Final Exam FINAL.BAS

Input:

As outlined in the attached Grading Guidelines.

Processing Requirements:

As outlined in the attached Basic Rules of Blackjack.

Output:

As outlined in the attached Grading Guidelines. You may want to refer to the Blackjack Game file in the Assignments folder in Blackboard.

Final Exam Schedule:

You will need to turn-in a printed copy of your program source code with line numbers, and your name clearly written on the top of the first page, at the beginning of class on the scheduled due date. Late exams will be penalized one letter grade per calendar day.

When you turn-in the printed copy of your program code you will need to schedule a 15 minute appointment time with your instructor at which time you will:

- Demonstrate your program working.
- Give a line-by-line explanation of your code to the instructor (no points will be awarded for source code which you are unable to sufficiently explain).

Missed appointments will be penalized a letter grade per missed appointment. Failure to reschedule missed appointments will be penalized a letter grade per calendar day.

You are expected to follow all the various formatting, naming and structure conventions that we have learned throughout the semester in order to receive full credit on each requirement.

Points may be deducted for the use of programming conventions that have not been covered in this class.

Students are expected to be honorable in all college assignments. Suspected cases of academic misconduct will be reported to the Dean of Academic or Technical Services. You may refer to the current SSCC Catalog for specific policies and procedures regarding academic misconduct.

Basic Rules of Blackjack
(Twenty-One)

Blackjack (a.k.a Twenty-One) is played with a standard deck of fifty-two playing cards. Each deck contains four Suits (Spades, Diamonds, Clubs, and Hearts). Each of the four Suits has nine Numbered-Cards (2 through 10), three Face-Cards (Jack, Queen, and King), and one Ace for a total of thirteen cards per Suit. Blackjack can be played with as few as one dealer and one player (as in our program) or as many as one dealer and five players. Each player plays against the dealer alone.

The ultimate goal in Blackjack is to attain a score as close as possible to twenty-one without going over. Numbered-Cards are valued by the number on the face of the card (2 through 10 as printed), Face-Cards are valued as ten points, and Aces can be either one or eleven points, whichever is best for the player/dealer. The Suits printed on the cards have no value but should be part of your output.

As an example:
A hand containing a 2, 6, and 9 would be scored as seventeen points. A hand containing an Ace and a 6, could be scored as either seven or seventeen points.

To begin the game the dealer and each player are dealt two cards. The dealer's first card is always dealt face-down (and remains that way until all players elect to "STAND"). All of the dealer's subsequent card(s) are dealt face-up. All player cards are dealt face-up.

Once the first cards have been dealt (two to the dealer and two to each player), if the dealer has Blackjack (twenty-one points with only two cards) the dealer is awarded the win against all players. If a player has Blackjack (twenty-one points with only two cards) the player is awarded the win against the dealer. Otherwise the hand continues with the dealer asking each player in turn if (s)he wants a "HIT" (to take another card). Each player tallies their score to determine whether accepting another card would better their hand. If a player chooses to receive another card (s)he says "HIT me", if not the player says "STAND". Each player can take as many cards as (s)he wishes until the score in their hand reaches or exceeds twenty-one. Should the score in a player's hand exceed twenty-one, the player loses and the dealer is awarded the win.

Once the player declines a "HIT" (elects to "STAND") (s)he may not take any more cards and must be satisfied with the score in his/her hand. The dealer now shows his/her face-down card along with his/her face-up card(s). If the dealer's total score is under sixteen, (s)he must take another card. The dealer must continue taking cards until his/her score exceeds sixteen or surpasses twenty-one. In the case of the dealer, an Ace is always counted as eleven unless it would put the dealer's score over a total of twenty-one points.

As an example:
An initial 7 and an Ace in the dealer's hand, would equal eighteen and the dealer would have to "STAND". While a 4 and an Ace (a score of fifteen) would require the dealer to take another card. If the third card dealt to the dealer were an 8 (pushing the dealer's score to twenty-three), the Ace would automatically be reduced to a value of one and the dealer's score reduced to thirteen. This new score of thirteen would require the dealer to take yet another card. At this point if the dealer's score exceeds twenty-one points each player who's score is less than or equal to twenty-one is awarded the win.

Once all cards have been dealt and both the dealer and player scores are less than twenty-two, each player's score is compared with the dealer's score. A player's score that is higher than the dealer's score results in a win for the player. A dealer's score that is higher than the player's score results in a win for the dealer. Identical scores are awarded to the dealer as a win.

Grading Guidelines:

	Criteria	Available Points	Points Earned
1)	Create a **STRUCTURE** of **CARDS**.	**25**	
2)	Create a **deck()** of 52 **CARDS** using an **ARRAY**.	**25**	
3)	Populate all **CARDS** in the **deck()** with an appropriate face value using the **READ DATA** statements.	**30**	
4)	Populate all **CARDS** in the **deck()** with an appropriate suit.	**30**	

5)	At the beginning of each game the user should be given the option to:
	    1) start a new game or
	    2) resume a previous game.
		30	

6)	Output the first two cards to the dealer's hand from the **deck()** according to the attached rules of Blackjack. (The dealer's score should not be displayed until the conclusion of the hand).	**35**	
7)	Output the first two cards to the player's hand (face value and suit) and the player's score.	**25**	
8)	Should either the dealer or the player score 21 points with only two cards they are awarded the win. The winner should be declared, "BLACKJACK" should be displayed prominently and the hand concluded.	**25**	
9)	Ask the player if they would like take a "HIT" (take another card) when appropriate.	**20**	
10)	Output any additional cards the player requested (face value and suit) and the player's new score.	**15**	
11)	Should a player's score exceed 21 points your program should automatically search the player's hand for any Aces that are scored as eleven points. If that Ace is present it should automatically be converted to one point (should there be more than one Ace in the player's hand only the first Ace should be converted to one point at this time). After the conversion the player's new points total should be displayed. This process should be repeated each time the player elects to take another card.	**50**	
12)	Once the player chooses to "STAND" your program should automatically proceed to output any additional cards to the dealer according to the attached rules of Blackjack.	**25**	
13)	No card from the **deck()** should be dealt twice.	**40**	
14)	If the game continues until all cards in the **deck()** have been played your program should automatically shuffle the **deck()** and continue with play uninterrupted.	**30**	
15)	Cards that are currently in play, when all cards in the **deck()** have been dealt, should not be shuffled back into the **deck()**.	**50**	

16)	Should the dealer's score exceed 21 points your program should automatically search his/her hand for any Aces that are scored as eleven points. If that Ace is present its value should be re-assigned a value of one point (should there be more than one Ace in the dealer's hand only the first Ace should be converted to one point at this time). After the conversion the dealer's new points total should be tallied. This process should be repeated each time the dealer's score exceeds 21 points.	**40**	
17)	Maintain the current dealer and player cards and points separately for comparison and output at the conclusion of a hand.	**30**	
18)	If the dealer or player acquires more than 21 points in one hand the offending player/dealer will "BUST" and the player/dealer with fewer than 22 points wins. A player or dealer "BUST" should be declared prominently. The winner should be declared and the hand concluded.	**20**	
19)	If both the player and the dealer have fewer than 22 points at the conclusion of a hand the player/dealer with the greatest number of points should be awarded the win. The winner should be declared and the hand concluded. In the event of a tie the dealer is awarded the win.	**20**	
20)	At the conclusion of each hand the player and the dealer cards and total points for that hand should be output for the user to see and the winner should be declared prominently.	**25**	
21)	At the conclusion of each hand the number of wins for the winning player/dealer as well as the total number of games played should be displayed.	**20**	
22)	At the conclusion of each hand the player should be given the option to play another hand or conclude the game.	**20**	
23)	At the conclusion of the game the user should be given the option to save the current wins and losses to their jumpdrive (BLKJCK.DAT).	**30**	
24)	There should be no SHARRED or COMMOM SHARED data in your program.	**40**	
25)	There should be liberal use of SUB ROUTINES and/or FUNCTIONS throughout your program in an effort to make your program flow and your logic easy to follow.	**45**	
26)	Naming, indentation, whitespace, commenting, and output conventions learned this semester should be followed.	**60**	
27)	Your entire program should be fewer than 350 lines of code.	**25**	
28)	Your program must abide by all the rules outlined in the attached Basic Rules of Blackjack sheet.	**100**	
Totals:		**930**	