

## Assignment no :2

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**Class: SY-1**

**Batch: C**

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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.exe
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
```