**Software Engineering Group Project**

**Testing Specification**

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# 1 Introduction

## 1.1Purpose of this Document

The purpose of this Document is to display all the system tests we have made to be carried out once the game has been made.

## 1.2 scope

In this document is going to be a table with all the system tests on.

### 1.3 objectives

The objective of this document is to show the all the testing that needs to be complete after the game is made

# 2 Testing

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| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| ID | FR | Content | Input | Expected Output | Pass Criteria |
| 1 | FR1 | Detection for exceeding the legal character limit for name input | Use all letters and all numbers as a name for player 1. | Game shouldn't recognise this name input as legal | Error  message pops  and name  isn’t stored |
| 2 | FR1 | Detection for usage of special characters | Use one of these symbols in the name of player 1:  ^%$£@ | The game should allow this | Player name is saved with special character |
| 3 | FR1 | Entering a name with all characters to be capital letter | For player 1 enter name: "MICHAEL".  For player 2: "SARAH". For player 3: "TOM".  For Player 4:  "TONY".  Input a legal name for all other players and click start. | The game should start normally | Game starts |
| 4 | FR1 | Entering a legal names | For player 1 enter as name: "Michael". For player 2: "Sarah". For player 3: "Tom".  For Player 4:  "Tony". | The game should recognise these as legal name inputs and allow the  option to start game | Game starts |
| 5 | FR1 | Check If the game starts correctly, showing all of the correct GUI elements once the game has started. | First do test four then Click the start game button. | The GUI should display the main gameboard, with all correct elements, such as the background | Game is started and the board is displayed |
| 6 | FR2 | Testing randomness | First do test four then start and exit the game 5 times with the same | At least 2 out of 5 times Michael should get assigned different port as Home port. | “Michael” is assigned 2 different ports during the multiple game start up |

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|  |  |  | combination of names. Record which home port "Michael" gets assigned each time you started the game. |  |  |
| 7 | FR2 | Testing randomness | First do test four then Start and quit the game until Michael has been assigned at least 3 of the possible Home ports. Stop if this doesn't happen in 24 tries. | Michael should have had at least 3 different ports as Home port within 24 tries. | Michael is assigned 3 different ports during the multiple game start up |
| 8 | FR3 | Testing If the queue of cards is randomly ordered every new start of a game? | Start the game and record all 20 crew cards that the players  hold. (If necessary change their turns to see them). After the record is made exit the game. Do this one more time. | The sequence of crew cards for all players should be different the second time. | All players are assigned different cards on the multiple start ups |
| 9 | FR3 | Testing a returned card. | Play the game until 1 of the players get chance card 10. | Card 10 sends the best crew card to go at the bottom of the crew cards deck on Pirate Island | Player obtains card 10 and his highest value crew is sent to the bottom of the crew deck |
| 10 | FR4 | Checking if card 21 can be kept | When a player gets card 21 end the turn. | The chance card should be present at the player's hand on the next turn | Player obtains card 21 and is displayed in his hand |
| 11 | FR4 | Checking if card 23 can be kept | When a player gets card 23 end the turn. | The chance card should be present at the player's hand on the next turn | Player obtains card 23 and is displayed in his hand |

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| 12 | FR4 | Checking if card 24 can be kept | When a player gets card 24 end the turn. | The chance card should be present at the player's hand on the next turn | Player obtains card 24 and is displayed in his hand |
| 13 | FR4 | Checking if card 25 can be kept | When a player gets card 25 end the turn. | The chance card should be present at the player's hand on the next turn | Player obtains card 25 and is displayed in his hand |
| 14 | FR4 | Checking if card 26 can be kept | When a player gets card 26 end the turn. | The chance card should be present at the player's hand on the next turn | Player obtains card 26 and is displayed in his hand |
| 15 | FR4 | Testing the random order of chance cards in Treasure Island every new game. | Start the game and let player 1 draw a chance card. After player 1 do the same with the other players. Record which chance card each player had. Exit the game and do this once more. | At least 1 player should have a different chance card the second time. | Players obtain a different chance card then they did on the first round |
| 16 | FR5 | Testing if a treasure can be assigned to a ship. | Keep picking up chance cards until you get one that allows you to take treasure | The treasure should be assigned to the players ship | The treasure is in the payers ship |
| 17 | FR5 | Assigning treasure to ports | Let a player bring back a diamond to his Home Port. | When the diamond gets assigned to the port the current player's score should be incremented with  5. | Player’s score is updated +5 upon return to home port |
| 18 | FR5 | The holding of maximum of two treasures on a ship. | When player 1 has 2 treasures on board - attempt to obtain another treasure. | The game should clearly inform that the current player has the maximum amount of treasures possible to have on board. | The game informs the player that he has maximum treasure |
| 19 | FR5 | Automatic unloading of treasures to ports upon arrival | Start the game and let 1 player take any treasure from flat island. Then let this player go on the square of his | The treasure should be removed from the ship's holdings and be placed in the Home Port's treasure array. | The treasure is removed from the players ship and is placed in the home port |

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|  |  |  | Home Port. |  |  |
| 20 | FR5 | Test the value of a barrel of rum. | In the beginning of the game when every  player's score is 0 - let player 1 acquire a barrel of rum. Then let player 1 bring this treasure to his Home Port. | Player 1's score should become 2. | Player’s score is updated to  2 |
| 21 | FR5 | Test the value of a pearl. | In the beginning of the game when every  player's score is 0 - let player 1 acquire a pearl.  Then let player 1 bring this treasure to his Home Port. | Player 1's score should become 3 | Player’s score is updated to  3 |
| 22 | FR5 | Test the value of a gold bar. | In the beginning of the game  when every  player's score is 0 - let player 1 acquire a gold bar. Then let player 1 bring this treasure to his Home Port. | Player 1's score should become 4 | Player’s score is updated to  4 |
| 23 | FR5 | Test the value of a ruby. | In the beginning of the game when every  player's score is 0 - let player 1 acquire a ruby. Then let player 1 bring this treasure to his Home Port. | Player 1's score should become 5 | Player’s score is updated to  5 |
| 24 | FR5 | Test the value of a diamond | In the beginning of the game when every  player's score is 0 - let player 1 acquire a diamond. Then let player 1 bring this treasure to his | Player 1's score should become 5. | Player’s score is updated to  5 |

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|  |  |  | Home Port. |  |  |
| 25    this is a unit test | FR5 | Whether all treasures are present at the  beginning of the  game | Inspect the array of all available treasures after the Game Setup () method.  Check the sum of all treasures in it. | The sum of treasures should come up to be 76. | The treasures  all equal 76 |
| 26 | FR6 | When player one has 0 crew cards try moving 2 squares ahead | When the player has no  more crew  cards in his hand, but is the beginning of his turn- try and click the second square ahead. (shouldn't be highlighted) | Nothing should happen. | The ship position stays the same |
| 27 | FR6 | Calculating of the fighting strength - attacking player wins | Start a fight  between two players. Make sure the attacking player has more fighting power then the defence player. | The attacking player should be announced as a winner. | A pop up is shown stating that the attacking player has won |
| 28 | FR6 | Calculating of the fighting strength - draw. | Start a fight  between two players. Make sure the two players have the same sum for as  fighting strength. | No winner should be announced. | A pop up is shown stating a draw |
| 29 | FR6 | Calculating of the fighting strength - attacking player loses | Start a fight  between two players. Make sure the attacking player has less fighting power than the defending player. | The game should announce that the attacking player loses and the winner is the player who is defending. | A pop up is shown stating that the defending  player has won |
| 30 | FR7 | Keeping information about treasures - after treasure is | Begin the game. Player 1 should have a score set to 0 at this | The score of player one should become  4. | The player deposits a treasure worth 4 in his |

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|  |  | deposited | point. Let player 1 bring two treasures of type barrel of rum to his  Home Port. |  | homeport |
| 31 | FR7 | Keeping information about treasures - after trade | When player 1 has the two barrels in his port let player two arrive there and exchange 1 crew card if his with a value of 2 with one barrel. | Player 1's score should decrement with 2, so it has to become 2. | Player 1’s score should decrease by 2 |
| 32 | FR8 | Check that treasure can be deposited at flat island | Go to flat island and deposit some treasure | treasure is deposited | Treasure is removed from the player’s hold and put on Flat Island |
| 33 | FR8 | Check that cards can be deposited at flat island | Go to flat island and deposit some cards | Cards are deposited | Cards are removed from the player’s hand and moved to Flat  Island |
| 34 | FR9 | Game should display only one available square to move if player has no crew cards | try moving two squares | the game should decline moving two squares and only one square ahead should be displayed as movable square | The player stays in the same position |
| 35 | FR9 | Go to top right of | go to the top | should not be able | The player |
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|  |  | the grid and try to turn north | right of the grid | to turn north | moves to the top right of the grid and faces the same position |
| 36 | FR9 | Go to the top right of the grid and try to turn north, east | go to the top right of the grid and try to turn north, east | should not be able to turn north east | The player moves to the top right of the grid and faces the same position |
| 37 | FR9 | Go to the top right of the grid  and try to move east | go to the top right of the grid  and try to move east | should not be able to turn east | The player moves to the top right of the grid and faces the same position |
| 38 | FR9 | Go to the top right of the grid and try turning south east | go to the top right of the grid and try turning south east | should not be able to turn south east | The player moves to the top right of the grid and faces the same position |
| 39 | FR9 | Go to the top right of the grid and try to turn south | go to the top right of the grid and try to turn south | should be able to turn south | The player moves to the top right of the grid and faces the south |
| 40 | FR9 | Go to the top right of the grid and try to turn south west | go to the top right of the grid and try to turn south west | should be able to turn south west | The player moves to the top right of the grid and faces the south west |
| 41 | FR9 | Go to the top right of the grid and try to turn west | go to the top right of the grid and try to turn west | should be able to turn west | The player moves to the top right of the grid and faces the west |
| 42 | FR9 | Go to the top right of the grid and try to turn north west | go to the top right of the grid and try to turn north west | should not be able to turn north west | The player moves to the top right of the grid and faces the same position |
| 43 | FR9 | Go to top left of the grid and try to turn north | go to the top left of the grid | should not be able to turn north | The player moves to the top left of the grid and faces the same position |

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| 44 | FR9 | Go to the top left of the grid and try to turn north, east | go to the top left of the grid and try to turn north, east | should not be able to turn north east | The player moves to the top left of the grid and faces the same position |
| 45 | FR9 | Go to the top left of the grid and try to move east | go to the top left of the grid  and try to move east | should be able to turn east | The player moves to the top left of the grid and turns to face east |
| 46 | FR9 | Go to the top left of the grid and try turning south east | go to the top left of the grid and try turning south east | should be able to turn south east | The player moves to the top left of the grid and turns to face south east |
| 47 | FR9 | Go to the top left of the grid and try to turn south | go to the top left of the grid and try to turn south | should be able to turn south | The player moves to the top left of the grid and turns to face south |
| 48 | FR9 | Go to the top left of the grid and try to turn south west | go to the top left of the grid and try to turn south west | should not be able to turn south west | The player moves to the top left of the grid and faces the same position |
| 49 | FR9 | Go to the top left of the grid and try to turn west | go to the top left of the grid and try to turn west | should not be able to turn west | The player moves to the top left of the grid and faces the same position |
| 50 | FR9 | Go to the top left of the grid and try to turn north west | go to the top left of the grid and try to turn north west | should not be able to turn north west | The player moves to the top left of the grid and faces the same position |
| 51 | FR9 | Go to the bottom right of the grid and try to turn north | go to the bottom right of the grid | should be able to turn north | The player moves to the bottom right of the grid and turns to face north |
| 52 | FR9 | Go to the bottom right of the grid and try to turn north, east | go to the bottom right of the grid and try to turn north, east | should not be able to turn north east | The player moves to the bottom right of the grid and faces the same position |

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| 53 | FR9 | Go to the bottom right of the grid  and try to move east | go to the bottom right of the grid and try to move east | should not be able to turn east | The player moves to the bottom right of the grid and faces the same position |
| 54 | FR9 | Go to the bottom right of the grid and try turning south east | go to the bottom right of the grid and try turning south east | should not be able to turn south east | The player moves to the bottom right of the grid and faces the same position |
| 55 | FR9 | Go to the bottom right of the grid and try to turn south | go to the bottom right of the grid and try to turn south | should not be able to turn south | The player moves to the bottom right of the grid and faces the same position |
| 56 | FR9 | Go to the bottom right of the grid and try to turn south west | go to the bottom right of the grid and try to turn south west | should not be able to turn south west | The player moves to the bottom right of the grid and faces the same position |
| 57 | FR9 | Go to the bottom right of the grid and try to turn west | go to the bottom right of the grid and try to turn west | should be able to turn west | The player moves to the bottom right of the grid and turns to face west |
| 58 | FR9 | Go to the bottom right of the grid and try to turn north west | go to the bottom right of the grid and try to turn north west | should be able to turn north west | The player moves to the bottom right of the grid and turns to face north west |
| 59 | FR9 | Go to bottom left of the grid and try to turn north | go to the bottom left of the grid | should be able to turn north | The player moves to the bottom left of the grid and turns to face north |
| 60 | FR9 | Go to the bottom left of the grid and try to turn north, east | go to the bottom left of the grid and try to turn north, east | should be able to turn north east | The player moves to the bottom left of the grid and turns to face north east |
| 61 | FR9 | Go to the bottom left of the grid  and try to move east | go to the bottom left of the grid and try to move east | should be able to turn east | The player moves to the bottom left of the grid and |

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|  |  |  |  |  | turns to face east |
| 62 | FR9 | Go to the bottom left of the grid and try turning south east | go to the bottom left of the grid and try turning south east | should not be able to turn south east | The player moves to the bottom left of the grid and faces the same position |
| 63 | FR9 | Go to the bottom left of the grid and try to turn south | go to the bottom left of the grid and try to turn south | should not be able to turn south | The player moves to the bottom left of the grid and faces the same position |
| 64 | FR9 | Go to the bottom left of the grid and try to turn south west | go to the bottom left of the grid and try to turn south west | should not be able to turn south west | The player moves to the bottom left of the grid and faces the same position |
| 65 | FR9 | Go to the bottom left of the grid and try to turn west | go to the bottom left of the grid and try to turn west | should not be able to turn west | The player moves to the bottom left of the grid and faces the same position |
| 66 | FR9 | Go to the bottom left of the grid and try to turn north west | go to the bottom left of the grid and try to turn north west | should not be able to turn north west | The player moves to the bottom left of the grid and faces the same position |
| 67 | FR9 | Go to Anchor Bay and try to turn into Anchor Bay | Go to Anchor Bay and try to turn into Anchor Bay | Should not be able to turn Anchor Bay | The player moves to the bottom left of the grid and faces the same position |
| 68 | FR10 | At the beginning all trading ports sum of treasure value should be 8. | Check all ports information. | All trading ports' treasures' value should be 8. | The value of trading ports are equal 8 on start up |
| 69 | FR10 | At the beginning all trading ports must have 2 crew cards each. | Check all ports information. | All trading ports should have 2 crew cards. | The trading contain 2 crew cards on start up |
| 70 | F11 | Check if all move spaces are highlighted. | The user makes a move. | All squares were the player can move are highlighted and clickable. | The GUI shows highlighted squares were  the player can move |

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| 71 | F11 | Check if the ship has moved after first square has been selected. | Users inputs the first highlighted square. | The ship moves to the first square. | The user’s position is moved to the selected highlighted square |
| 72 | F11 | Check if the ship has moved after the maximum highlighted  square it can move has been selected. | Users inputs the maximum  highlighted square. | The ship moves to the maximum square. | The user’s position is moved to the selected highlighted square |
| 73 | F11 | Check if the ship has moved after the square that is one more than  the maximum highlighted square has been selected. | Users inputs the square that is one more than the maximum highlighted square. | An error is thrown and the ship cannot move. | The user’s position is not changed and a error is thrown |
| 74 | F11 | Check if the ship has moved after 20,20 has been selected when the player is at 1,2. | Users inputs the square at 20,20. | An error is thrown and the ship cannot move. | The user’s position is not changed and a error is thrown |
| 75 | F11 | Check if an attack  commences when  the player selects a square with another player sitting on it. | User inputs a position for the ship to move to that contains another ship. | An attack commences. | A pop up showing the battle has  commenced |
| 76 | F11 | Check if the ship can turn North. | User inputs that the ship turns North. | The ship turns North. | The user turns to face north |
| 77 | F11 | Check if the ship can turn North East. | User inputs that the ship turns North East. | The ship turns North East. | The user turns to face North East |
| 78 | F11 | Check if the ship can turn East. | User inputs that the ship turns East. | The ship turns East. | The user turns to face East |
| 79 | F11 | Check if the ship can turn South East. | User inputs that the ship turns South East. | The ship turns South East. | The user turns to face South East |
| 80 | F11 | Check if the ship can turn South. | User inputs that the ship turns South. | The ship turns South. | The user turns to face South |
| 81 | F11 | Check if the ship can turn South West. | User inputs that the ship turns South West. | The ship turns South West. | The user turns to face  South West |

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| 82 | F11 | Check if the ship can turn West. | User inputs that the ship turns West. | The ship turns West. | The user turns to face West |
| 83 | F11 | Check if the ship can turn North West. | User inputs that the ship turns North West. | The ship turns North West. | The user turns to face North West |
| 84 | F11 | Check that after a player has moved, they can turn their ship. | User makes a move. | The player can turn after movement. | The user has the option to turn |
| 85 | F11 | Check that when the player moves to a port, the ports functionality runs. | The user moves to a port. | The port functionality runs. | A pop up is shown for the port |
| 86 | F11 | Check that when the player moves to treasure island, the treasure island functionality runs. | The user moves to Treasure Island. | The Treasure Island functionality runs. | A pop up is shown for Treasure  Island |
| 87 | F11 | Check that when the player is on the Left edge of the board, they can't turn towards edge. | The user tries to turn towards the Left edge. | The user cannot turn towards the Left edge. | The user faces the same position |
| 88 | F11 | Check that when the player is on the Right edge of the board, they can't turn towards edge. | The user tries to turn towards the Right edge. | The user cannot turn towards the Right edge. | The user faces the same position |
| 89 | F11 | Check that when the player is on the Top edge of the board, they can't turn towards edge. | The user tries to turn towards the Top edge. | The user cannot turn towards the Top edge. | The user faces the same position |
| 90 | F11 | Check that when the player is on the Bottom edge of the board, they can't turn towards edge | The user tries to turn towards the Bottom edge | The user cannot turn towards the Bottom edge | The user faces the same position |
| 91 | F11 | Check that when a player moves through another player's ship, the player that has been moved through chooses | The second player chooses to attack the first player | An attack commences | A pop up is shown if the second user wants to attack the first user, which is accepted and |

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|  |  | to attack |  |  | then a battle pop up is shown |
| 92 | F11 | Check that when a player moves through another player's ship the, the player that has been moved through chooses not to attack | The second player chooses not to attack the first player | The first user moves to the highlighted square he selected | A pop up is shown if the second user wants to attack the first user, which is declined and then the first user moves to the position selected |
| 93 | F11 | Check that when a player tries to attack another player in port, they cannot attack | The first player tries to attack the second when the second player is in a port | An attack should not commence | No attack pop up is shown |
| 94 | F11 | Check that when a player tries to attack another player in Treasure Island they cannot attack | The first player tries to attack the second when the second player is on Treasure  Island | An attack should not commence | No attack pop up is shown |
| 95 | F11 | Check if the ship can turn in a port | The user tries to turn in the port | The ship should not be able to turn | The user faces the same position |
| 96 | F11 | Check if the ship can move through an island | The user tries to move through an Island | The ship should not be able to move through the island | The user stays in the same position |
| 97 | F11 | Check that the player that is  assigned London goes first | The user is assigned London | The user with  London goes first | The player that is assigned London has the option to move first |
| 98 | F11 | Check that the user cannot move off the Left edge | The user tries to move off the Left Edge | The user cannot move off the Left edge | The player stays in the same position |
| 99 | F11 | Check that the user cannot move off the Right edge | The user tries to move off the Right Edge | The user cannot move off the Right edge | The player stays in the same position |
| 100 | F11 | Check that the user cannot move off the Top edge | The user tries to move off the Top Edge | The user cannot move off the Top edge | The player stays in the same position |
| 101 | F11 | Check that the user cannot move off the Bottom  edge | The user tries to move off the Bottom Edge | The user cannot move off the Bottom edge | The player stays in the same position |

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| 102 | F11 | Check that when the user turns at 20,1 the user cannot turn into the corner | The user tries to turn at 20,1 | The user is unable to turn towards the corner | The player faces the same position |
| 103 | F12 | Check if the battle compares cards and a winner and loser is decided | The first user enters battle with the second user when the first user has a higher value crew cards | The first user wins | A pop up is shown stating that the first user has won |
| 104 | F12 | Check that the loser treasure is given to winner | The loser has two treasure and the winner is carrying no treasure | The loser's treasure  is given to the winner | A pop up is shown and the treasure from the loser’s hold is given to the winner |
| 105 | F12 | Check that the loser treasure is sent to Treasure  Island | Winner has full treasure | The loser's treasure  is return to Treasure Island | The treasure from the loser’s hold is returned to treasure Island |
| 106 | F12 | Check that the one of the loser's 2 treasure goes to  Treasure Island | The Winner has one treasure in the hold, and the loser has 2 treasure | The winner takes one treasure, and the loser's other treasure is sent to Treasure Island | A pop up is shown and one treasure is taken from the loser’s hold by the winner |
| 107 | F12 | Check that the loser's two lowest value cards are given to the winner | Loser has no treasure | The loser's two lowest cards are given to the winner | A pop up is shown and the loser’s lowest cards are given to the winner |
| 108 | F12 | Check that the loser's lowest value card is given to the winner | Loser has no treasure and only one crew card | The loser's lowest card is given to the winner | A pop up is shown and the loser’s lowest card are given to the winner |
| 109 | F12 | Check that the  loser moves to the first highlighted square after losing | The loser selects the first square that is highlighted | The loser moves the first square after losing the battle | The loser moves to the selected highlighted square |
| 110 | F12 | Check if the loser has moved after | The loser inputs the maximum | The ship moves to the maximum | The loser moves to the |

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|  |  | the maximum highlighted  square it can move has been selected after loser has lost | highlighted square | square | selected highlighted square |
| 111 | F12 | Check if the loser has moved after the square that is one more than  the maximum highlighted square has after loser has lost | The loser inputs the square that is one more than the  maximum  highlighted square | An error is thrown and the ship cannot move | The loser stays in position |
| 112 | F12 | Check if the loser has moved after 20,20 has been selected when the player is at  1,2 | The loser inputs the square at  20,20 | An error is thrown and the ship cannot move | The loser stays in position |
| 113 | F12 | Check that after the loser has moved a square, the loser can turn the ship | The loser moves one square and then turns | The loser moves then turns | The loser moves the highlighted square and then turns |
| 114 | F12 | Check that when there is a draw the ship that attack moves | The user that attacked moves away from the ship and no treasure is given | The user that attacks makes a legal move away | The user that attacks moves  to the selected highlighted square and loses no treasure |
| 115 | FR13 | Check if a player ends their turn adjacent to Treasure Island they get a card from the chance card deck | End turn by  Treasure Island | The user should receive the chance card at the top of the deck. | A pop up is shown that the user has drawn a chance card |
| 116 | FR13 | Check that when chance card 1 is drawn and the user is North of Treasure Island, and that the card  is played | The user picks up chance card 1 from the chance deck and is North of Treasure Island | The user is moved 5 squares North away from Treasure  Island | The user changes position to 5 squares North |
| 117 | FR13 | Check that when chance card 1 is drawn and the user is North East of Treasure | The user picks up chance card 1 from the chance deck and is North | The user is moved 5 squares North East away from Treasure  Island | The user changes position to 5 squares North  East |

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|  |  | Island, and that the card is played | East of Treasure Island |  |  |
| 118 | FR13 | Check that when chance card 1 is drawn and the user is East of Treasure Island, and that the card  is played | The user picks up chance card 1 from the chance deck and is East of Treasure Island | The user is moved 5 squares East away from Treasure  Island | The user changes position to 5 squares East |
| 119 | FR13 | Check that when chance card 1 is drawn and the user is South East of Treasure Island, and that the card is played | The user picks up chance card 1 from the chance deck and is South East of Treasure  Island | The user is moved 5 squares South East away from Treasure  Island | The user changes position to 5 squares South  East |
| 120 | FR13 | Check that when chance card 1 is drawn and the user is South of Treasure Island, and that the card  is played | The user picks up chance card 1 from the chance deck and is South of Treasure Island | The user is moved 5 squares South away from Treasure  Island | The user changes position to 5 squares South |
| 121 | FR13 | Check that when chance card 1 is drawn and the user is South West of Treasure Island, and that the card is played | The user picks up chance card 1 from the chance deck and is South West of  Treasure Island | The user is moved 5 squares South West away from Treasure  Island | The user changes position to 5 squares South  West |
| 122 | FR13 | Check that when chance card 1 is drawn and the user is North West of Treasure Island, and that the card is played | The user picks up chance card 1 from the chance deck and is West of Treasure Island | The user is moved 5 squares West away from Treasure  Island | The user changes position to 5 squares West |
| 123 | FR13 | Check that chance card 1 is drawn and the user is North West of Treasure Island, and that the card is played | The user picks up chance card 1 from the chance deck and is North West of  Treasure Island | The user is moved 5 squares North West away from Treasure  Island | The user changes position to 5 squares North  West |
| 124 | FR13 | Check that chance card 2 is drawn, and that the card is played | The user picks up chance card 2 from the chance deck | The user chooses another user to give them 3 crew cards | The user selects another player and is given 3 crew cards |
| 125 | FR13 | Check that chance card 7 is drawn and there | The user picks up chance card 7 from the | The user that is closest to the user that has the chance | The least valuable treasure is |

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|  |  | is only one ship nearby, and that the card is played | chance deck and one other user that has an empty hold is nearby | card is given the user with the chance card's least valuable treasure | removed from the user with the chance cards’ hold and given to the user that is closest |
| 126 | FR13 | Check that chance card 7 is drawn and there are two ships at equal distance nearby, and that the card is played | The user picks up chance card 7 from the chance deck and two other users are an equal distance from the user that has the chance card | Nothing happens | Nothing happens |
| 127 | FR13 | Check that chance card 7 is drawn, there is only one ship nearby and the user has no treasure, and that the card is played | The user picks up chance card 7 from the chance deck, one other user is nearby and the user has no treasure | The user that is closest to the user that has the chance card is given the 2 crew cards from user with the chance card | 2 crew cards from the user that has the chance card is given to the user that is closest |
| 128 | FR13 | Check that chance card 7 is drawn, there is only one ship nearby and the user has no treasure and 1 crew card, and that the card is played | The user picks up chance card 7 from the chance deck, one other user is nearby and the user has no treasure and 1 crew card | The user that is closest to the user that has the chance card is given the 1 crew cards from user with the chance card | The 1 crew card from the user that has the chance card is given to the user that is closest |
| 129 | FR13 | Check that chance card 9 is drawn, and that the card is played | The user picks up chance card 9 from the chance deck | The user's most valuable treasure is sent to flat island | The user’s most valuable treasure is removed from his hold and sent to flat  Island |
| 130 | FR13 | Check that chance card 9 is drawn, and that the card is played | The user picks up chance card 9 from the chance deck | The user's most valuable crew card is sent to flat island | The user’s most valuable  crew card is removed from his crew and sent to flat  Island |
| 131 | FR13 | Check that chance card 10 is | The user picks up chance card | The user's most valuable crew card | The user’s most valuable |

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|  |  | drawn, and that the card is played | 10 from the chance deck | is returned to the crew card pack | crew card is removed from his crew and added to the crew card deck |
| 132 | FR13 | Check that chance card 12 is drawn and the user has no treasure, and that the card is played | The user picks up chance card 12 from the chance deck | The user takes treasure that is equal to 4 | The user adds treasure that equal 4 to their hold |
| 133 | FR13 | Check that chance card 12 is drawn and the user has full treasure, and that the card is played | The user picks up chance card 12 from the chance deck | The user takes 2 crew cards from the deck | The user adds 2 crew cards to their crew |
| 134 | FR13 | Check that chance card 18 is drawn and the player has a crew less than/equal to 7, and that the card is played | The user picks up chance card 18 from the chance deck, has an empty hold and crew  value of less than/or more than 7 | The user takes treasure that is equal to 4 and 2 crew cards | The user adds treasure equal to 4 and 2 crew cards |
| 135 | FR13 | Check that chance card 18 is drawn the player has a crew more than 7, and that the card is played | The user picks up chance card 18 from the chance deck, has an empty hold and crew value of more than 7 | The user takes treasure that is equal to 4 | The use adds treasure equal to 4 to his hold |
| 136 | FR13 | Check that chance card 18 is drawn and the player has a crew less than/equal to 7 and a full hold, and that the card  is played | The user picks up chance card 18 from the chance deck and has a full hold and crew value of less than/ equal to 7 | The user takes 2 crew cards | The user adds 2 crew cards to his crew |
| 137 | FR13 | Check that chance card 18 is drawn and the player has a crew  more than 7 and a full hold, and that the card is | The user picks up chance card 18 from the chance deck and has a full hold and crew value of more | Nothing happens | Nothing happens |

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|  |  | played | than 7 |  |  |
| 138 | FR13 | Check that chance card 19 is drawn, and that the card is played | The user picks up chance card 19 from the chance deck | The user returns all of his crew cards to the bottom of the crew deck and adds the same amount of crew cards that he deposited to his hand | The user returns all of his crew cards  and gains the same number of cards from the crew deck |
| 139 | FR13 | Check that chance card 20 is drawn and there is no user near Treasure Island, and that the card  is played | The user picks up chance card 20 from the chance deck | The user places two of their lowest crew cards onto Treasure  Island | The users two lowest value crew cards are place on Treasure  Island |
| 140 | FR13 | Check that chance card 20 is drawn and there is one user near Treasure Island, and that the card  is played | The user picks up chance card 20 from the chance deck and there is one player near Treasure Island | The program randomly chooses 2 cards from each user to exchange | The user that picked up the chance card and the closest anchored user swap 2  random crew cards |
| 141 | FR13 | Check that chance card 20 is drawn and there is more than one user near  Treasure Island, and that the card  is played | The user picks up chance card 20 from the chance deck and there is more than one player near Treasure Island and chooses another player to swap with | The program randomly chooses 2 cards from the user who has the chance card and the user he chose to exchange | The user chooses another user to swap and then swap 2 random crew cards |
| 142 | FR13 | Check that chance card 22 is drawn and the user has a crew value equal/greater than 7, and that the card is played | The user picks up chance card 22 from the chance deck | The user chooses their extra crew cards to be returned to the deck | The user chooses the extra crew cards that then return to  Treasure Island |
| 143 | FR13 | Check that chance card 22 is drawn and the user has a crew less than 7, and that card is played | The user picks up chance card 22 from the chance deck and has a crew less than 7 | Nothing happens | The user has less than 7 crew, therefore the user is unaffected |

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|  | FR13 | Check that chance card 22 is drawn and the user has a crew greater than/equal to 7, the card not played | The user picks up chance card 22 from the chance deck and has a crew greater than 7 and he chooses the surplus crew cards to be buried | The surplus crew cards are buried at pirate island. | The user chooses the surplus cards that are removed from his crew and are buried at Pirate Island |
| 144 | FR13 | Check that chance card 24 is drawn, and that the card is played | The user picks up chance card 24 from the chance deck | The user holds the card | The card is added to the user’s hand |
| 145 | FR13 | Check that when the user has chance card 24 and enters a port and has an empty hold | The user holds chance card 24 and enters a port an empty hold | The user can trade the chance card for treasure up to a value of 4 | The card is removed from his hand and treasure up to  a value of 4 is added to the hold |
| 146 | FR13 | Check that when the user has chance card 24 and enters a port and has a full hold | The user holds chance card 24 and enters a port with a full hold | Nothing Happens | The card is kept in the player’s hand |
| 147 | FR13 | Check that when the user has chance card 24 and enters their home port | The user holds chance card 24 and enters their home port | Nothing happens | The card stays in his hand |
| 148 | FR14 | End turn by flat island with no treasure and see if you receive all the possible treasure you can fit on your ship | End turn by flat island with an empty cargo | If the user does end their turn next to flat island they will be rewarded all of the treasures that are on the island, if they can carry them on their ship. | Treasure is added from  Flat Island to the user’s hold |
| 149 | FR14 | End turn by flat island and see if you receive all the possible cards you can fit on your ship | End turn by flat island | If the user does end their turn next to flat island they will be rewarded all of the cards that are on the island, if they can carry them on their ship. | Crew cards are added from Flat Island to your |

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| 150 | FR14 | End turn by flat island with one treasure and see if you receive all the possible you can fit on your ship | End turn by flat island with one treasure | If the user does end their turn next to flat island they will be rewarded all one treasure | The user one treasure is added to the user’s hold |
| 151 | FR14 | Check what happens if a user leaves their ship next to flat island at the end of their turn with no more room in their ship. | End turn by flat island with a full cargo | They will not gain any treasures as they do not have the sufficient room in their ship to hold any of it also the treasures will remain on the island until someone is able to carry them. The user is given the cards on flat island | The user receives no treasure |
| 152 | FR15 | Check that when a player arrives at their home port that their treasure is unloaded and that they receive their points from the treasure. | Player arrives at home port with two treasure | When the user arrives at their port that the treasure will be taken from their ship and they will be given the points equal to the treasure. | The user returns to their home port and the score is updated |
| 153 | FR15 | Check if they are able to trade crew members for treasure even if they don’t have room on their ship | The user enters a port with full crew and treasure | They shouldn’t be allowed to trade with the port | A pop up is shown stating that they can’t trade |
| 154 | FR16 | Check that the user can enter anchor bay with chance card 25 | The user enters anchor bay with chance card 25 | The user enters anchor bay and can trade for treasure | A pop up is shown stating they can trade |
| 155 | FR16 | Check that the user can enter anchor bay with chance card 26 | The user enters anchor bay with chance card 26 | The user enters anchor bay and can trade for treasure | The user enters anchor bay |
| 156 | FR16 | Check that when entering anchor bay without the card | The user tries to enter anchor bay without cards 25 or 26 | The code should see that the user does not have the required card and nothing should happen | The user does not enter anchor bay |
| 157 | FR17 | Check that when the user has | The user collects enough | The moment a user reaches 20 points, | The user’s score equals |
|  |  | acquired 20 points, he is declared the winner | treasure to equal 20 | they should be declared winner. | 20 and a pop up is shown stating the user’s victory |
| 158 | FR17 | Check that when the user has 19 points and then bring a treasure with value of 2 or  more to see if the user is still  declared winner after passing 20 points | The user has collected 19 points in treasure and deposits treasure with a  value of 2 or more | The moment a user reaches or goes past 20 points, they should be declared winner. | The user’s score is greater than 20 and a pop up is shown stating the user’s victory |
| 159 | FR17 | Check that when a user wins the game is there some kind of congratulations animation to show that the user has won the game. | The user collects enough treasure to equal 20 | When a user wins the game a winning animation should be displayed. | A pop up is shown stating victory |

3 Document History

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| Version | Changes | Changed by |
| 0.1 | Initial creation Added tests | Deo4 |
| 0.2 | Added tests | Lie4 |
| 0.3 | Added tests | Gmm11 |
| 0.4 | Added tests | Deo4 |
| 1.0 | Added introduction | Deo4 |
| 1.1 | Final checking and changes | Wgf |