Assignment Number 3

75 Points

Prerequisites: Completion of Assignment 2

References: Text chapter 4

Skills Required:

1. Methods
2. Passing parameters by value or reference
3. Constructor
4. Overloading
5. Scope of variables
6. Functions

Task Specifications:

1. Create an application that prompts the user for input, and will run a simulated game over and over until the user types the word “STOP” in upper, lower, or mixed case. All user commands are shown in upper case, but any combination of upper, lower, or mixed case should work for all commands.
2. Create a function that “deals” a card by returning a random integer between 1 and 11 inclusive.
3. Create an application that plays a cardgame according to these rules. This game is similar to “Blackjack” but the cards have values of 1 through 11.
   1. The object is to accumulate cards having a sum of 21 or less.
   2. The player wins the game if the total of their cards is more than the total of the dealer’s cards.
   3. The player goes first, and may choose as many cards as they want until they either choose to stop or their total exceeds 21.
   4. The player can only see one of the dealer’s cards until the player has finished accepting new cards.
   5. The dealer wins a tie game.
   6. If the player chooses cards that have a total greater than 21 (called a “bust”) then the game is over immediately, and the dealer shall not receive more than their first two cards.
4. Display the results of the deal to the user. Update this display after each new card is dealt.
5. Request input from the user. You can use a dialog box that doesn’t require the user to type: like a showConfirmDialog. If the user chooses “HIT” then a new card will be dealt using your random function, and the results displayed. This choice will be offered until the user chooses “STAY” or the user is “BUSTED” as described below.
6. If the user enters “STAY” before they are “BUSTED” then the game will resolve the dealer total, and display the results of the game.
7. If after choosing “HIT,” the value of player is more than 21, the game terminates and displays “BUSTED.” In this case, the value of the dealers numbers are resolved and displayed to the user before the game terminates.
8. When resolving the dealer’s total, the application will “HIT” the dealer for totals of 16 or less. The dealer will “STAY” on totals of 17 or more. If the value of dealer becomes greater than 21, then the application terminates and displays “DEALER BUSTED.” Otherwise, the application compares the final values of dealer and player, and reports the winner.
9. Note that it is possible to get two cards with a total of 22 on the initial deal. When this happens, regenerate the random numbers for the player or dealer so that they are not busted at the start of each game.
10. When the game terminates, the values of dealer and player should return to zero
11. The application should continue to play new games until the user types the text “STOP” when asked if they want to play another game.

Evaluation Criteria

1. All tasks must be completed to receive credit for this assignment
2. Program should not crash if the user enters incorrect data