DS Assignment 2

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Program 1 :-

/*Game Development:

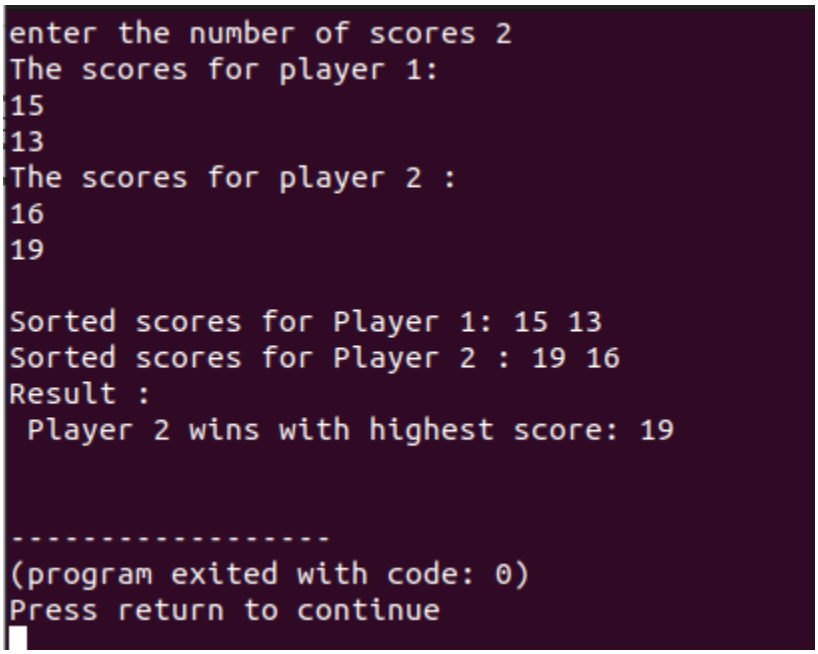
write a game development program that implements the Bubble Sort algorithm. The program will simulate a simple game where the player can input a set of numbers, and the numbers will be sorted using Bubble Sort to simulate a "level-up" scenario where the player's scores are sorted in descending order.*/

```
#include<iostream>
using namespace std;

int main (){
   int n;
   int scores1[10];
   int scores2[10];
   int temp;

   cout<<"enter the number of scores ";
   cin>>n;

   cout<<"The scores for player 1:\n";
   for(int i=0 ; i<n ; i++){
      cin>>scores1[i];
   }

   cout<<"The scores for player 2 :\n";
   for(int i= 0 ;i<n ; i++){
      cin>>scores2[i];
   }
```

```
    for(int i=0; i < n - 1 ;i++){
        for(int j=0 ; j < n - i - 1 ; j++){
            if (scores1[j] < scores1[j + 1]) {
                temp = scores1[j];
                scores1[j] = scores1[j + 1];
                scores1[j + 1] = temp;
            }

        }
    }

     for (int i = 0; i < n - 1; i++) {
        for (int j = 0; j < n - i - 1; j++) {
            if (scores2[j] < scores2[j + 1]) {
                temp = scores2[j];
                scores2[j] = scores2[j + 1];
                scores2[j + 1] = temp;
            }
        }
    }
    cout << "\nSorted scores for Player 1: ";
    for (int i = 0; i < n; i++) {
        cout << scores1[i] << " ";
    }

    cout << "\nSorted scores for Player 2 : ";
    for (int i = 0; i < n; i++) {
        cout << scores2[i] << " ";
    }

    cout<<"\nResult :\n";

    if (scores1[0] > scores2[0]) {
    cout << " Player 1 wins with highest score: " << scores1[0] << "\n";
} else if (scores2[0] > scores1[0]) {
    cout << " Player 2 wins with highest score: " << scores2[0] << "\n";
} else {
```

```
    cout << " It's a tie !! jao bhai waapas khelo : " << scores1[0] << "\n";
}

    return 0;
}
```

Output :-



Program 2 :-

/*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*/

```
#include<iostream>
using namespace std;
int main()
{
	int n;
	cout<<"Enter size of cards : ";
	cin>>n;
	int a[n];
	cout<<"Enter cards elements : ";
	for(int i=0;i<=n-1;i++){
	cin>>a[i];
}
	for(int p=0;p<n-1;p++)
	{
		int i=p+1;
		int j=i-1;
		int temp=a[i];

		while(j>=0 && temp<a[j])
		{
			a[j+1]=a[j];
			j--;

	}

	a[j+1]=temp;
	cout<<"Cards after pass  "<<p+1<<" : \n";
	for(int i=0;i<=n-1;i++){
		cout<<"  "<<a[i];
	}
```

```
        cout<<"\n";
}
cout<<"\n The sorted cards are : ";
for(int i=0;i<=n-1;i++)
{

        cout<<" "<<a[i];
}
return 0;

}
```

Output :-