

Group Project 07 - User Interface Specification

Typical use cases, PowerPoint presentation reference

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1 INTRODUCTION

1.1 Purpose of This Document

The purpose of this document is to provide a general look and description of the User Interface system. It also includes typical use cases of the Buccaneer game and expected program behaviour/visual changes.

1.2 Scope

This document lists and describes different use cases which (through the code given) refer to their visual description in the PowerPoint presentation. Each of them also refers to a particular functionality that is required from the program.

This document *does not* cover UI implementation (even the implementation design) as this is done in the Design Specification document. It's only a mere description of interface reacting to the user.

Every project member involved in implementing user interface should read this document.

1.3 Objectives

The objective of the document is to consider different scenarios that can happen while using the software and react appropriately, covering as much as possible and making sure that every user action is handled as it should. This reduces a possibility of designing the system in a wrong way and helps spot different flaws in the UI features before trying to implement them reducing risks like bugs in software and inefficient design requiring changes.

2 TYPICAL USER

This section identifies each possible type of user. In this application there will be only one type of a user, which would be one of four players. Each of these players will have the same set of needs from the application.

2.1 A Player

A player can be a person in a various age groups who likes to play games and wishes to play a Buccaneer Online Board Game. The users may have a different experience in using the computer, however it does not stop them to play a game as a User Interface should be intuitive. They may not know the rules of the game, so they need to have an access to the description of these rules. Each player would like to keep their cards not visible to the other players to make their chance of winning higher. Each player wants to win the game.

3 USE CASES

3.1 [U01] Starting the software

After starting the program executable, the main menu window should show up with "The Buccaneer" title and the following buttons on the screen:

- **Start Game** - Pressing this button should proceed to the Game Setup screen[U04].

- **Rules** - Pressing this button should proceed to the Rules screen [U02]
- **Credits** - Pressing this button should proceed to the Credits screen[U03]
- **Exit** - Allows the user to close the software and should do so upon clicking on the button.

3.2 [U02] Rules screen

This window/screen should display the basic rules of the Buccaneer board game (according to the project requirements) explaining the conditions of victory, showing what different pictures in the game represent (ports, cards etc.) and what their functionality is. User should be able to move between screens in the 'Rules' window using arrows in the bottom of the screen pointing left/right (each screen displaying and explaining different parts of the game, like fighting, trading, moving etc.).

3.3 [U03] Credits screen

This windows/screen should display the names and surnames (with e-mail addresses) of the creators of the game. This would be the list of group members of the Software Engineering Group Project group 07.

3.4 [U04] Game Setup screen

This window should ask the users for 4 player names before the actual game can begin. It should consist of clearly marked 4 labels, specifying which player each name belongs to, and next to them four text boxes that allow the names to be typed in. There also should be two buttons available - one for going back to the title screen[U01] while clicking the other one (Start Game) should begin the game and proceed to the Main Game Screen[U05] while setting states: "game" to State.game, "turn" to State.t01, "action" to State.prepare. Sequence [U06] [Taking turns](#) should then start

3.5 [U05] Main Game Screen

This window should be visible at all times during the game, until a victor is chosen (with exceptions to pop-up windows and event screens). From this screen user should be able to obtain information like: positions of the ships, ports and islands; which player's turn it is as well as their sailing strength, score, contents of their port and ship. Based on the "**game**" state, the game window can display/behave in a different way:

- **State.game** - the board should display all the standard game information, current player's name with regards to the state of the "turn" (See [U06] [Taking turns](#)). Clicking on the "Pause" button will set the state to State.paused and proceed to [U07] [Pause Menu](#). Hovering over a port/island/ship should display that object's information (treasure, sailing strength, owner details). Pressing the "My Cards" button should execute sequence [U11] - [Player Sensitive Details Screen](#). Pressing the "Scoreboard" screen should execute sequence [U15] - [Scoreboard Screen](#).
- **State.paused** - the board should be visible, but darkened, and a pop-up window should be visible, as specified in [U07] [Pause Menu](#).
- **State.over** - the board should be visible, but darkened, and a pop-up window should appear, followed by the [U08] [Game-over Screen](#) sequence.

3.6 [U06] Taking turns

After the game has started, players should sequentially take turns. This keeps repeating as long as the state of "game" is State.game. Depending on the state of the "turn" variable (State.t01, State.t02.. State.t04) the game window should display current player's name. Each turn is lead by the "action" variable state:

- **[U06a] State.prepare** - this state is set at the start of the game and after each player's turn. It means that the current player's turn is beginning and they should press a button to begin making decisions and view their status. At this stage it should be impossible to see individual player's cards, as this state is used to let players 'switch' on the seat in-between turns, without disclosing sensitive information. Button "More info" should not be available at this point of the game. Clicking the ready/begin turn button should change the "action" state to State.move and follow the [\[U06b\] sequence](#).
- **[U06b] State.move** - this state is set after the player accepted that it's their turn. Player is able to move. Rotating the ship happens by clicking the player's ship (selecting 0 steps to take) and selecting the direction to turn to (see [\[U09\] Turning the Ship](#)). The board should represent available squares to move to, by highlighting them. Pressing one of the squares should move the player's ship to that position.
 - If the player's ship is in their home-port, turning the ship is not possible (player has to move), but the player should be able move in all valid directions on the board (this should be represented by highlighting squares in all directions) and the sequence [\[U06n\] - Next Player](#) should be executed.
 - If the player's ship goes over/ends their turn on an another player's ship, the sequence [\[U10\] Attacking Other Ships](#) should be executed (attacking and/or passing through).
 - If the player's ship ends their turn on the coast of the Treasure Island, the sequence [\[U12\] Treasure Island Interaction](#) should be followed.
 - If the player's ship ends their turn in their Home Port, the sequence [\[U13\] Arriving at Home Port](#) should be followed.
 - If the player's ship ends their turn in another player's Home Port, or in a neutral (trading) port, the trading sequence [\[U14\] Arriving at Foreign Ports](#) should be followed.
 - If the player's ship ends their turn on the coast of the Flat Island, the sequence [\[U17\] Flat Island](#) should be followed.
 - If the player's ship ends their turn at the Anchor Bay, the sequence [\[U19\] Anchor Bay](#) should be executed.
 - If the player's ship ends the turn without being attacked/attacking the sequence [\[U09\] Turning the Ship](#) should be executed
- **[U06c] State.attmove** - this is similar to State.move, but is a result of moving after losing a fight. The player (specified by the state of the "attloser" field) can move in any direction and after moving, the sequence [\[U09\] Turning the Ship](#) should be executed.

[U06n] Next Player - If the current player's score is equal to or higher than 20, the sequence [\[U08\] Game-over Screen](#) should be executed. Otherwise the "turn" variable state should be set to State.t01/2/3/4 increasingly, depending on which player's turn has just ended, "action" state should be set to State.prepare and the screen should be updated.

3.7 [U07] Pause Menu

Upon displaying this window the game should pause and provide the user with options to resume the game (and hide the pause menu), go back to the main menu (which should close the current window and display the title screen[\[U01\]](#)) or exit the game completely, closing the program.

3.8 [U08] Game-over Screen

The game should be paused in a similar manner to [U07] [Pause Menu](#) and display the name of the player that won (has the treasure value above or equal to 20 in their port). The users should be given a choice to start another game, which should trigger the sequence [U04] [Game Setup Screen](#), or exit the game, which should shut the application down.

3.9 [U09] Turning the Ship

If the "action" state is State.turn, the player affected by this sequence should be the one specified by the "turn" variable.

If the "action" state is State.attmove, however, the player affected by this sequence should be the one specified by the "attloser" variable.

The user should be presented with all the available directions they can turn to. After the ship has been turned, sequence [U06n] [Next Player](#) should be followed.

3.10 [U10] Attacking Other Ships

If the player is passing through another player's ship to reach their destination, a confirmation dialog should appear for the stationary player (same as in [U06a] State.prepare). After confirming, another dialog should appear and show the stationary player their fighting strength, treasure held on both ships and ask if they wish to attack the passing player. If they refuse, the move should be completed and the sequence [U06n] [Next Player](#) should be followed.

If the static player decides to attack the other player (or it's the destination of the move), another screen should pop-up, claiming who the victor of the fight is, what treasure pieces (or cards) have been stolen from the loser, and specifying which player is going to make a move next (retreating from a fight). After clicking the confirmation button, the "attloser" variable state should be set to State.t01/2/3/4 depending on the losing player's number, the "action" variable should be set to State.attmove, the player screen should be updated, and the sequence [U06c] [State.attmove](#) should be followed. The fight should be enforced if the player ends their turn at another ship's position instead of just passing through.

3.11 [U11] Player Details Screen

This pop-up/window should display information regarding current player's cards that should be visible and accessible only by this particular player. A player should be able to check their current hand in terms of:

Crew cards: their colour, value and quantity. The fighting and sailing strength should be summarised and displayed to the user for an easy access as well.

Chance cards: these should also be displayed (the miniature images to distinguish a particular type of chance card) and pressing one of the miniatures should display the card's complete description (what it does, e.g. "You can trade this card at another port for X points worth in treasure).

3.12 [U12] Treasure Island Interaction

Upon arriving on the coast of the Treasure Island, a player should draw a chance card from it, which would be represented by displaying them a pop-up window with the card's image and description, followed by a confirmation button. After that, the card should either get added to the player's hand (a 'collectible' card) or an appropriate sequence from [U16] [Chance Cards](#) should be performed, followed by [U06n] [Next Player](#) sequence.

3.13 [U13] Arriving at Home Port

The player should be showed a pop-up informing them of what treasure has been transferred to their home port (if any) and current state of the port in terms of treasure types and their numbers (after the transfer). Pressing the confirmation button will then perform the [\[U06n\] Next Player](#) sequence.

3.14 [U14] Arriving at Foreign Ports

The player should be showed a pop-up asking them if they wish to trade with the port they ended their turn at. If there's no treasure or crew cards available at the port (or its owner's hand) the player should be notified that trading with this port is unavailable. If the player chooses not to trade (or the port's stock is empty), the sequence [\[U06n\] Next Player](#) should be executed.

If the player decides to trade with the port, they should be presented with a window displaying:

- Player ship's current stock (treasure items held)
- Player's crew cards (their hand)
- Player's tradable chance cards (if any)
- Treasure items stored at the port
- Port owner's (if any) crew cards, or crew cards stored in the port (if no owner)

The player should be able to manage items to include in the exchange by selecting them with a mouse. If a chance card is chosen during the trade, the conditions of that chance card have to be met as well (e.g. allowing user to select crew cards only on the port side). The values of items chosen for both sides should also be visible and up to date at all times for easier use. After choosing the treasure and/or cards, the player can confirm the trade (or cancel it). If the trade values are equal (and the ship has enough space for the trade to proceed), a confirmation dialog should appear and both parties' stock should be updated, followed by the [\[U06n\] Next Player](#) sequence (which should also happen if the trade gets cancelled).

3.15 [U15] Scoreboard/Player Statistics Screen

This screen should provide users with basic information about all the players currently participating in the game session. It should list all player names, display the types of treasure and their count both in each one's port as well as their ship, current score (based solely on their port's summarised treasure value), their sailing strength (based on their crew cards), any chance cards they are holding at the moment (miniatures clickable to see the details) and their crew card miniatures with values included (for trading overview). The cards should all be face-down - a player should not be allowed to distinguish between red and black crew cards of another player).

3.16 [U16] Chance Cards

Depending on the chance card picked up by a player and its number:

- [\[U16a\] #1, #3 - 6](#) - The player's ship should be moved appropriately (depending on the card's description) and (if specified) sequence [\[U18\] Pirate Island](#) followed by [\[U09\] Turning the Ship](#) (where applicable) and [\[U06n\] Next Player](#) should be executed.

- [U16b] #2 - The player should be presented with a choice of player (one of the remaining three) and three lowest-value crew cards should be taken from that player, displayed on the screen, and after confirmation added to current player's hand. The sequence [U06n] Next Player should follow.
- [U16c] #7 - 15, #23, #24, #27, #28 - Player should be shown the description of the card and what treasure items (if available)/crew cards/chance cards(and their value) were transferred, where from and where to (player ships, pirate/flat/treasure island, etc.). Sequence [U18] Pirate Island should be executed where applicable. Upon confirmation, the sequence [U06n] Next Player should follow.
- [U16d] #16-19 - Player should be shown the description of the card and which crew cards/treasure items have been removed/added. Sequence [U06n] Next Player should follow upon confirmation.
- [U16e] #20 - If another player is anchored at the Treasure Island, the player should be shown a list of players at the island and be able to choose one of them. Upon choosing, the cards removed and added (randomly selected 2 crew cards of each player) and their values should be displayed. If there are no other players at the treasure island, the window should show the two removed crew cards. Upon confirmation, sequence [U06n] Next Player should follow.
- [U16f] #21 - The player should be shown the description of the card (as well as conditions of use) and that it's been stored in their hand. Sequence [U06n] Next Player should follow upon confirmation.
- [U16g] #22 - The game should display all player names and list crew cards removed from each one of them (if any). Sequence [U06n] Next Player should follow upon confirmation.
- [U16h] #23-24 - The game should display the card's description and conditions of use, as well as informing the player that it's been stored in their hand. Sequence [U06n] Next Player should follow upon confirmation.
- [U16h] #25-26 - The game should display the card's description and conditions of use, as well as informing the player that it's been stored in their hand. Sequence [U06n] Next Player should follow.

3.17 [U17] Flat Island

The player should be shown a pop-up window with all the treasure and crew cards collected from Flat Island (if any). Sequence [U06n] Next Player should follow upon confirmation.

3.18 [U18] Pirate Island

A player should be shown the cards that have been taken from the Pirate Island. The following features should be listed:

- The number of cards
- Value of each card
- Colour of each card

3.19 [U19] Anchor Bay

If the player ends their turn at Anchor Bay and has #25 or #26 chance card in their hand, they should be displayed what Treasure has been moved from Treasure Island to their ship (if any), notified of their card being taken, and sequence [U06n] Next Player should follow. Nothing should happen if the above condition is not met.

4 ERROR CONDITIONS

4.1 [U04] - Game Setup Screen

The window should display error messages, when:

- one of the four text boxes is blank
ERROR MESSAGE: You need four players to start the game.
- one of the player's name is too long or contains special characters, which are not allowed
ERROR MESSAGE: The name should only contain letters, numbers and should not be longer than 25 characters.
- two of the players used the same names
ERROR MESSAGE: The name is already in use.

4.2 [U06] - Taking Turns

- If the player's ship is in their Home Port, turning the ship should be refused and error feedback provided.
- If the player wishes to move their ship to not allowed square, then the move should not be proceeded.
- Error message should be displayed if the player wants to attack another player on the coast of Treasure Island.

4.3 [U07] - Pause Menu

- If the players wish to exit the game completely, then the error message advising the users about losing the current state of game should be displayed.

4.4 [U14] - Arriving at Foreign Ports

- If the player chooses to trade at Foreign Port and chooses to take treasure, the error message should be displayed, if the player's ship does not have enough space for that treasure.
- If the player chooses to trade at Foreign Port and the value of the two set choices is not equivalent on both sides, then the trade should be refused and error message displayed.

4.5 [U16] - Chance Cards

- Every move, which is not obeying the general rules (regarding moving/trading) should be refused and followed by error message.

4.6 [U17] - Flat Island

- Error message should be displayed if there are no treasure/cards.

4.7 [U18] - Pirate Island

- Error message should be displayed if there are no cards.

REFERENCES

[1]

DOCUMENT HISTORY

Version	CCF No.	Date	Changes made to Document	Changed by
0.1	N/A	2017-02-24	Initial creation	KAC12, JUW30
0.2	N/A	2017-02-25	Added U01-U06, U09-U10	KAC12
0.3	N/A	2017-02-26	Added U07, U08, U11-U19	KAC12
0.4	N/A	2017-02-26	Added Error Conditions	JUW30
0.5	N/A	2017-02-27	Expanded main game screen view (line 69)	KAC12
0.6	N/A	2017-02-27	Fixed turning after moving, fixed attacking scenario	KAC12
1.0	N/A	2017-02-27	Release	KAC12