**Group1**

**7/5/2018**

**Flow of Events Document**

**1.0 Flow of events for the Starting a new game Use Case**

**1.1 Preconditions:**

The game currently isn’t started or it is and the player wants to restart the game.

**1.2 Main Flow:**

This use case begins when the player goes into the game menu and clicks the new game button. The system creates a new instance of the game which builds foundation and tableau slots and occupies the tableau slots with cards. There will be 4 kings drawn first and placed on random empty tableau slots, and the rest of the cards will be placed on the tableau slots until there are four in each. The system then adds this current slot state to memory to be used for later if the player decides to undo a move. The system then decides where these cards/slots need to be placed/drawn on screen and gives each card/slot a position value. Finally, the system displays the game state to the screen by drawing cards/slots to their location defined by their position values.

The game timer is reset and started.

The move counter is reset and started.

**2.0 Flow of events for the Selecting a card Use Case**

**2.1 Preconditions:**

The game has been started and drawn to the screen.

**2.2 Main Flow:**

The use case begins when the player clicks the game screen. The input is received in the form of (x,y) coordinates (the position of the click on the screen.) The system then processes this position to see if it is within the boundaries of a card. If it is then the system checks further to see if the card clicked on is on top of a slot. If this check passes then the system “selects” the card and holds it for the next card/slot to be selected for a potential move.

The system displays that the card has been selected by highlighting it with a red border.

**2.3 Alternate Flow:**

The checks above fail and nothing is selected and nothing is highlighted. The player can attempt to select another card.

**3.0 Flow of events for the Selecting a slot Use Case**

**3.1 Preconditions:**

The game has been started and drawn to the screen. One card has already been selected.

**3.2 Main Flow:**

The use case begins when the player clicks on the game screen. The system receives the

input in the form of (x,y) coordinates and processes those coordinates to see if it is in the boundary of a slot. Then the system checks to see if it is the second thing the player tried to select because we want to move card into slots, not slots onto other slots/cards. Finally, the system checks to see if it is an empty slot and that its type is foundation. If so it is “selected”.

**3.3 Alternate Flows:**

The above checks fail and nothing is selected or highlighted. The player can attempt to select another card.

**4.0 Flow of events for the Moving a card Use Case**

**4.1 Preconditions:**

The game has been started and drawn to the screen and two cards or a card and a empty slot have been selected.

**4.2 Main Flow:**

The system checks to see what cards/slots have been selected and from what slot they’re from and based on that goes through one of 3 sub flows (S.1 – S.3). If the sub flow is successful then the system will remove the first card selected from its slot and place it onto the top of the slot of the second card/slot selected. Then the system will update the position of the card moved and redraw the game screen. Cards selected will reset for the user to pick more cards to be moved.

The move counter will be incremented, and the new state of slots will be placed in memory to be used if undo move is used.

**4.3 Sub Flows:**

**S.1)** Two cards have been selected and the second card selected is on a tableau slot. The system checks the ranks of each card; if the rank of the first card is one less than that of the second card then the move is accepted by the system. The check passes and flow goes back to main to finish the use case.

**S.2)** A card and an empty foundation slot have been selected. The system checks the rank of the card selected to be placed on the empty foundation slot. If it is an ace then the check passes and flow goes back to main to finish the use case.

**S.3)** Two cards have been selected and the second card selected is on a foundation slot. The system checks the ranks and suits of each card; if the suits of each card are the same and the rank of the first selected card is one more than the rank of the second selected card then the check passes and flow goes back to main to finish the use case.

**4.4 Alternate Flow:**

The checks above fail and the main flow does not finish in its entirety. Cards selected will reset for the use to try to move another card. The move counter will not increment.

**5.0 Flow of events for the Undo a move Use Case**

**5.1 Preconditions:**

The game has been started and drawn to the screen and at least one successful move has been made.

**5.2 Main Flow:**

The use case begins when the player goes into the game menu and selects the undo move button. The system removes the most recent state in memory and sets its current stat to the previous one. It then updates and redraws the game screen. The system decrements the move-counter by 1.

**6.0 Flow of events for the Winning the game Use Case**

**6.1 Preconditions:**

The game has been started and a move has been made.

**6.2 Main Flow**

The system checks the state of the foundation slots each time a successful move has been made. When all 4 foundation slots have been filled with cards ace – king then a win screen is drawn and the timer is stopped to allow the player to see how much time it took them to finish and how many moves it took.