**Software Development Assignment #3**

**CS 3331**

**Spring 2015**

You have been contracted by a Casino who wants you to continue developing a game for them. The game is Blackjack (<http://en.wikipedia.org/wiki/Blackjack>). The Casino wishes to conduct some research on the tendencies of players when playing blackjack when gambling. To facilitate this, the Casino desires for the program to record at every second in the game where the cursor is pointing at. For example if a player is hovering over the “hit” button for three seconds, the program should record that in a log file. In addition, the program now will incorporate betting each player by assigning 1000 dollars whenever the game starts and player names are defined. The program will use a simple betting scheme, where 100 dollars are played each game, and whoever wins takes 100 dollars from the loser. Upon one player going to 0 the game session will end and a new one must be created.

The following are the requirements that the system must now exhibit:

1. The system shall support only two players.
2. The system shall provide a GUI text box to input player Names.
3. The system shall provide a GUI check box to designate a player as the “Dealer”.
4. The system shall provide a GUI label to display who the Dealer is.
5. The system shall provide two GUI labels to display the amount of money each player has.
6. The system shall designate the other player as the “Player”.
7. The system shall alternate the “Dealer” designation between the players after each game.
8. The system interface shall accept input via GUI text boxes for: Name of players, Dealer or Player designation.
9. The system shall start each player with 1000 dollars.
10. The system interface shall provide a GUI button to quit the game.
11. The system shall display images in the GUI for each card as “1-10, J, Q, K, A” for each player.
12. The system shall declare a winner in the GUI when:

* Player gets 21 points on the player's first two cards (called a blackjack), without the Dealer getting blackjack;
* Player reaches a final score higher than the Dealer without exceeding 21; or
* Dealer draws additional cards until his or her hand exceeds 21.

1. The system shall deduct 100 dollars from the balance of the losing player and add 100 dollars to the balance of the winning player.
2. The system shall declare an ultimate winner when a player has taken all of the opposing players starting money.
3. The system shall not allow players to play when they have a 0 balance.
4. The system shall restart the game when a player reaches a 0 balance, it will prompt for names and set the balances back to 1000 each.
5. The system shall not display the Dealer’s hand until the Player is done receiving cards.
6. The system shall use a standard 52 card deck (no Jokers).
7. The system shall shuffle and reset the 52 card deck after every game.
8. The system shall give each player cards randomly from the deck.
9. The system shall generate a log file that contains the location of the mouse pointer at every second for every GUI element for each game played.
10. The system shall name the log file containing the mouse pointer location based on a combination of the player’s names and time the game started.
11. The log file shall follow the format below:

* On [Player/Dealer] [Name] turn, [Second] the mouse button was hovering over [GUI element] with [Name]’s [Balance].

1. The system shall start generating the log file at second 0 when the game starts, and close the log file a second after the game declares a winner.

*Disclaimer: These requirements may not be complete and only serve as a basis of what the customer expects to be delivered.*

**Deliverables**:

April 2: Paper UI prototype, Class Diagram, Use Case Diagram, Statechart Diagram and Test Cases.

April 14: Java Source Code, Testing Document, Demo.