**Black Jack Game**

**Project Title:** Blazing Jack

**What are you building:** A black jack game.

**Why you chose that idea:** Because it is interesting and challenging.

**Who this program is for:** People who like playing black jack and want to improve their skills.

**How you plan to design app:**

1. Create a **Card** class(abstract, because we need to implement it in **NonAce** class and **Ace** class) to contain the basic information about cards. (attributes: number& shape). Need a ***randomMatch*** method to randomly match numbers with shapes(equivalent of shuffling deck, so we don’t need another shuffle deck method in **Deck** class later on). Need a ***getValue*** method (abstract, because we need to implement it in **NonAce** class and **Ace** class) to get the value of cards.
2. Create a **NonAce** class.(extends **Card** class) ( Tips: the value of face cards is 10)

1. Create an **Ace** class(extends **Card** class). Need a ***setValue*** method ( Tips: In ***setValue*** method, we need to determine whether the value of “A” is 1 or 11. Initially view it as 11, if the sum is bigger than 21, than consider it as 1).
2. Create a **Role** class to determine the roles.(Interface, because we need to implement it both in **Player** class and **Dealer** class). (attributes: name,hand)
3. Create a **Player** class (additional attribute: balance, bet)(implements **Role** class). Need a ***setBet*** method to add the bet (need to calculate balance inside). Also a ***move*** method to ask players whether to hit or pass.
4. Create a **Dealer** class. (implements **Role** class)
5. Create a **Deck** class. Need a ***dealingCards*** method (Initially 2 cards/person, then 1 card once if the players choose to hit) to deal cards.
6. Create a **Client** class to actually play the game. Need a ***calculateSum*** method to calculate the sum of the cards’ value. Need a ***compare*** method to compare the sum with 21 and a ***manageHand*** method to change the hand. Also a ***determineWinner*** method to determine the winner.

**Milestones:**

June 11th: finish **Card, Ace, NonAce** class

June 13th: finish **Role** , **Player** and **Dealer** class

June 16th: finish **Deck** class

June 17th: finish everything

**UML diagram:**

