

## Object-Oriented Project Part 2 - INDIVIDUAL

**Name:** Shawn Polson

**Project:** Blackjack!

### Requirements:

- **UR-007** - "As a player, I can 'hit' during my turn."
- **UR-008** - "As a player, I can 'stand' during my turn."
- **UR-009** - "As a player, I can 'double' during my turn."
- **UR-010** - "As a player, I can 'split' during my turn if my first two cards are of the same denomination."

### Use Case Documents:

|                       |  |
|-----------------------|--|
| <b>Use Case ID:</b>   | UR-007   |
| <b>Use Case Name:</b> | Player chooses to "hit" during their turn.   |
| <b>Description:</b>   | Player hits to be dealt another card in an attempt to bring their hand closer to 21. |

|                          |   |   |  |
|--------------------------|---|---|--|
| <b>Actors:</b>           | Players   |   |  |
| <b>Pre-conditions:</b>   | Player has already placed their bet, and has already been dealt at least their first two cards. |   |  |
| <b>Post-conditions:</b>  | Player has another card added to their hand.  |   |  |
| <b>Frequency of Use:</b> | During each player's turn in which they choose to hit.  |   |  |
| <b>Flow of Events:</b>   |   | <b>Actor Action</b>                           | <b>System Response</b>   |
|                          | 1   | Player chooses "hit"                          | Dealer deals out another card, face up.  |
|                          | 2   | Player now has a new card added to their hand | Game checks to see if the player's hand totals greater than 21 (bet is lost if hand exceeds 21). |
|                          |   |   |  |
|                          |   |   |  |

|                         |   |
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| <b>Variations:</b>      | Player does not choose to hit during their turn |
| <b>Exceptions:</b>      |   |
| <b>Developer Notes:</b> |   |

|                       |   |
|-----------------------|---|
| <b>Use Case ID:</b>   | UR-008  |
| <b>Use Case Name:</b> | Player chooses to “stand” during their turn.              |
| <b>Description:</b>   | Player does not want another card, so they choose “stand” |

|                          |   |                                  |  |
|--------------------------|---|----------------------------------|--|
| <b>Actors:</b>           | Players   |                                  |  |
| <b>Pre-conditions:</b>   | Player has already placed their bet, and has already been dealt at least their first two cards. |                                  |  |
| <b>Post-conditions:</b>  | Player’s hand remains the same as it was.   |                                  |  |
| <b>Frequency of Use:</b> | During each player’s turn in which they choose to stand.  |                                  |  |
| <b>Flow of Events:</b>   |   |                                  |  |
|                          |   | <b>Actor Action</b>              | <b>System Response</b>                                 |
|                          | 1   | Player chooses “stand”           |  |
|                          | 2   | Player’s hand remains unchanged. | Player’s turn is now over; progress to the next player |
|                          |   |                                  |  |
| <b>Variations:</b>       | Player does not choose to stand during their turn   |                                  |  |
| <b>Exceptions:</b>       |   |                                  |  |
| <b>Developer Notes:</b>  |   |                                  |  |

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| <b>Use Case ID:</b>   | UR-009  |
| <b>Use Case Name:</b> | Player chooses to “double” during their turn.   |
| <b>Description:</b>   | Player “doubles down” on their bet, meaning they double the value of their bet and are dealt one more card. |

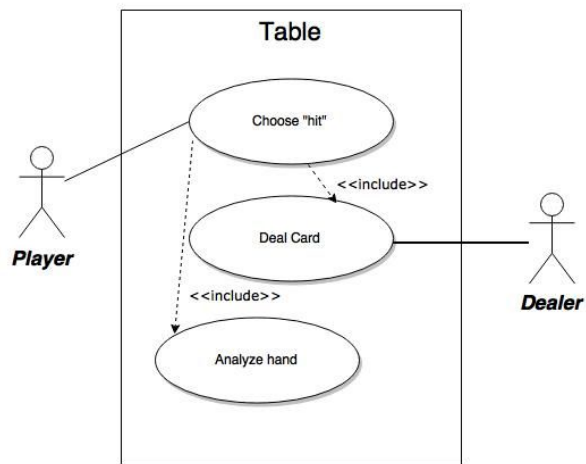
| <b>Actors:</b>           | Players  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
|--------------------------|--|--|--|--------------|-----------------|---|-------------------------|--|---|--|--|--|--|--|
| <b>Pre-conditions:</b>   | Player has already placed their bet, and has already been dealt at least their first two cards.  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| <b>Post-conditions:</b>  | Player has another card added to their hand and their bet has been doubled.  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| <b>Frequency of Use:</b> | During each player’s turn in which they choose to double.  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| <b>Flow of Events:</b>   | <table> <tr> <th></th><th>Actor Action</th><th>System Response</th></tr> <tr> <td>1</td><td>Player chooses “double”</td><td>Player’s bet is doubled; dealer deals out another card, face up.</td></tr> <tr> <td>2</td><td>Player now has a new card added to their hand and a doubled bet.</td><td>Game checks to see if the player’s hand totals greater than 21 (bet is lost if hand exceeds 21).</td></tr> <tr> <td></td><td></td><td></td></tr> </table> |  |  | Actor Action | System Response | 1 | Player chooses “double” | Player’s bet is doubled; dealer deals out another card, face up. | 2 | Player now has a new card added to their hand and a doubled bet. | Game checks to see if the player’s hand totals greater than 21 (bet is lost if hand exceeds 21). |  |  |  |
|                          | Actor Action   | System Response  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| 1                        | Player chooses “double”  | Player’s bet is doubled; dealer deals out another card, face up.                                 |  |              |                 |   |                         |  |   |  |  |  |  |  |
| 2                        | Player now has a new card added to their hand and a doubled bet.   | Game checks to see if the player’s hand totals greater than 21 (bet is lost if hand exceeds 21). |  |              |                 |   |                         |  |   |  |  |  |  |  |
|                          |  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| <b>Variations:</b>       | Player does not choose to double during their turn   |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| <b>Exceptions:</b>       |  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |
| <b>Developer Notes:</b>  |  |  |  |              |                 |   |                         |  |   |  |  |  |  |  |

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| <b>Use Case ID:</b>   | UR-010  |
| <b>Use Case Name:</b> | Player chooses to “split” during their turn.                |
| <b>Description:</b>   | Player’s first two cards were of the same denomination, and |

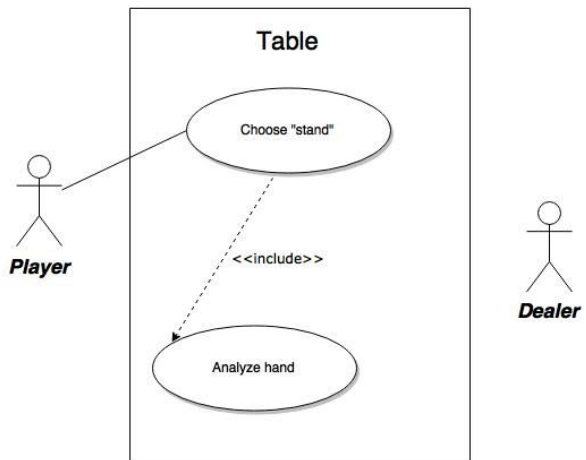
|  |                                   |
|--|-----------------------------------|
|  | they chose to “split” their hand. |
|--|-----------------------------------|

| <b>Actors:</b>           | Players  |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
|--------------------------|--|---|--|--------------|-----------------|---|------------------------|---|---|---------------------------------------|---|--|---|---|
| <b>Pre-conditions:</b>   | Player has already placed their bet, and has already been dealt their first two cards. Both of those cards have the same denomination.   |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| <b>Post-conditions:</b>  | Player’s hand has been split, making two hands, and a bet equal to their first bet has been placed on the new second hand.   |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| <b>Frequency of Use:</b> | During turns when a player’s first two cards are of the same denominations and that player chooses to split.   |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| <b>Flow of Events:</b>   | <table> <tr> <th></th><th>Actor Action</th><th>System Response</th></tr> <tr> <td>1</td><td>Player chooses “split”</td><td>Player’s second card is moved aside, and that player is now considered to have two hands from the resulting split (a bet equivalent to their first is placed on the second hand). Player is dealt another card to accompany their first card.</td></tr> <tr> <td>2</td><td>Player plays through their first hand</td><td>Dealer responds to the player until their first hand has been resolved; bet is won/lost accordingly. Player’s original second card is given back with an additional card (the second hand).</td></tr> <tr> <td></td><td>Player plays through their second hand.</td><td>Dealer responds to the player until their second hand has been resolved; bet is won/lost accordingly.</td></tr> </table> |   |  | Actor Action | System Response | 1 | Player chooses “split” | Player’s second card is moved aside, and that player is now considered to have two hands from the resulting split (a bet equivalent to their first is placed on the second hand). Player is dealt another card to accompany their first card. | 2 | Player plays through their first hand | Dealer responds to the player until their first hand has been resolved; bet is won/lost accordingly. Player’s original second card is given back with an additional card (the second hand). |  | Player plays through their second hand. | Dealer responds to the player until their second hand has been resolved; bet is won/lost accordingly. |
|                          | Actor Action   | System Response   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| 1                        | Player chooses “split”   | Player’s second card is moved aside, and that player is now considered to have two hands from the resulting split (a bet equivalent to their first is placed on the second hand). Player is dealt another card to accompany their first card. |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| 2                        | Player plays through their first hand  | Dealer responds to the player until their first hand has been resolved; bet is won/lost accordingly. Player’s original second card is given back with an additional card (the second hand).   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
|                          | Player plays through their second hand.  | Dealer responds to the player until their second hand has been resolved; bet is won/lost accordingly.   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| <b>Variations:</b>       | Player does not choose to split (by choice or because the first two cards were not of the same denomination)   |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| <b>Exceptions:</b>       |  |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |
| <b>Developer Notes:</b>  |  |   |  |              |                 |   |                        |   |   |                                       |   |  |   |   |

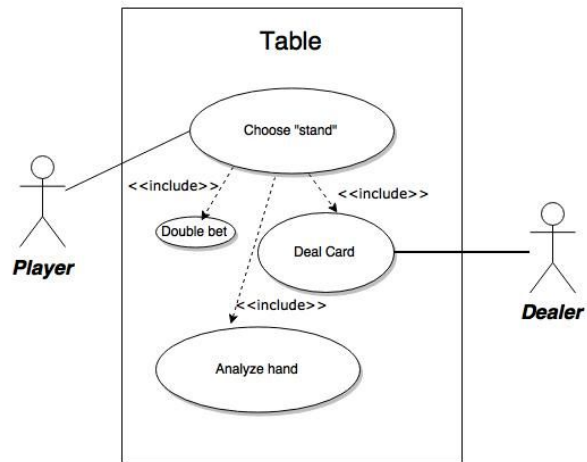
### UR-007: "Hit"



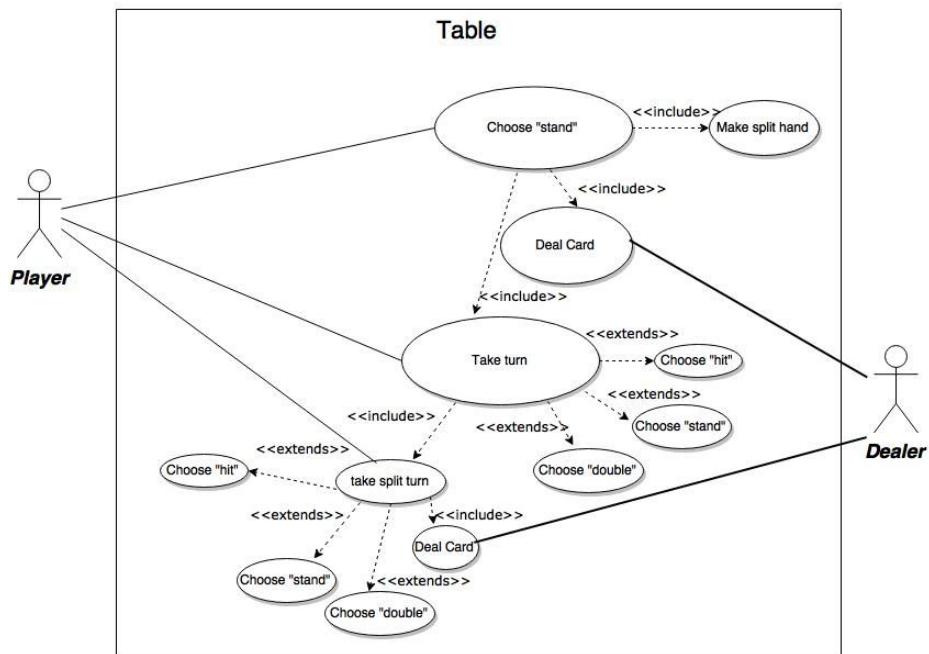
### UR-008: "Stand"



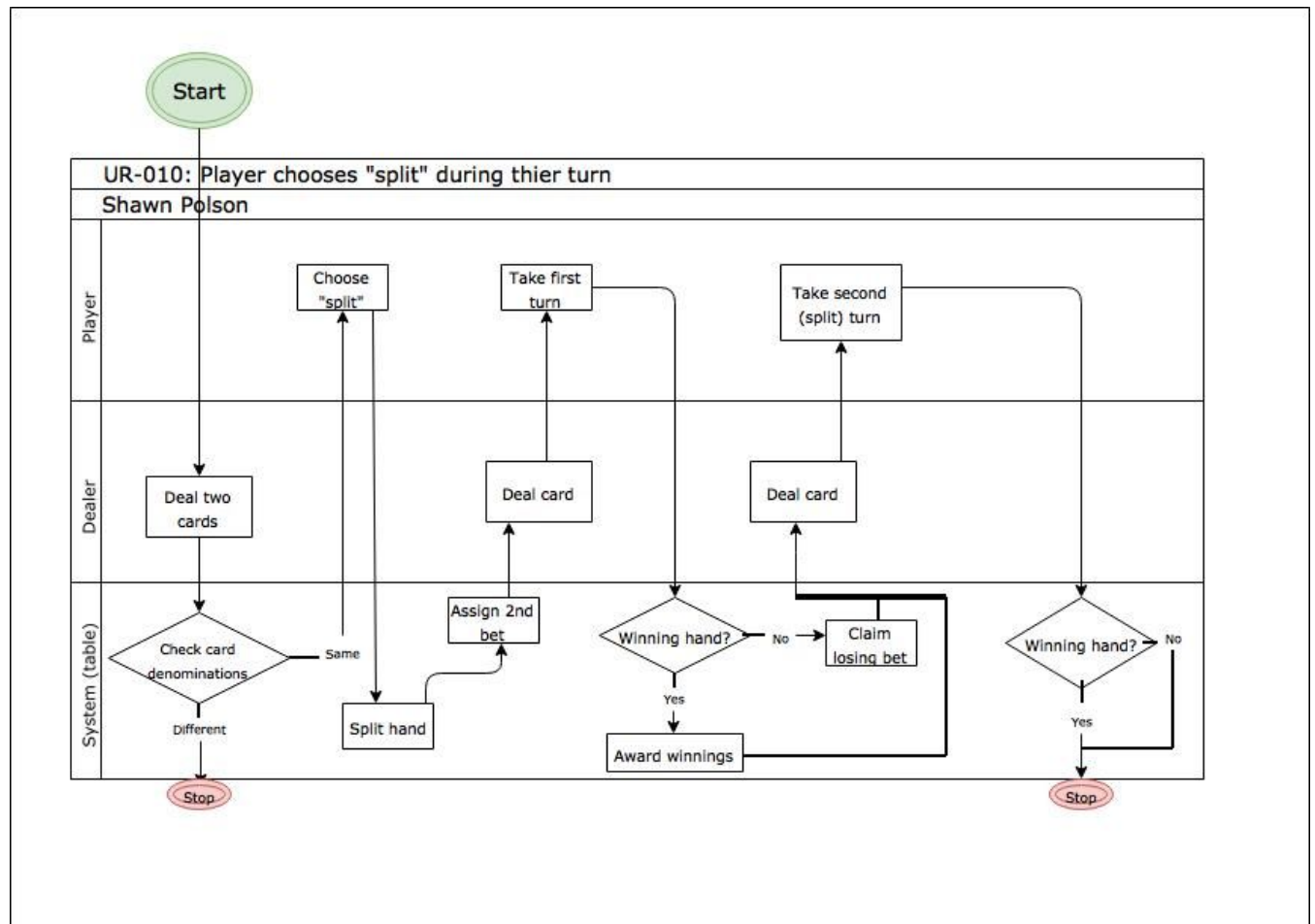
### UR-009: "Double"



### UR-010: "Split"



## Activity Diagram:



User Interactions: (found on next page)

UR-010: Player chooses "split" during their turn

