

# Blackjack CLI Game

## Project 1 Project

## Overview

To demonstrate the current knowledge of C++ learned, I recreated the popular card game called BlackJack, or 21. The goal of the game is simply to get the highest combination of cards while staying under 21. If a player gets 21, they win, if they go over, they are out. After the initial dealing, each player can choose whether to get a new card (stay) or pass (stay). At the end of the game, all players who are still in and all want to stay, the highest hand wins.

## Features

- Multiple Players
- AI Players
- Random Dealing
- Max Hand Size
- Player Input Verification

## How To Play

- All Players are dealt 2 cards to start
- Your deck is shown to you
- You can then choose to hit or stay
- Type “h” to hit and get another card, or “s” to stay
- You can keep doing this until you either bust (over 21) choose to stay or get 21 (blackjack)
- If no one got blackjack, the winner is the player with the highest combination

## Technical Details

- Players are stored in a vector of a “player” struct for easy object organization
- In all functions, the hand (cards given) are passed by reference
- The hand array is a fixed size of 6
- Cards are stored in a short type
- Player names are std::string
- CLI input is a char input, either h/s (hit/stay), which is validated

## Screenshots

```
--- DEALING CARDS ---
Human Player's current hand:
    - 2
    - 2
Do you want to hit or stay? (h/s)
h
Hitting!
Giving card to : Human Player
Human Player stay=0 bust=0
AI Player stay=1 bust=0
AI Player stay=1 bust=0
Dealer stay=1 bust=0
Human Player's current hand:
    - 2
    - 2
    - 10
Do you want to hit or stay? (h/s)
h
Hitting!
Giving card to : Human Player
Giving card to : Dealer
Human Player stay=0 bust=0
AI Player stay=1 bust=0
AI Player stay=1 bust=0
Dealer stay=0 bust=0
Human Player's current hand:
    - 2
    - 2
    - 10
    - 7
Human Player BLACKJACK!

RUN SUCCESSFUL (total time: 3s)
□
```

## Possible Improvements

- Dynamic Hand size
- Smarter AI
- Place Bets
- Assign Card Values to Real Cards
- Bug: Can get more than 6 cards without reaching 21.