 2018

**CONTENTS**

[1. INTRODUCTION 3](#_Toc509169163)

[1.1. Purpose of this document 3](#_Toc509169164)

[1.2. Scope 3](#_Toc509169165)

[1.3. Objectives 3](#_Toc509169166)

[2. DECOMPOSITION DESCRIPTION 4](#_Toc509169167)

[2.1. Programs in system 4](#_Toc509169168)

[2.2. Significant classes in each program 4](#_Toc509169169)

[2.2.1. Significant classes in Program 1 4](#_Toc509169170)

[2.2.2. Significant classes in Program 2 4](#_Toc509169171)

[\*\*2.2.n Significant classes in Program n 4](#_Toc509169172)

[2.3. Modules shared between programs 4](#_Toc509169173)

[2.4. Mapping from requirements to classes 4](#_Toc509169174)

[3. DEPENDENCY DESCRIPTION 5](#_Toc509169175)

[3.1. Component Diagrams 5](#_Toc509169176)

[3.1.1. Component Diagram for Program 1 5](#_Toc509169177)

[3.1.2. Component Diagram for Program 2 5](#_Toc509169178)

[4. INTERFACE DESCRIPTION 6](#_Toc509169179)

[4.1. Class 1 interface specification 6](#_Toc509169180)

[4.2. Class 2 interface specification 6](#_Toc509169181)

[5. DETAILED DESIGN 7](#_Toc509169182)

[5.1. Sequence diagrams 7](#_Toc509169183)

[5.2. Significant algorithms 7](#_Toc509169184)

[5.3. Significant data structures 7](#_Toc509169185)

[6. REFERENCES 8](#_Toc509169186)

[DOCUMENT HISTORY 8](#_Toc509169187)

# **1. INTRODUCTION**

# **1.1. Purpose of this document**

The Design Specification documents tracks the necessary information required to effectively define architecture and system design in order to give the development team guidance on architecture of the system to be developed. The Design Specification document is created during the Planning Phase of the project. Some portions of this document such as the user interface (UI) may on occasion be shared with the client/user, and other stakeholder whose input/approval into the UI is needed.

## **1.2. Scope**

This document specifies the design requirement for the JoggleCube game. It indicates the main design aspects to be used in the design process of the JoggleCube game.

This document should be read by the project manager, project team, and development team.

## **1.3. Objectives**

## The objective of the document is to provide the design specification to the project members, so as to the design requirement are met according to the standards of the Design Specification document.

# **2. DECOMPOSITION DESCRIPTION**

## **2.1. Programs in system**

## **2.2. Significant classes in each program**

## **2.2.1. Significant classes in Program 1**

## **2.2.2. Significant classes in Program 2**

## **\*\*2.2.n Significant classes in Program n**

## **2.3. Modules shared between programs**

## **2.4. Mapping from requirements to classes**

# **3. DEPENDENCY DESCRIPTION**

## **3.1. Component Diagrams**

## **3.1.1. Component Diagram for Program 1**

## **3.1.2. Component Diagram for Program 2**

# **4. INTERFACE DESCRIPTION**

## **gameMainClass**

public class gameMainClass

public static void main(String[] args)

gameMainClass is the main class of the program. It is a public class which manage all the back-end function in the JoggleCube . The main class is a public static void type since it there is no object to invoke therefore it has a static method to allow invocation from class and it does not return any value. It accepts arguments of type string in a collection. The main class allow the startmenu to be loaded.

## **startMenu**

public class startMenu extends javax.swing.JFrame

The startMenu is a public classs which extends the jFrame class to allow the the jFrame design to run in the program.

public startMenu()

It is a public class which is use to initialize the core components of the jFrame.

public void close()

It is a public class used to control the termination of the game. Once this function has been clicked on the gameplay will ask the user if he/she wants to end and close the game.

private void initComponents()

It is a public class with no return value which is use to initialize the core components of the gameplay design.

public void actionPerformed(java.awt.event.ActionEvent evt)

It is a public class which extends an actionevent evt and returns no values. The actionPerformed is use to monitor the action being performed once pressed or clicked.

private void jbnewGameActionPerformed(java.awt.event.ActionEvent evt)

It is a public class which returns no values and is use to control the action once the jbutton newGame is pressed.

private void jbhelpActionPerformed(java.awt.event.ActionEvent evt)

It is a public class which returns no values and is use to control the action once the jbutton help is pressed.

private void jbSettingsActionPerformed(java.awt.event.ActionEvent evt)

It is a public class which returns no values and is use to control the action once the jbutton settings is pressed.

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt)

It is a public class which returns no values and is use to control the action once the jbutton jbutton5 is pressed.

public static void main(String args[])

The main class is a public static void type since it there is no object to invoke therefore it has a static method to allow invocation from class and it does not return any value. It accepts arguments of type string in a collection. The main class allows the function to be called.

## **playMenu**

public class playGame extends javax.swing.JFrame

The playGameis a public classs which extends the jFrame class to allow the the jFrame design to run in the program.

public playGame()

It is a public class which initialize the game components and allows the creation of a new game grid. It create the object for the playMenu.

private void initComponents()

It is a public class which is use to called the variables and return no values since it is void type.

public int getSize()

It is a public class which is required to return a integer value for the grid panel to compute.

public String getElementAt(int i)

It is a public class with a parameter integer i and it returns a string value from the grid for the user to know what element a single grid contains.

public void actionPerformed(java.awt.event.ActionEvent evt)

It is a public class with parameter evt as an ActionEvent and outputs no value. It performs all the action to be performed once a button is clicked.

private void populateGrids()

It is a private class to be called only in a specific scope of the code and it is use to generate the game grid with letter for the user to play.

private void handleTileAction(java.awt.event.ActionEvent evt)

It is a private class with parameter ActionEvent evt to handle the selection of the user once a game tile has been clicked the other grid will also light up the respective game tile.

public void run()

It is a public class with no values to be output and it is use to link the gameplay button to the main menu of the game.

## **gameScoreBoard**

public class gameScoreBoard extends javax.swing.JFrame

It is a public class which extends the jFrame and it is the main class for the game board.

public gameScoreBoard()

It is a public class use to build object needed for the main class.

private void initComponents()

It is a private class for the scoreboard scope only and is used to initialize the variables needed for the gameScoreBoard class.

public boolean isCellEditable(int rowIndex, int columnIndex)

It is a public class with parameter rowIndex and columnIndex which return true or false for whether the game tile is clickable.

public void run()

It is a public class which return no values and is use to create and displays the game score board for the game

## **gameExit**

public class gameExit extends javax.swing.JFrame

It is a public class which extends the jFrame and is the main class for the gameExit class.

public gameExit()

It is a public class which initialize the game components and create the object for the class gameExit

public boolean endGame()

It is a public class of type Boolean which ask the user if he/she really wants to exit the class

## **scoreMenu**

public class scoreMenu extends javax.swing.JFrame

It is a public class which extends the jFrame and is the main class in scoreMenu.

public scoreMenu()

It is a public class used to initialize and build the object for the scoreMenu class

private void initComponents()

It is a public class with no return value and is use to initialize the components needed for the creation of the scoreMenu class.

public void run()

It is a public class which output no value and is use to create and display the scoreMenu form and linked to the gameMenu.

## **gameHelp**

public class gameHelp extends javax.swing.JFrame

It is a public class which extends the jFrame and is the main class in gameHelp.

public gameHelp()

It is a public class used to initialize and build the object for the gameHelp class

private void initComponents()

It is a public class with no return value and is use to initialize the components needed for the creation of the gameHelpclass.

public void run()

It is a public class which output no value and is use to create and display the gameHelp form and linked to the gameMenu form.

# **5. DETAILED DESIGN**

## **5.1. Sequence diagrams**

## **5.2. Significant algorithms**

## **5.3. Significant data structures**

# **6. REFERENCES**

# **DOCUMENT HISTORY**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Version* | *CCF No.* | *Date* | *Changes made to document* | *Changed by* |
| 1.0 | N/A | 18/03/18 | Creation of Design Specification Document | mai15 |
| 1.1 | N/A | 24/04/18 | Updated the UI description | jty |
|  |  |  |  |  |