

Group Project 07

Test Specification

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Config. Ref.: SE.TS.01
Date: 2017-02-27
Version: 1.0
Status: Release

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1 INTRODUCTION

This document is the Software Test Specification for the Buccaneer Online Board Game.

1.1 Purpose of this document

The purpose of this document is to provide test specification of functional requirements for the Buccaneer Online Board Game. It specifies test procedures necessary to demonstrate that the software meets the requirements as specified in the project's Requirements Specification [1].

1.1.1 Scope

This document outlines the test specification of functional requirements described in Requirements Specification [1]. It indicates main stages of testing which need to be carried out.

This document should be read by all team members involved in coding.

1.2 Objectives

The objective of this document is to describe each individual test in detail.

2 TEST SPECIFICATION - SYSTEM TESTING

2.1 Test procedure

2.1.1 Functional Requirements

Test Ref	Requirement being tested	Test Content	Input	Output	Pass Criteria
SE-FR1-001	FR1 - Player Setup	Check that system can store two of the same names	Enter two of the same user names. user1: "test" user2: "test"	Error message warns of already used name	System displays "the name is already taken"
SE-FR1-002	FR1	Check that system can store blank names	Enter blank user name	Error message warns of not allowed user name	System displays "type in user name"
SE-FR1-003	FR1	Check that system can store long names	Enter user name "absadfsdafsokdfogkoslkfdgjdflg"	Correct name or gui error message	Visible warning or correct representation
SE-FR1-004	FR1	Check that system can store special characters	Enter user name "%*()+"	Correct name or error message	Visible warning or correct representation

SE-FR2-001	FR2 - Port Assignment	Check that system randomly assigns the ports	Setup and start the game a few times	Home Ports assigned to the users	Home Ports assigned randomly
SE-FR2-002	FR2	Check that each port is assigned only once	Setup and start the game	Current state of board; Home Ports	Each port is assigned once
SE-FR2-003	FR2	Check that there are 4 players	Setup and start the game	Current state of board displaying players in the game	System has 4 players
SE-FR2-004	FR2	Check that each player has one port	Setup and start the game	Current state of board	Each player has one port
SE-FR3-001	FR3 - Crew and management	Check that each player has crew cards	Setup and start the game	Crew cards in player's hand	Crew cards are given out
SE-FR4-001	FR4 - Chance card management	Check that system contains Chance cards	Setup and start the game, go to the treasure island	Chance card pop-up	System contains Chance cards
SE-FR5-001	FR5 - Treasure management	Count pieces of treasure	Setup and start the game	Treasure on the board	The game contains 20 pieces of treasure of 5 types
SE-FR5-001	FR5	Check that treasure can be assigned to ships, to ports and to Flat Island	Setup and start the game, perform a treasure-transforming operation	Current state of board	Treasure can be assigned to ships, to ports and to Flat Island
SE-FR6-001	FR6	Ship and 5 cards assigned to each player	Setup and start the game	Current state of board	Correct assignment
SE-FR6-002	FR6	Distance value	Cards owned by player	Current state of board highlighting the total distance the player can move in a single turn	The total distance the player can move is highlighted (one square if no crew cards, or the sum of all crew card's in the player hand)

SE-FR6-003	FR6	Fighting Value	(Potential difference between) Cards owned by player	The absolute value of the difference between the red cards and the black cards in the player's hand	Correct output
SE-FR6-004	FR6	Check that the system stores the location and orientation of the player's ship	Current state of board	The player's ship location and orientation	System correctly stores the location and orientation of the player's hand
SE-FR6-005	FR6	Check that system keeps track of the Chance cards retained in the player's hand	Chance cards in the player's hand	Current state of scoreboard	System keeps track of Chance cards in player's hand
SE-FR6-006	FR6	Check that system keeps track of the items of treasure in the player's ship	Treasure in the player's ship	Current treasure in the player's ship	System keeps track of the items of treasure in the player's ship correctly
SE-FR6-007	FR6	Check that system keeps track of the player's Home Port	Setup and start the game; Play	Current state of board	System keeps track of the player's Home Port
SE-FR7-001	FR7 - Port management	Check that the game keeps track of the number of cards at each port, and the value of each card	Setup and start the game	Current state of board; Cards at the ports	The game keeps track of the number and values of cards at each port
SE-FR7-002	FR7	Check that the game keeps track of the items of treasure at each port	Setup and start the game	Current state of board; Treasure at the ports	The game keeps track of the items of treasure at each port

SE-FR7-003	FR7	Check that the game keeps track of the player for whom this is the Home Port (if any)	Setup and start the game	Current state of board; Home Ports	The game keeps track of the player for whom this is the Home Port
SE-FR8-001	FR8 - Flat Island management	Check that cards and treasure can be put on Flat Island with a Chance card in hand	Players cards / chance cards	Ability to put items on flat island	Able to put an item on flat island if you have a chance card
SE-FR8-002	FR8	Check that the game keeps track of the number of cards at Flat Island and the value of each card	Setup and start the game	Current state of board; Cards at Flat Island	The game keeps track of the number and values of cards on Flat Island
SE-FR8-003	FR8	Check that the game keeps track of the items of treasure at Flat Island	Setup and start the game	Current state of board; Treasure at Flat Island	The game keeps track of the items of treasure at Flat Island
SE-FR9-001	FR9 - Board display	Check that game board is 20x20 square	Setup and start the game	Current state of board	Board Game is 20x20 square
SE-FR9-002	FR9	Check that squares are numbered 1 to 20	Setup and start the game	Current state of board	Square (1, 1) being the bottom left hand corner and the square (20,20) being the top right hand corner
SE-FR9-003	FR9	Check that port of Venice is at (1, 7)	Setup and start the game	Current state of board	Port of Venice is at (1, 7)
SE-FR9-004	FR9	Check that port of London is at (1, 14)	Setup and start the game	Current state of board	Port of London is at (1, 14)
SE-FR9-005	FR9	Check that port of Cadiz is at (14, 20)	Setup and start the game	Current state of board	Port of Cadiz is at (14, 20)
SE-FR9-006	FR9	Check that port of Amsterdam is at (20, 14)	Setup and start the game	Current state of board	Port of Amsterdam is at (20, 14)

SE-FR9-007	FR9	Check that port of Marseilles is at (20, 7)	Setup and start the game	Current state of board	Port of Marseilles is at (20, 7)
SE-FR9-008	FR9	Check that port of Genoa is at (7, 1)	Setup and start the game	Current state of board	Port of Genoa is at (7, 1)
SE-FR9-009	FR9	Check that Mud Bay is at (1, 1)	Setup and start the game	Current state of board	Mud Bay is at (1, 1)
SE-FR9-010	FR9	Check that Anchor Bay is at (20, 1)	Setup and start the game	Current state of board	Anchor Bay is at (20, 1)
SE-FR9-011	FR9	Check that Cliff Creek is at (20, 20)	Setup and start the game	Current state of board	Cliff Creek is at (20, 20)
SE-FR9-012	FR9	Check that Flat Island occupies a rectangle with corners as specified	Setup and start the game	Current state of board	Flat Island occupies a rectangle with corners (2, 16) and (4, 19)
SE-FR9-013	FR9	Check that Pirate Island occupies a rectangle with corners as specified	Setup and start the game	Current state of board	Pirate Island occupies a rectangle with corners (17, 2) and (19, 5)
SE-FR9-014	FR9	Check that Treasure Island occupies a rectangle as specified	Setup and start the game	Current state of board	Treasure Island occupies a rectangle with corners (9, 9) and (12, 12)
SE-FR10-001	FR10 - Game setup	Check that each player is dealt five cards from the crew card pack	Setup and start the game	Crew cards in hand	Each player has five cards
SE-FR10-002	FR10	Check that each Trading Port is dealt two cards	Setup and start the game; visit each Trading Port	Pop-up window displaying content of Trading Port	Each Trading Port has 2 cards
SE-FR10-003	FR10	Check that each Trading Port has a correct value of items assigned	Setup and start the game; visit each Trading Port	Pop-up window displaying content of Trading Port	The value of items at the port is made up to 8 by adding treasure

SE-FR10-004	FR10	Check that ships of all four players are assigned to their Home Ports	Setup and start the game	Current state of board; ships at the Home Ports	Each player has a ship assigned to his Home Port
SE-FR11-001	FR11 - Taking turns	Check that first turn is given to the player with London as Home Port	Setup and start the game	First turn	First turn is given to the player with London as Home Port
SE-FR11-002	FR11	Check that second turn is given to the player with Genoa as Home Port	Setup and start the game; Finish first turn	Second turn	Second turn is given to the player with Genoa as Home Port
SE-FR11-003	FR11	Check that third turn is given to the player with Marseilles as Home Port	Setup and start the game; Finish first and second turn	Third turn	Third turn is given to the player with Marseilles as Home Port
SE-FR11-004	FR11	Check that fourth turn is given to the player with Cadiz as Home Port	Setup and start the game; Finish first, second and third turn	Fourth turn	Fourth turn is given to the player with Cadiz as Home Port
SE-FR11-005	FR11	Check that turns are given in a correct order	Setup and start the game; Finish four turns and play another four turns	Turns	Turns are given in a correct order (London, Genoa, Marseilles, Cadiz)
SE-FR11-006	FR11	Check that each player is given an appropriate choice	Setup and start the game; Play	Current state of board during the turn	Player has a choice of moving their ship and turning their ship
SE-FR11-007	FR11	Check that turning the ship is not a choice if they are in a port	Ship at the Home Port	Move options	Valid port moves presented

SE-FR11-008	FR11	Check that the game indicates all legal squares that can be moved to if they are in a port	Setup and start the game; Choose to move the ship	Move options highlighted	The game indicates all squares in all directions up to the distance value or until Island/edge of the board is reached and allows the player to select the square to move to
SE-FR11-009	FR11	Check that the game indicates all legal squares that can be moved to during that turn	Setup and start the game; Choose to move the ship	Move options highlighted	The game indicates all squares in the direction that they are facing, up to the distance value or until Island/edge of the board is reached and allows the player select the square to move to
SE-FR11-010	FR11	Check that the player must attack if he chooses to move to a square occupied by another player	Setup and start the game; Move to the square occupied by another player	Attack sequence (FR12)	Player attacks another player, who occupies that square
SE-FR11-011	FR11	Check that the player cannot attack another player on the coast of Treasure Island or in a port, as these squares are not legal choices for move	Play the game until a player is on the coast of treasure island, attempt to attack them	move denied	Attacking player cannot move to these squares

SE-FR11-012	FR11	Check that if the chosen move takes the player past another ship in a legal move, then the other player is asked whether they wish to attack the moving ship	Setup and start the game; Move the ship through a square occupied by another player	Pop-up window	The other player is asked by the game whether they wish to attack the moving ship
SE-FR11-013	FR11	Continuing Test SE-FR11-012.. If the player chooses to attack the moving player, they move to the stationary ship	As in SE-FR11-012	Pop-up window	The moving player is moved to the stationary attacking player and the attack sequence is followed
SE-FR11-014	FR11	Check that after any move not involving an attack the player is asked which direction they wish to turn their ship to	Setup and start the game; Move/turn the ship	Pop-up window with available directions they can turn to	The ship is turned to the chosen direction, unless they are in a port or the chosen direction is illegal (direction in which they cannot move at least one square)
SE-FR11-015	FR11	Check that the correct sequence is followed if the player is on a square adjacent to Treasure Island	Setup and start the game; Move the ship to the square adjacent to Treasure Island and wait until next turn	Pop-up window with the card's image and description	The sequence in FR13 is followed

SE-FR11-016	FR11	Check that the correct sequence is followed if the player is on a square adjacent to Flat Island	Setup and start the game; Move the ship to the square adjacent to Flat Island and wait until next turn	Pop-up window with all the treasure and cards collected (if any)	The sequence in FR14 is followed
SE-FR11-017	FR11	Check that the correct sequence is followed if the player is on a square representing a port	Setup and start the game; Move the ship to the square representing a port and wait until the end of the turn	Pop-up asking if they wish to trade or if no items to trade notification that trading is not available	The sequence in FR15 is followed
SE-FR12-001	FR12 - Attacking Rules	Check that the game compares the fighting strength of the two players fighting	Attack the player	Pop-up window displaying the winner of the fight	The game announces which player is the winner
SE-FR12-002	FR12	Check that if the loser has treasure in their ship, then the winner is awarded the treasure	Attack the player; Win the battle	Pop-up window displaying treasure/cards which have been stolen from the loser	Winner is awarded the treasure
SE-FR12-003	FR12	Check that if the winner cannot accommodate the treasure in their ship, then the extra treasure is returned to Treasure Island	Attack the player who has treasure on their ship, and when attacking ship has two pieces of treasure	Pop-up window advising that there is no space on the player's ship	Treasure is returned to Treasure Island

SE-FR12-004	FR12	Check that if the loser does not have treasure, but does have at least one card, then the two/one lowest card(s) are given to the winner	Attack the player, who does not have treasure on their ship	Pop-up window displaying stolen cards	The one/two lowest cards in loser's hand are given to the winner
SE-FR12-005	FR12	Check that the loser is allowed to make a legal move in any direction, followed by a change of direction	Attack the player; Lose the battle	Current state of board; Loser's turn	Loser must move at least one square
SE-FR12-006	FR12	Check that the winner after the battle remains in the direction they were already moving/facing	Attack the player; Win the battle	Current state of board	The winner remains in the direction they were already moving/facing
SE-FR13-001	FR13 - Treasure Island	Check that if the player at the end of their turn is next to Treasure Island, then they are dealt the top card from the Chance card pack	Move to the coast of Treasure Island	Pop-up window displaying the card's image and description	The player is dealt the top card from the Chance card pack
SE-FR13-002	FR13	Check that if the Chance card is given then the game will do what it says	Play game through until Chance card can be executed	Instruction on chance card followed	Chance card executed successfully

SE-FR14-001	FR14 - Flat Island	Check that if the player at the end of their turn is next to Flat Island, then they are awarded any treasure there (as long as they have room in their ship)	Move to the coast of Flat Island	Pop-up window displaying awarded treasure	The treasure from Flat Island is given to that player
SE-FR14-002	FR14	Check that if the player at the end of their turn is next to Flat Island and can accommodate only one treasure then they are awarded the most valuable treasure	Move to the coast of Flat Island with one pieces of treasure on the ship	Pop-up window displaying awarded treasure	The most valuable treasure is given to the player
SE-FR14-003	FR14	Check that if the player at the end of their turn is next to Flat Island then any cards on Flat Island are added to the player's hand	Move to the coast of Flat Island	Pop-up window displaying awarded cards	Any cards are added to the player's hand
SE-FR15-001	FR15 - Arriving at a port	Check that when a player arrives at their Home Port, any treasure in their ship is unloaded	Gain some treasure and come back to Home Port	Current state of board; Treasure unloaded	Any treasure in the ship is unloaded correctly

SE-FR15-002	FR15	Check that, when a player arrives at another port, they can trade if the port contains any treasure or cards to trade	Move to the port, which contains any treasure/cards	Pop-up window showing the values of each of their own cards and treasure, and of the available cards and treasure in the port	The player is able to select cards and treasure to trade of equivalent value on each side
SE-FR15-003	FR15	Check that a player can choose not to trade at the point of SE-FR15-002	As in SE-FR15-002	As in SE-FR15-002	The player can choose NOT to trade at this point
SE-FR15-004	FR15	Check that the game deals the trade correctly	As in SE-FR15-002; Make a trade	Pop-up window displaying available items to trade	The game checks that the two sets of choices have equivalent value, and trade is made
SE-FR15-005	FR15	Deposited cards at another players port can be added immediately to your hand	As in SE-FR15-002, trade treasure for deposited cards	Cards are added to your hand when in another port	Trade deposited cards, ownership goes from their port to your hand
SE-FR15-006	FR15	Certain in-hand chance cards are trade-able	As in SE-FR15-002, Trade an in hand chance card	Chance card traded	Ownership of chance card transferred
SE-FR16-001	FR16 - Anchor Bay	If chance cards 25 or 26 are in hand, exchange for max treasure possible	Chance cards in hand+position	Card swapped for max possible treasure	Ship full of treasure, Card no longer in hand
SE-FR17-001	FR17 - Detection of end of game	Check that when a player reaches their Home Port it updates the value of treasure in their Home Port	Setup and start the game; Get a treasure and come back to your Home Port	Current state of board; Scoreboard updated	The value of treasure at player's Home Port increases correctly

SE-FR17-002	FR17	Check that when a player has at least 20 points of treasure at their Home Port then he wins and game is finished	Setup and start the game; Get a treasure and come back to your Home Port until you reach at least 20 points at your Home Port	Pop-up window displaying the winner	The game is finished
SE-FR17-003	FR17	Check that the game shows that the game is finished and give the players the choice what to do next	As in SE-FR17-002	Pop-up window displaying the winner with choices what to do next	Game announces finished game and give the players the choice of terminating or starting another game

2.1.2 External Interface Requirements

SE-EIR1-001	EIR1 - Appearance of Interface	Check that the UI uses Microsoft Windows standards for the appearance of scroll bars, buttons, menu etc where appropriate	Run the game	Game window	The UI uses Microsoft Windows standards for the appearance
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2.1.3 Performance Requirements

SE-PR1-001	PR1 - Response of program to user input	Check that any user input is appropriately reflected on the screen within one second	Setup and start the game; Play (Input something)	System window	Any user input is appropriately reflected on the screen within one second
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SE-PR2-001	PR2 - Target computer for system	Check that all software produced runs correctly on standard PCs in the Department	Setup and start the game on standard PC in the Department; Play	System window	Software runs correctly on standard PCs in the Department
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2.2 Other Requirements

2.2.1 Chance Card Implementation

SE-C1-001	C1 - Taking Crew Cards	The specified (or maximum) number of cards is removed from the source	Crew card deck	Crew cards dealt from the top until required amount or max is reached, whichever is smaller	Cards allocated successfully
SE-C2-001	C2 - Selecting treasure or cards	Upon using a Chance card which gives you a choice of treasure or crew cards, if there aren't enough/none of one or the other you are informed/forced to choose the other instead	Chance card played	Max treasure possible is collected, choice suggested or forced if one or other isn't available	Choice offered/forced if chance card allows it, and there's insufficient trade-able material
SE-CC-001	CC - Chance Cards	Check that each Chance Card is implemented and works correctly as specified	Pack of Chance cards	Current state of board/Pop-up window displaying appropriate information	Each Chance card is dealt by the system correctly

REFERENCES

- [1] *Software Engineering Group Projects* Buccaneer Online Board Game Requirements Specification
C. J. Price, SE.QA.RS - CS22120, 1.1 Release.

DOCUMENT HISTORY

Version	CCF No.	Date	Changes made to Document	Changed by
0.1	N/A	2017-02-05	Initial creation	JUW30
0.2	N/A	2017-02-27	Update following review meeting	ROB27