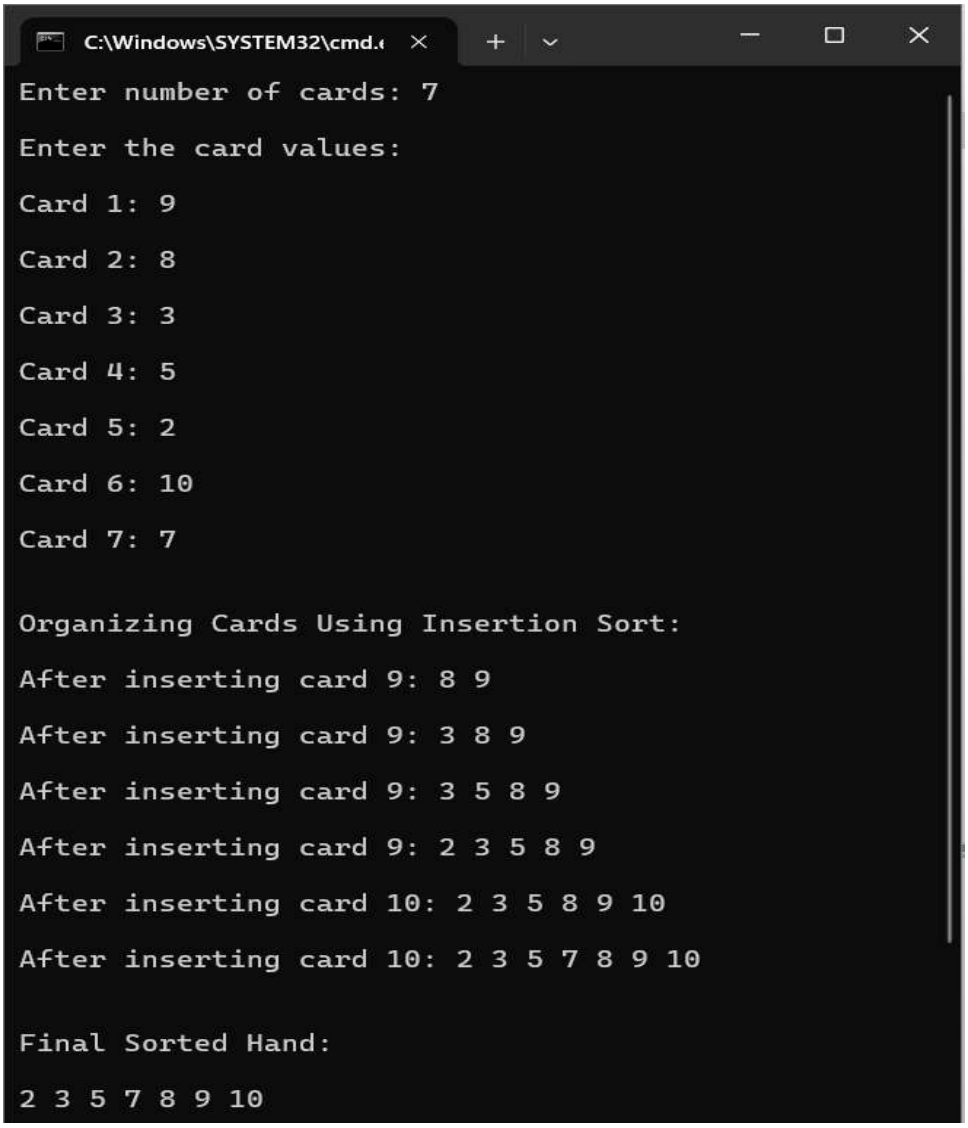
Organizing Cards in a Hand:
Application: When playing card games, players often use an approach similar to insertion sort to organize their cards. They pick one card at a time and insert it into the correct position in their hand, maintaining a sorted sequence. Write a program that demonstrates how to organize (sort) cards in a hand using insertion sort

Program:

```
#include <iostream>
using namespace std;
int main() {
    int n;
    cout << "Enter number of cards: ";
    cin >> n;
    int cards[n];
    cout << "\nEnter the card values:\n";
    for (int i = 0; i < n; i++) {
        cout << "\nCard " << i + 1 << ": ";
        cin >> cards[i];
    }
    cout << "\n\nOrganizing Cards Using Insertion Sort:\n";
    for (int i = 1; i < n; i++) {
        int key = cards[i];
        int j = i - 1;
        while (j >= 0 && cards[j] > key) {
            cards[j + 1] = cards[j];
            j--;
        }
        cards[j + 1] = key;
        cout << "\nAfter inserting card " << cards[i] << ": ";
        for (int k = 0; k <= i; k++)
            cout << cards[k] << " ";
        cout << "\n";
    }
    cout << "\n\nFinal Sorted Hand:\n\n";
    for (int i = 0; i < n; i++)
        cout << cards[i] << " ";
    cout << endl;
    return 0;
}
```

Output:


C:\Windows\SYSTEM32\cmd.
Enter number of cards: 7
Enter the card values:
Card 1: 9
Card 2: 8
Card 3: 3
Card 4: 5
Card 5: 2
Card 6: 10
Card 7: 7
Organizing Cards Using Insertion Sort:
After inserting card 9: 8 9
After inserting card 9: 3 8 9
After inserting card 9: 3 5 8 9
After inserting card 9: 2 3 5 8 9
After inserting card 10: 2 3 5 8 9 10
After inserting card 10: 2 3 5 7 8 9 10
Final Sorted Hand:
2 3 5 7 8 9 10