CSI201 – Blackjack Game

Practical:

For this assignment, you will write a two player blackjack game using C++ classes and pointers as follows:

* You will use a C++ class to model a playing card in your game. Each card will need to keep track of its own rank (2-10,J,Q,K,A), suit (H,S,C,D), and color (B,R). Your deck of cards will be an array of these cards. Then use one or more loops to initialize these cards to contain the composition of a standard 52 card deck of playing cards.
* You don’t need to worry about shuffling the positions of the cards within this deck. Instead, you can pick a random index into this array each time that you draw a card. You will then keep track of the card that you picked by its address, ie. a pointer to this card. It would be a great idea to put this code that picks a random card into its own function, since this will make it easier for you to later ensure that the same card is not picked more than once.
* Upon starting, your game should randomly pick two cards for each player, and keep track of these cards using pointer variables. For each player, you should display the two cards that were picked for them, and then prompt them to determine whether they want to draw another card or hold with the cards they have drawn so far. If the sum of a player’s cards ever goes over 21, they bust and automatically lose.
* If neither player busts, add up the ranks of each players’ cards and the winner is the player whose sum is the closest to 21 without going over. 2-10 are added as usual, but J,Q,K each count as ten, and A can count as either one or eleven depending on which is most beneficial to the player holding it. If the two players tie, then the first of those players should be declared the winner.
* At the end of the game, you should give the players an option to play again. We highly recommend getting the entire game to play through correctly once before adding this final loop.
* It is not required that your program always draw different cards from the deck, but implementing this constraint will be an excellent exercise.

# Problems:

1. Write a line of code to create a pointer that holds the address of the following variable: int x;

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2. Write a line of code to change the value of the variable x to 7. This line of code should use the pointer variable that you declared above.

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3,4. Which of the following variables might have a new value after the following function call:

 int x=5; int y=6;

 changeSomeValues( x, &y );

 A. Only X B. Only Y C. Both X and Y D. Neither X nor Y

5. Assuming the following class has been defined, write a line of code that changes the age of the person variable named sven to 17:

 class Person {

 public:

 char name[80];

 int age;

 bool isFemale;

};

Person sven;

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Submission:

**Name:** [REPLACE WITH YOUR NAME]

**Honor Code:** [REPLACE WITH YOUR HONOR CODE PLEDGE]

**Resources:** [REPLACE WITH NAMES OF PEOPLE, WEBSITES, AND OTHER RESOURCES USED, ALONG WITH A BRIEF DECSRIPTION OF THE KIND OF HELP THEY PROVIDED]

After you have completed the practical portion of this assignment, zip your project folder into a single file and upload it to Canvas. After you have completed the written problems above, save this document (with your answers), and upload it to canvas as a separate file. For full credit, you will need to submit both halves of this assignment on Canvas, no later than **Thursday April 16th, 2015**.