

## **Group Project 03 – Use Case Document**

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## CONTENTS

<b>1. INTRODUCTION.....</b>	<b>3</b>
<b>1.1 Purpose of this Document.....</b>	<b>3</b>
<b>1.2 Scope.....</b>	<b>3</b>
<b>1.3 Objectives.....</b>	<b>3</b>
<b>2. TYPICAL USERS.....</b>	<b>4</b>
<b>3. USE CASES.....</b>	<b>5</b>
<b>3.1 Use cases for player: .....</b>	<b>5</b>
<b>4. ERROR CONDITIONS .....</b>	<b>8</b>

# **1. INTRODUCTION**

## **1.1 Purpose of this Document**

The purpose of this document is to describe the basic needs for the user interface of the Buccaneer group project.

## **1.2 Scope**

This document specifies who is expected to use the program. It describes the ways users can interact with the program, and any possible error conditions. This document should be read by all project members.

## **1.3 Objectives**

The main objective is to aid the production of a user interface which covers all the requirements of the system being built, and which makes clear what the user can see and do at any point in their interaction with the system.

## 2. TYPICAL USERS

### Player

Arthur is an individual who enjoys playing board games on his computer. He along with three other friends all play the game with a different style. Arthur tends to play aggressively and actively seeks to attack another player's ship. He does this by sailing up to the same grid square as the opposing player's ship and enters a battle. At that point both players must reveal their combat values, the player with the higher combat value wins the duel. If Arthur wins, he gets to choose between two crew cards or all the opposition's treasure. One of the other players likes to rush to the Treasure Island, once there, they draw a chance card. The cards can place a player at an advantage or disadvantage. For example, a player might have to give up two of his best crew, or on the other hand, take two crew cards from the Pirate Island. After winning some battles Arthur has enough crew cards and treasure to sail to other harbours and trade for their treasure. To trade, Arthur must match the treasure's worth in crew cards or other treasure. Once he finishes trading, he deposits treasure to his Home Port.

Ellis is one of the other three players and has accessibility needs as he is colour blind. Therefore, before starting the game Ellis will turn on the accessibility option for himself in the player selection screen. This will add a number to each player's ship, which is equivalent to their player number. This will be displayed on Ellis' screen exclusively when it is his turn, unless other players have also selected that option. In which case the same numbers will be displayed on their screen.

The other two players are Dave and Will. Dave is an experienced gamer and does not require any assistance with understanding and playing the game, having played it several times before. Will, however, is new to the game and utilises the help screens throughout the game to help him understand how to play. He does this by clicking a question mark icon that appears in the corner of the screen he is on. Once clicked, it will open an informative screen about that part of the game.

### 3. USE CASES

#### USE CASES FOR PLAYER:

- 1) Start a new game
- 2) Continue a saved game
- 3) Sail
- 4) Attack
- 5) Draw chance card
- 6) Trade
- 7) Interact with the Treasure Island
- 8) Interact with the Flat Island
- 9) Interact with the Pirate Island
- 10) Deposit treasure to home port
- 11) View personal statistics
- 12) View chance cards in player's hand
- 13) Winning the game
- 14) Exit the game

#### UC1 START A NEW GAME - FR1, FR2, FR10

When a player starts a new game, they will run the program. They will then see a Buccaneer main menu with a “START” button which they will press. The player will be presented with 4 entry boxes and prompted to enter a name, once the name is entered, they will be able to select a colour for each player. These names will be later used to signal turns. There is a 20-character maximum length for each name input. Once a game has started a player is assigned the necessary cards and a random port.

#### UC2 CONTINUE A SAVED GAME

A player can continue a saved game by locating the “LOAD GAME” button in the main menu when the game is first launched. Clicking the button will load up the last saved game on the computer.

#### UC3 SAIL - FR11

At the beginning of a players turn, a set number of squares are highlighted to show how far they can move. This amount will be dictated by the value of the player's crew cards. After the player sails, they will be prompted to update their bearing by clicking on the 4 highlighted squares around their ship. If a player chooses to move zero squares, they can do so by clicking the skip turn button.

#### **UC4 ATTACK - FR12, FR11**

When a player sails to the same square as an opposing player, both players will enter a battle. A player can also enter a battle if they sail, and an opposing player's ship happens to be in their path. They will be prompted with a question that asks, "Ready to attack?". The player will then either be able to press a yes or a no button.

Once a player wins a battle, they are awarded the maximum amount of treasure they can hold on their ship, if the opposing player does not have treasure but has crew cards then the two lowest value crew cards are awarded, or one if the loser only has one. The winner retains their bearing.

The player who lost the battle loses all treasure on the ship, at most two pieces of treasure are given to the winner while the rest is moved to the Flat Island. The player then must move up to the maximum viable squares and make a turn. A player who just lost must move at least one square.

#### **UC5 DRAW CHANCE CARD - FR4**

When the player needs to draw a chance card they will be prompted to do so. Once they have clicked the "Draw" button they will be given a random card from the deck. The card will be displayed on the main board until the player clicks on it.

#### **UC6 TRADE - FR15**

Once the player reaches a harbour, they will be given the option to trade. The harbour's resources and theirs will be seen. Once the player decides what they would like to trade for they can select the resources in their inventory that they would like to trade. As they select more resources the viable trades will be highlighted with a green background. Once the player's and the harbour's items are selected the player will be able to click the "Trade" button.

#### **UC7 INTERACT WITH THE TREASURE ISLAND - FR13 FR4**

Once a player sails to the coast of Treasure Island and their turn ends there, they will be prompted to draw a chance card that will appear on the screen, they must then follow the instructions on the card. The player can receive or lose crew cards or loot from these chance cards.

#### **UC8 INTERACT WITH THE FLAT ISLAND - FR14**

A player can sail to the Flat Island and finish their turn on the coast, by doing so they will be awarded all the treasure on the island that they have room for. If a player has room for only one treasure, the highest value treasure will be awarded. The player will also receive all the cards on the island.

#### **UC9 INTERACT WITH THE PIRATE ISLAND**

A player will only interact with the Pirate Island once instructed by a chance card. For example, a player could be blown back all the way to the island or could take treasure from the island.

#### **UC10 DEPOSIT TREASURE TO HOME PORT - FR7**

Once a player has sailed back to their home port, they will be prompted with an option to deposit their treasure. To which the player can answer either yes or no.

### **UC11 VIEW PERSONAL STATISTICS - FR6**

A player can view their personal statistics by looking at the “player stats” box at the top left-hand corner of the screen, this will display:

- Player’s name
- Player's number
- Player’s crew fighting strength
- The number of cards in the player's hand, and the value of each card
- Player’s total loot in safe zone
- Player’s home port
- Player’s total loot in the ship
- Any chance cards remaining in their hand
- Player’s current location/ship location
- Player’s bearing

### **UC12 VIEW CHANCE CARDS IN PLAYER’S HAND- FR4**

A player will see a preview of their chance cards under their personal statistics on the left-hand side of the window. They can choose to inspect the chance cards in their hand by clicking on the on the preview. Doing so will maximise the image and display all cards to the player.

### **UC13 WINNING THE GAME – FR17**

A player can win a game by collecting at least 20 points worth of treasure. Once a player has enough treasure they can travel to their home port, once there the game will check all treasure in the port and on the ship, if the amount is 20 or more the winner will be announced. The players will then get a choice of either exiting or starting a new game by clicking the corresponding button.

### **UC14 EXIT THE GAME**

A player can either exit at the beginning in the main menu or while playing the game. To exit the game from the main menu the player must press the “EXIT” button. To exit the game while playing, a player should locate the “MENU” button in the bottom right corner of the screen and press it, once the menu is displayed the player will be presented with a few buttons. Two of them being “EXIT” and “SAVE & EXIT”, the user must make a choice which to click. Alternatively, a player can locate the standard system GUI “x” button in the top right corner of the screen and press it.

## 4. ERROR CONDITIONS

1. The bulk of possible error conditions anticipated are at times when the program prompts the user for keyboard input in fields such as text boxes. This is a problem due to the user entering a wide range of possible values which could lead to an issue. To mitigate this input validation should be used. Only certain characters should be allowed to be entered. This error is most likely to occur during the player selection screen (slide 5 of presentation). Should this error occur then the 'Begin' button will not be clickable.
2. When a user (buyer) engages in a trade, the loot that can be traded must be equal in points to the trader's (seller's) loot. This could however cause an error if the wrong amount and type of loot is selected for the sets at the trade. To mitigate this a function to check the correct loot and amount should be used. Should this error occur the trade button (slide 17 of presentation) will be unclickable until the correct amounts are selected.
3. After a battle with another player should both players draw in the battle this could cause an error since drawing isn't currently an option. To mitigate this a draw screen should be displayed and both players will have to change direction and move.

## REFERENCES

- [1] QA Document SE.QA.04 – User Interface Specification Standards.  
 [2] QA Document SE.QA.RS-CS22120 – Buccaneer Online Board Game Requirements Specification

## DOCUMENT HISTORY

Version	Issue No.	Date	Changes made to document	Changed by
0.0	N/A	09/02/22	New document	ols21
0.1	N/A	10/02/22	Added use cases and wrote descriptions for some	ols21
0.2	N/A	16/02/22	Added use case descriptions	tob31
0.3	N/A	16/02/22	Developed use case descriptions to include more detail	std36
0.4	N/A	02/02/22	Amended the document using formal review minutes	ols21
0.5	N/A	03/03/22	Final changes to the document	tob31 std36
1.0	N/A	04/03/22	Released document	nar29
1.1	11, 12	14/03/22	Made changes based on comments from feedback	std36 tob31
1.2	11, 12, 18, 19	17/03/22	Changed few use cases, added a winning use case and made document formatting changes	ols21