Assignment no :2

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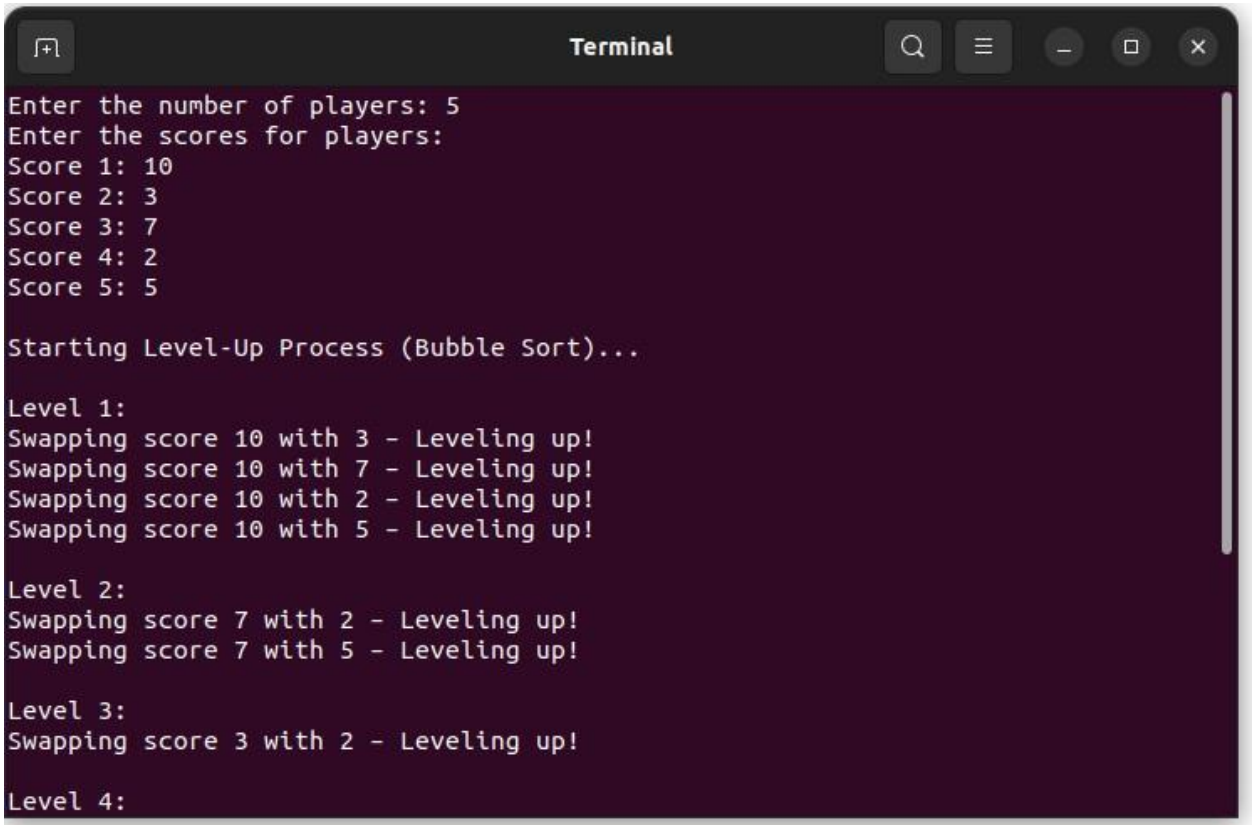
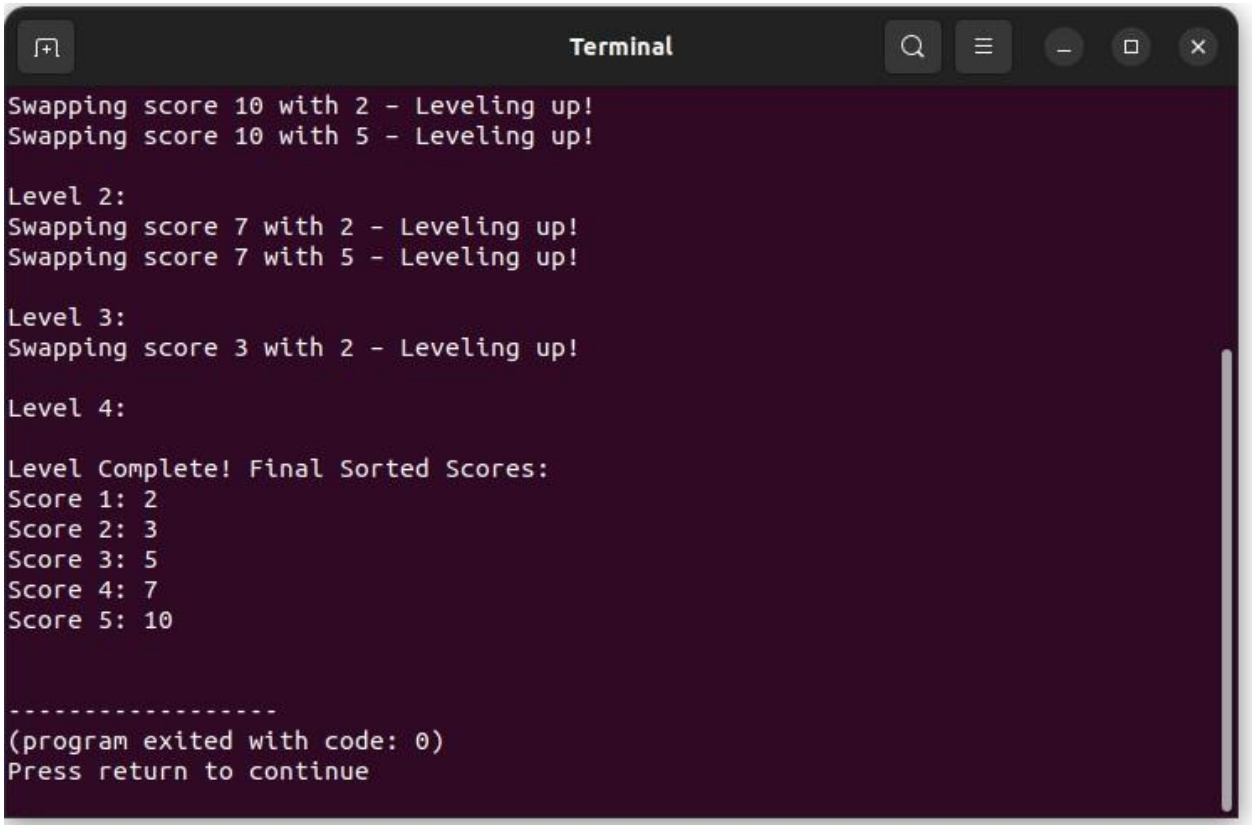
Batch: C

Part A: Game Development

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

int main() {
   int n; cout << "Enter the number of
   players: "; cin >> n;

   int player[20]; cout << "Enter the scores for
   players:" << endl;
   for (int i = 0; i < n; i++) {
      cout << "Score " << i + 1 << ": "; cin
      >> player[i];
   }
   cout << "\nStarting Level-Up Process (Bubble Sort)...\n";
   for (int i = 0; i < n - 1; i++) {
      cout << "\nLevel " << i + 1 << ":\n"; for
      (int j = 0; j < n - i - 1; j++) {
         if (player[j] > player[j + 1]) {
            cout << "Swapping score " << player[j]
               << " with " << player[j + 1]
               <<  "  –  Leveling
            up!\n";  int  temp  =
            player[j];  player[j]  =
            player[j + 1]; player[j +
            1] = temp;
         }
      }
   }

   cout << "\nLevel Complete! Final Sorted Scores:\n"; for
   (int i = 0; i < n; i++) {
      cout << "Score " << i + 1 << ": " << player[i] << endl; }

   return 0;
}
```

Output:


Terminal
Enter the number of players: 5
Enter the scores for players:
Score 1: 10
Score 2: 3
Score 3: 7
Score 4: 2
Score 5: 5
Starting Level-Up Process (Bubble Sort)...
Level 1:
Swapping score 10 with 3 - Leveling up!
Swapping score 10 with 7 - Leveling up!
Swapping score 10 with 2 - Leveling up!
Swapping score 10 with 5 - Leveling up!
Level 2:
Swapping score 7 with 2 - Leveling up!
Swapping score 7 with 5 - Leveling up!
Level 3:
Swapping score 3 with 2 - Leveling up!
Level 4:


Terminal
Swapping score 10 with 2 - Leveling up!
Swapping score 10 with 5 - Leveling up!
Level 2:
Swapping score 7 with 2 - Leveling up!
Swapping score 7 with 5 - Leveling up!
Level 3:
Swapping score 3 with 2 - Leveling up!
Level 4:
Level Complete! Final Sorted Scores:
Score 1: 2
Score 2: 3
Score 3: 5
Score 4: 7
Score 5: 10

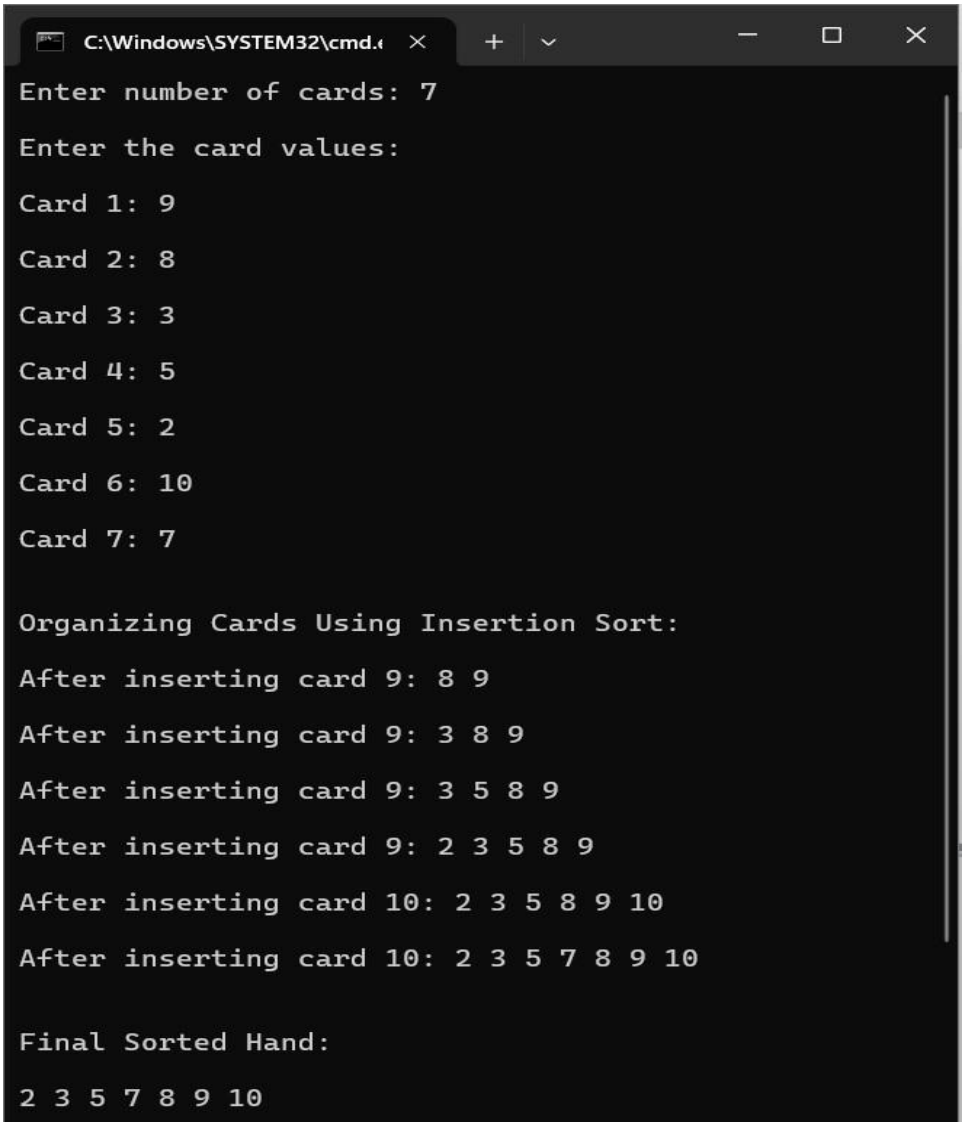
(program exited with code: 0)
Press return to continue

PART B: Organizing Cards in Hand

```
#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