

COMP 3000 – Assignment 4
Due 11:59 pm – Friday, Oct 18, 2019
Submit Assign04.zip via Canvas

Program: Assign04

For Assignment 4, you will be modifying your class that simulates a deck of cards. You may use the instructor's posted solution for Assignment 3 as a base, if you feel it is needed.

Changes:

- 1) Modify your Deck class so that it uses a constructor rather than createDeck() to create your deck. Your class should have two constructors:
 - a. The first constructor takes no input parameters and creates a deck of 52 cards.
Hint: this is the same functionality that createDeck() currently has. After creating your constructor, be sure to remove createDeck() from your class declaration.
 - b. The second constructor should take one input parameter (int deckSize) and create a deck of deckSize number of cards. Which cards are created doesn't matter so long as the cards are all unique.
- 2) Modify your Deck class (and its member functions) to use a vector of Card, rather than an array.

Hints:

Vectors are dynamically sized, so you will not need to use the curSize variable any more. Instead, use the ".size()" function to get the size of your array when needed. Be sure to remove any reference to "curSize" in your program.

Using a vector will also make cards[0] the top of the deck, so you will need to edit your code accordingly. Remember, in our previous program cards[size-1] was the top.

Using ".push_back()" and a dynamically sized vector means we no longer have to shift cards when adding to the deck. Instead, just push the new card to the back of the vector.

When dealing a card, store the top card in a variable of type Card, then use the ".erase()" and ".begin()" functions to erase the first location of your vector. An example can be found here: <http://www.cplusplus.com/reference/vector/vector/erase/>. The top card needs to be stored in a variable so that it is not lost when it is removed from the vector. The card stored in the variable can then be either added to a deck or returned depending on which function is being used. Lastly, remember that when dealing multiple cards, you need to start with a deck of size 0 and your new constructor will make a deck of size 52 by default. You will now need to specify the new deck's size when defining the deck in the dealCard(int) function.

- 3) Your driver program should function the same as in your previous program and produce the same output. Only the Deck class and its member functions need to be modified.

Sample Output:

```
Your cards are:
A of hearts
K of clubs
Q of diamonds
J of spades
10 of hearts
9 of clubs
8 of diamonds
7 of spades
6 of hearts
5 of clubs
4 of diamonds
3 of spades
2 of hearts
A of clubs
K of diamonds
Q of spades
J of hearts
10 of clubs
9 of diamonds
8 of spades
7 of hearts
6 of clubs
5 of diamonds
4 of spades
3 of hearts
2 of clubs
A of diamonds
K of spades
Q of hearts
J of clubs
10 of diamonds
9 of spades
8 of hearts
7 of clubs
6 of diamonds
5 of spades
4 of hearts
3 of clubs
2 of diamonds
A of spades
K of hearts
Q of clubs
J of diamonds
10 of spades
9 of hearts
8 of clubs
7 of diamonds
6 of spades
5 of hearts
4 of clubs
3 of diamonds
2 of spades

Your cards are:
3 of spades
6 of spades
2 of diamonds
A of diamonds
A of clubs
10 of spades
3 of clubs
6 of diamonds
K of clubs
4 of clubs
9 of hearts
4 of hearts
3 of hearts
10 of clubs
8 of hearts
10 of hearts
7 of spades
5 of clubs
7 of hearts
7 of diamonds
3 of diamonds
8 of spades
Q of clubs
5 of diamonds
A of hearts
9 of spades
5 of hearts
Q of spades
6 of hearts
9 of clubs
2 of spades
J of hearts
8 of diamonds
5 of spades
7 of clubs
9 of diamonds
2 of hearts
8 of clubs
2 of clubs
J of spades
A of spades
6 of clubs
4 of spades
Q of hearts
K of diamonds
J of clubs
J of diamonds
K of hearts
Q of diamonds
K of spades
4 of diamonds
10 of diamonds

Your card is the 3 of spades

New Deck:
Your cards are:
6 of spades
2 of diamonds
A of diamonds
A of clubs
10 of spades

Your cards are:
10 of spades
2 of diamonds
6 of spades
A of diamonds
A of clubs
```

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Assign04.zip

Compressed Visual Studio Solution folder