ASSIGNMENT 2

IMPLEMENTATION OF BUBBLE AND INSERTION SORT

PROGRAM 1(BUBBLE SORT) :-

```
#include <iostream>
using namespace std;
 int main(){
          int n,i,j;
          cout<<"enter the number of players:";
          cin>>n;

          int scores[100];

          cout<<"enter score of "<<n<<" players:"<<endl;
          for(i=0;i<n;i++){
                    cout<<"player "<<i+1<<":";
                    cin>>scores[i];
          }

          for(i = 0; i < n - 1; i++) {
                    cout<<"pass"<<i+1<<endl;
      for(j = 0; j < n - i - 1; j++) {
         if(scores[j] > scores[j + 1]) {
            cout << "Swapping score " << scores[j] << " with " << scores[j + 1] << " - Leveling
up!" << endl;
            int temp = scores[j];
            scores[j] = scores[j + 1];
            scores[j + 1] = temp;
         }
      }
   }

         cout << "Level complete! Scores sorted!" << endl;
   cout << "Sorted scores:" << endl;
   for(i = 0; i < n; i++) {
      cout <<"player"<<i+1<<":"<<scores[i] << endl;
   }
   cout << endl;
```

```
    return 0;
}
```

OUTPUT :-

```
enter the number of players:4
enter score of 4 players:
player 1:33
player 2:22
player 3:11
player 4:44
Swapping score 33 with 22 - Leveling up!
Swapping score 33 with 11 - Leveling up!
Swapping score 22 with 11 - Leveling up!
Level complete! Scores sorted!
Sorted scores:
player1:11
player2:22
player3:33
player4:44
```

PROGRAM 2(INSERTION SORT) :-

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

int main() {
    int n, i, j, key;
    cout << "Enter the number of cards: ";
    cin >> n;

    int cards[100];
    cout << "Enter the value of cards:" << endl;
    for (i = 0; i < n; i++) {
        cout << "Card " << i + 1 << ": ";
        cin >> cards[i];
    }

    for (i = 1; i < n; i++) {
        cout << "Pass " << i << endl;
        key = cards[i];
        j = i - 1;
        while (j >= 0 && cards[j] > key) {
```

```
            cout << "Swapping card " << cards[j] << " with card " << cards[j + 1] << " - Leveling
up!" << endl;
            cards[j + 1] = cards[j];
            j--;
        }
        cards[j + 1] = key;
        cout << "Inserted card " << key << " at position " << j + 2 << " - Leveling up!" << endl;
    }

    cout << "Level complete! Cards sorted!" << endl;
    cout << "Sorted cards:" << endl;
    for (i = 0; i < n; i++) {
        cout << "Card " << i + 1 << ": " << cards[i] << endl;
    }
    cout << endl;

    return 0;
}
```

OUTPUT :-

```
Enter the number of cards: 4
Enter the value of cards:
Card 1: 5
Card 2: 4
Card 3: 3
Card 4: 2
Pass 1
Swapping card 5 with card 4 - Leveling up!
Inserted card 4 at position 1 - Leveling up!
Pass 2
Swapping card 5 with card 3 - Leveling up!
Swapping card 4 with card 5 - Leveling up!
Inserted card 3 at position 1 - Leveling up!
Pass 3
Swapping card 5 with card 2 - Leveling up!
Swapping card 4 with card 5 - Leveling up!
Swapping card 3 with card 4 - Leveling up!
Inserted card 2 at position 1 - Leveling up!
Level complete! Cards sorted!
Sorted cards:
Card 1: 2
Card 2: 3
Card 3: 4
Card 4: 5
```