



# ROBOTIC VISION TECHNOLOGIES

## RVT Senior C++ Developer Coding Assignment

### ***BlackJack***

#### **Overview**

We are excited to have you make it this far in the application process. Now comes perhaps the most important part as it shows us the kind of work we can expect you to contribute.

The goal of this assignment is for you to prove thoughtfulness in the categories of program design (including thinking about how your code might be reused beyond the scope of this assignment), clarity, and an expertise in the C++ language. There will likely be things you must learn to accomplish the deliverables as well, so your ability to learn quickly on your own will shine through here.

#### **Requirements Summary**

For this assignment, implement a game of Blackjack. There is one player and one dealer. The dealer plays the game along with the player. The interactions of the game should be from the perspective of the player.

The dealer must deal the cards, present a player with a hand, calculate the number of cards in a hand, determine the winner, and start a new hand.

A card must know its face value and be able to report this. Suit is not important (but may be later for another game). All cards must be members of a deck of cards. This deck must have the functionality to deal the next card, shuffle itself, as well as report how many cards remain in the deck.

During the game, a player can request a “hit” or a “stand.” The player must be able to display the hand, calculate the face value of the hand, and determine the number of cards in a hand. When the dealer asks the player whether to deal another card or to start a new game, the player must respond.

For the purposes of this game, don’t worry about betting or advanced situations like “surrendering” or “splitting.” Just who wins – dealer or player.

You must also develop a very basic GUI based on the Win32 API platform (not MFC or any other framework, just plain Win32. Being a legacy method for displaying graphical interfaces, this will showcase your ability to quickly learn older technologies to effectively use them as the codebase requires).

## Deliverables

- A working C++ Win32 graphical application as described above.
- The deck must be implemented as a separate DLL file and imported into the software. Any calls to methods of the deck must be implemented in this DLL.
- A brief summary describing how you approached solving the problem in a README in the solution directory. Also add instructions on how to compile and run your solution.
- Email your solution and/or Github link to [paul.weidinger@roboticvisiontech.com](mailto:paul.weidinger@roboticvisiontech.com)

## Additional Comments

- The requirements summary gives a good start of how to design it, but ultimately it's up to you. If you want to change the implementations, go for it. As long it plays as expected. With that said, feel free to add any functionality or features if you like.
- How you display the game graphically is important for clarity, but we won't be looking for anything artistic or creative. As long as it's intuitive to play the game. So think about the important information that a player will need before deciding to hit or stay (like the dealer's card, for example).
- If there's a function in the standard library, like `random_shuffle()` in `<algorithm>` for example, feel free to use it. No need to get creative algorithmically.
- It would be a good idea, although not necessary to develop your application in a git repository and publish it on Github.com, making frequent commits with good messages as you develop.

This assignment is due within one week of receipt.  
Any questions or concerns, please contact

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Best of luck!