Course Work Cover Sheet - The School of Computing

# 

**Author’s Name:** Kyle Harrison, Toby Philip, Scott Reid, Sam Hood

**Matriculation Numbers:** 110009870 , 050005919, 110014567, 070017432

**Module Code:** AC21004

**Assignment Title:**  Assignment 1 - Requirements and Use Cases

**Date Submitted:** 10/02/2012

**Date Due to be submitted:** 10/02/2012

**Word Count**

|  |  |
| --- | --- |
| Your course work may be used by The School of Computing for demonstration purposes with other classes and/or members of the public, unless you indicate otherwise. Tick the box at the right if you do *not* wish your work to be used in this way. |  |

I certify that this assignment represents all my own work and that no parts of it have been copied and that no collusion has taken place with any other person. I have also read and understood The School of Computing’s regulations as regards course work and I certify that this course work was performed according to those regulations.

I certify that any disks submitted with this assignment have been virus checked and have no viruses on them.

Signed: ………….…..<Name>



School of Computing

Group/Team: B

Kyle Harrison

Sam Hood

Toby Philp

Scott Reid

JADE System

Use Case Specification

Contents

[Course Work Cover Sheet - The School of Computing 1](#_Toc316652874)

[1 Joining a Game 5](#_Toc316652875)

[Actors Involved 5](#_Toc316652876)

[Brief Description 5](#_Toc316652877)

[Basic Flow of Events 5](#_Toc316652878)

[Alternative Flows 5](#_Toc316652879)

[A1 - <Player is already participating in a game> 5](#_Toc316652880)

[A2 - <JADE game server cannot be contacted> 6](#_Toc316652881)

[A2.1 - <JADE game server connection retry failure> 6](#_Toc316652882)

[A3 - <There are no available games within the area> 6](#_Toc316652883)

[A4 - <Player has entered an invalid username> 6](#_Toc316652884)

[2 Player Movement / Visiting Location 7](#_Toc316652885)

[Actors Involved 7](#_Toc316652886)

[Brief Description 7](#_Toc316652887)

[Basic Flow of Events 7](#_Toc316652888)

[Alternative Flows 7](#_Toc316652889)

[A1 – <Question Location> 7](#_Toc316652890)

[A1.1 – <Incorrect Answer> 8](#_Toc316652891)

[A1.1.1 – <Low Health> 8](#_Toc316652892)

[A1.2 – <Trading Health> 8](#_Toc316652893)

[A2 – <Keystone Location> 9](#_Toc316652894)

[A3 – <Wildcard Location> 9](#_Toc316652895)

[A3.1 – <Wildcard Location (alternative item)> 9](#_Toc316652896)

[A3.2 – <Wildcard Location (alternative item)> 9](#_Toc316652897)

[A3.2.1 – <Surrender Health> 10](#_Toc316652898)

[A4 – <Exit Location> 10](#_Toc316652899)

[A4.1 – <Exit Location (no required items owned)> 10](#_Toc316652900)

[3 Display Messages 11](#_Toc316652901)

[Actors Involved 11](#_Toc316652902)

[Brief Description 11](#_Toc316652903)

[Basic Flow of Events 11](#_Toc316652904)

[Alternative Flows 11](#_Toc316652905)

[A1 - < Connection cannot be established to game server> 11](#_Toc316652906)

[A2 - < No messages Available > 11](#_Toc316652907)

[4 Broadcast Message 12](#_Toc316652908)

[Actors Involved 12](#_Toc316652909)

[Brief Description 12](#_Toc316652910)

[Basic Flow of Events 12](#_Toc316652911)

[Alternative Flows 12](#_Toc316652912)

[A1 - <Player select game options instead > 12](#_Toc316652913)

[A2 - <Player cancels message request> 13](#_Toc316652914)

[A3 - <Failure to connect to server 13](#_Toc316652915)

[5 Post Facebook Status 14](#_Toc316652916)

[Actors Involved 14](#_Toc316652917)

[Brief Description 14](#_Toc316652918)

[Basic Flow of Events 14](#_Toc316652919)

[Alternative Flows 14](#_Toc316652920)

[A1 - <Player cancels status post> 14](#_Toc316652921)

[A2 - <Failure to connect to Facebook API/ Web server > 14](#_Toc316652922)



Joining a Game

Actors Involved

The following actors are involved in this use case: <Player> and <JADE Game Server>

Brief Description

This use case provides the capability for a player join a game through viewing the available games near their location and selecting the game which they wish to participate in.

Basic Flow of Events

*The use case begins when the Player opens the system.*

|  |  |
| --- | --- |
| System: | The system will first check if the <Player> is already participating in a game. The system will then contact the <JADE game server> and request all games within a 2 mile radius of the <Player>’s current GPS location. (A1), (A2) |
| <JADE Game Server>: | Returns a list of available games within a 2 mile radius of the provided GPS location. (A3) |
| System: | Sorts the list of available games by proximity and displays it on the screen. |
| <Player>: | The player selects a game to join from the displayed list. |
| System: | The system prompts the <Player> to enter the user name with witch they wish to represent themselves within this game. |
| <Player>: | Enters a username. |
| System: | Sends the username and selected game to the <JADE Game Server> (A2) |
| <JADE Game Server>: | Validates the username and adds the user to the selected game then sends the game assets to the system.(A4) |
| System: | Loads the game assets and displays the game map on the screen. The system then waits for the <Player> to enter the start location. |

Alternative Flows

A1 - <Player is already participating in a game>

*The player is already taking part in a game and for some reason closed the system (for example to use another application). The player has then opened the system and is already registered as a game participant.*

|  |  |
| --- | --- |
| System: | Loads the current game data. The system then sets itself to the previous game state and displays the previous state of the screen. |
|  |  |
|  |  |

A2 - <JADE game server cannot be contacted>

*The system has sent a request to <JADE Game Server> but the server cannot be contacted (the server is down or the device has no network access).*

|  |  |
| --- | --- |
| System: | Displays a notification on the screen that the JADE game server cannot be contacted and an option to retry. |
| <Player>: | Selects the retry option. |
| System: | Resends request to <JADE Game Server>. (A2.1) |
| <JADE Game Server>: | Sends request response. |

A2.1 - <JADE game server connection retry failure>

*The system has sent a request to <JADE Game Server> but the server cannot be contacted (the server is down or the device has no network access), a second attempt to contact <JADE Game Server> has been made without success.*

|  |  |
| --- | --- |
| System: | Displays a notification on the screen that the JADE game server cannot be contacted. The notification apologizes for the inconvenience and suggests waiting 15 minutes before trying again. |

A3 - <There are no available games within the area>

*The <JADE game server> has been queried for games within a 2 mile radius of the supplied GPS location, however there aren’t any and it returns nothing.*

|  |  |
| --- | --- |
| <JADE Game Server> | Returns an empty list. |
| System: | Displays a message on the screen to notify <Player> that there are no games within their current location. |

A4 - <Player has entered an invalid username>

*The <JADE game server> has been asked to add <Player> to the selected game using the supplied username but the username is invalid.*

|  |  |
| --- | --- |
| <JADE Game Server> | Returns a username error. |
| System: | Displays the username error on the screen and prompts <Player> to enter an alternative username. |
| <Player> | Enters a different username. |

Player Movement / Visiting Location

Actors Involved

The following actor(s) are involved in this use case: **Player**

Brief Description

This use case is directed at the flow of the actual gameplay, describing each path that may be taken during the course of the game. This will show every possible situation that the system (gameplay) can be in at any one time.

Basic Flow of Events

*Use case begins when players joins a new game.*

|  |  |
| --- | --- |
| **Player:** | Shakes phone to activate Oracle. |
| **System:** | Generates number of path nodes to take.  Shows possible locations to Player. |
| **Player:** | Arrives at location. |
| **System:** | Detects location as a ‘no frills’ location, prompts to shake Oracle.  **<A1> <A2> <A3> <A4>** |
| **Player:** | Shakes phone to activate Oracle. |

Alternative Flows

A1 – <Question Location>

*Arises when Player arrives at a new location.*

|  |  |
| --- | --- |
| **System:** | Detects location as a ‘question’ location.  Provides Player with question. |
| **Player:** | Answers question correctly. **<A1.1> <A1.2>** |
| **System:** | Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A1.1 – <Incorrect Answer>

*Arises when Player incorrectly answers a question.*

|  |  |
| --- | --- |
| **Player:** | Answers question incorrectly. |
| **System:** | Decrements Player health by 10%.  Prompts Player to answer again, or answer new question. **<A1.1.1>** |
| **Player:** | Answers question correctly. |
| **System:** | Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A1.1.1 – <Low Health>

*Arises when Player’s health drops below 15% during the course of the game.*

|  |  |
| --- | --- |
| **System:** | Detects Player health is below 15%.  Prompts Player to return to a ‘regeneration’ location. |
| **Player:** | Returns to ‘regeneration’ location. |
| **System:** | Resets Player health to 100%.  Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A1.2 – <Trading Health>

*Arises when Player decides to exchange health for a new question.*

|  |  |
| --- | --- |
| **Player:** | Trades health for new question. |
| **System:** | Decrements Player health by 5% if total health does not drop below 15%.  Provides Player with new question. |
| **Player:** | Answers question correctly. **<A1.1>** |
| **System:** | Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A2 – <Keystone Location>

*Arises when Player arrives at a new location.*

|  |  |
| --- | --- |
| **System:** | Detects location as a ‘keystone’ location.  Provides Player with question. |
| **Player:** | Answers question correctly. **<A1.1> <A1.2>** |
| **System:** | Adds keystone to Player’s bag.  Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A3 – <Wildcard Location>

*Arises when Player arrives at a new location, ‘Energy Boost’ wildcard.*

|  |  |
| --- | --- |
| **System:** | Detects location as a ‘wildcard’ location.  Randomly chooses ‘Energy Boost’ wildcard. **<A3.1> <A3.2>**  Increases Player’s health by 10%.  Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A3.1 – <Wildcard Location (alternative item)>

*Arises when Player arrives at a new location, ‘Question Immunity Spell’ wildcard.*

|  |  |
| --- | --- |
| **System:** | Detects location as a ‘wildcard’ location.  Randomly chooses ‘Question Immunity Spell’ wildcard.  Adds spell to Player’s bag.  Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A3.2 – <Wildcard Location (alternative item)>

*Arises when Player arrives at a new location, ‘Give It Up’ wildcard.*

|  |  |
| --- | --- |
| **System:** | Detects location as a ‘wildcard’ location.  Randomly chooses ‘Give It Up’ wildcard.  Prompts Player to relinquish item from bag or lose 5% health |
| **Player:** | Chooses to relinquish item. **<A3.2.1>** |
| **System:** | Removes item from bag.  Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

## A3.2.1 – <Surrender Health>

*Arises from ‘Give It Up’ wildcard.*

|  |  |
| --- | --- |
| **Player:** | Chooses to lose health. |
| **System:** | Decrements Player health by 5%.  Prompts Player to shake Oracle to progress to a new location. **<A1.1.1>** |
| **Player:** | Shakes phone to activate Oracle. |

## A4 – <Exit Location>

*Arises when Player arrives at a new location.*

|  |  |
| --- | --- |
| **System:** | Detects location as an ‘exit’ location.  Checks number of keystones in Player bag.  Informs Player of end of game. **<A4.1>** |
| **Player:** | Rejoices. |

## A4.1 – <Exit Location (no required items owned)>

*Arises when Player arrives at a new location (with not enough keystones).*

|  |  |
| --- | --- |
| **System:** | Detects location as an ‘exit’ location.  Checks number of keystones in Player bag.  Informs Player they don’t have the required items to exit.  Prompts Player to shake Oracle to progress to a new location. |
| **Player:** | Shakes phone to activate Oracle. |

Display Messages

Actors Involved

The following actors are involved in this use case:

<Player> and <Jade Game Server>

Brief Description

Provides the capability for retrieving messages broadcast by other players from the Jade game server at the start of a player's turn.

Basic Flow of Events

The use case begins when the <Player> shakes the oracle to start their turn.

|  |  |
| --- | --- |
| Actor  <Player > | Player shakes the oracle to start their turn. |
| System: | At the start of players turn (any time options are being presented to select from) the system issues a request to the game server to retrieve any messages, which have been broadcast by other players.  <**A1** – Connection cannot be established to game server> |
| Actor  < Jade Game Server > | Request is received by Jade game server and messages are returned to the system.  < **A2** – No messages available > |
| System | Displays messages to Player alongside game options. |
| Actor  <Player > | Player reads messages and closes when finished returning to game options. |

Alternative Flows

A1 - < Connection cannot be established to game server>

*The system issues a request to the game server but a connection cannot be established to connect to the server.*

|  |  |
| --- | --- |
| System: | Issues request to game server |
| System: | Server cannot be accessed. Message is displayed to user notifying them that they cannot connect to the server. |

A2 - < No messages Available >

*A request has been sent to the game server however no messages are available.*

|  |  |
| --- | --- |
| System | Displays the game options to select from. |
| Actor  <Player > | Player select game option. |

Broadcast Message

Actors Involved

The following actors are involved in this use case:

<Player> and <Jade Game Server>

Brief Description

Provides player A with the capability to send a text message to Player B at the start of Player A's turn by storing the message on the game server until Player B enters their next turn in the game in which they send a request to the game server to retrieve the message. After entering the text the player’s name and the id of the game they are currently playing will all be sent to the Jade game server which will handle the logic behind recording the message and ensuring it is relayed to other players.

Basic Flow of Events

*The use case begins when the <player > selects the option to broadcast a message at the start of their turn.*

|  |  |
| --- | --- |
| Actor  <Player > | Selects “ Broadcast a message” from the option screen at the start of their turn.  < **A1**– Player select game options instead > |
| System: | Displays a message box allowing player to enter text and a buttons to send when message is finished being composed. |
| Actor  <Player > | Player A enters text for the message into the message box being sent to Player B and presses send when the message is complete being composed.  < **A2**– Player cancels message request> |
| System: | Issue the message text to the jade game server along with player name and the id of the current game Player A is playing.  < **A3** – Failure to connect to server> |
| Actor  < Jade Game Server > | The Jade game server handles the logic for recording the message and relaying it to others. |
| System : | Return to the option screen at the start of the turn. |

Alternative Flows

A1 - <Player select game options instead >

*At the start of the Player's turn they are presented with the normal options for playing Jade alongside the option to broadcast a message. In this alternative flow the user has decided not to broadcast a message ending the use case.*

|  |  |
| --- | --- |
| Actor  <Player > | Player selects game option from the option menu instead and skips broadcasting a message. |
| System: | System handles request for other option from menu. |

A2 - <Player cancels message request>

*If the user selects to broadcast a message to another player then later decides they no longer want to they have the option to cancel the message and return to the option screen presented at the start of their turn.*

|  |  |
| --- | --- |
| Actor  <Player > | Player cancels the message to be broadcast |
| System: | Returns the user to the option screen presented at the start of the game. |
| Actor  <Player > | Selects a different option from the option screen to continue playing Jade. |

A3 - <Failure to connect to server>

*If the user attempts to broadcast a message to the server however a connection cannot be established to the game server.*

|  |  |
| --- | --- |
| System: | On-screen message notifying the user they cannot select broadcast a message at this time. |
| Actor  <Player > | Closes message box and returns to option screen in the main menu. |

Post Facebook Status

Actors Involved

The following actors are involved in this use case:

<Player> and <Facebook>

Brief Description

Integration with social networking sites provides players during their turn the capability of posting a status to facebook either through the facebook API or a web service from the game interface.

Basic Flow of Events

*The use case begins when the <player > selects “Post a status to facebook” during their turn.*

|  |  |
| --- | --- |
| Actor  <Player > | Selects “ Post a status” from the option screen at during their turn. |
| System: | Displays a message box allowing player to enter text and a buttons to post when status is finished being composed. |
| Actor  <Player > | Player enters text for the status into the message box being sent to the Facebook API / web service and presses post when the status is complete being composed.  < **A1**– Player cancels status post > |
| System: | Issue the status text to the facebook API/ web service  < **A2** – Failure to connect to Facebook API / Web server> |
| Actor  < Facebook > | The Facebook API / web service handles the rest for posting the status to the player profile. |
| System : | Return to the current game the player is engaged in playing. |

Alternative Flows

A1 - <Player cancels status post>

*If the user selects to post a status to facebook then later decides they no longer want to they have the option to cancel the post and return to the game.*

|  |  |
| --- | --- |
| Actor  <Player > | Player cancels the status update |
| System: | Returns the user to the game. |

A2 - <Failure to connect to Facebook API/ Web server >

*If the user attempts to broadcast a message to the server however a connection cannot be established to the game server.*

|  |  |
| --- | --- |
| System: | On-screen message notifying the user they cannot post a status to facebook. |
| Actor  <Player > | Closes message box and returns to Game. |