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**Question#1**

```
#include<iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int n = 5;
```

```
    int a[n];
```

```
    cout << "Enter 5 elements of the array: " << endl;
```

```
    for (int i = 0; i < n; i++) {
```

```
        cin >> a[i];
```

```
    }
```

```
    cout << "Unsorted Array: " << endl;
```

```
    for (int i = 0; i < n; i++) {
```

```
        cout << a[i] << "\t";
```

```
    }
```

```
    cout << endl;
```

```
    cout << "Insertion Sort in Descending Order" << endl;
```

```
    for (int i = 1; i < n; i++) {
```

```
        int temp = a[i];
```

```
        int j = i - 1;
```

```

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

a[j + 1] = temp;

cout << "Array after iteration " << i << ": ";
for (int k = 0; k < n; k++) {
    cout << a[k] << "\t";
}
cout << endl;
}

cout << "Sorted Array after Insertion Sort in Descending Order: " << endl;
for (int i = 0; i < n; i++) {
    cout << a[i] << "\t";
}
cout << endl;

return 0;
}

```

```
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     int n = 5;
6     int a[n];
7
8     cout << "Enter 5 elements of the array: " << endl;
9     for (int i = 0; i < n; i++) {
10         cin >> a[i];
11     }
12
13     cout << "Unsorted Array: " << endl;
14     for (int i = 0; i < n; i++) {
15         cout << a[i] << "\t";
16     }
17     cout << endl;
18 }
```

Output

```
Enter 5 elements of the array:
2
4
5
7
8
Unsorted Array:
2 4 5 7 8
Insertion Sort in Descending Order
Array after iteration 1: 4 2 5 7 8
Array after iteration 2: 5 4 2 7 8
Array after iteration 3: 7 5 4 2 8
Array after iteration 4: 8 7 5 4 2
Sorted Array after Insertion Sort in Descending Order:
8 7 5 4 2
=== Code Execution Successful ===
```

## Question#2

```
#include<iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int n = 9;
```

```
    int a[n];
```

```
    cout << "Enter 9 elements of the array: " << endl;
```

```
    for (int i = 0; i < n; i++) {
```

```
        cin >> a[i];
```

```
    }
```

```
    cout << "Unsorted Array:" << endl;
```

```
    for (int i = 0; i < n; i++) {
```

```
        cout << a[i] << " ";
```

```

}

cout << endl;

cout << "Bubble Sort" << endl;

for (int i = 0; i < n - 1; i++) {
    for (int j = 0; j < n - i - 1; j++) {
        if (a[j] > a[j + 1]) {

            int temp = a[j];
            a[j] = a[j + 1];
            a[j + 1] = temp;
        }
    }

    cout << "Array after pass " << i + 1 << ": ";
    for (int k = 0; k < n; k++) {
        cout << a[k] << " ";
    }
    cout << endl;
}

cout << "Sorted Array after Bubble Sort is: " << endl;
for (int i = 0; i < n; i++) {
    cout << a[i] << " ";
}

```

```
cout << endl;
```

```
return 0;
```

```
}
```

The screenshot displays the Programiz Online C++ Compiler interface. The browser address bar shows the URL `programiz.com/cpp-programming/online-compiler/`. A banner at the top promotes a "BLACK FRIDAY SALE" for Programiz PRO. The main interface is divided into a code editor on the left and an output window on the right.

**Code Editor (main.cpp):**

```
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     int n = 9;
6     int a[n];
7
8     cout << "Enter 9 elements of the array: " << endl;
9     for (int i = 0; i < n; i++) {
10         cin >> a[i];
11     }
12
13     cout << "Unsorted Array:" << endl;
14     for (int i = 0; i < n; i++) {
15         cout << a[i] << " ";
16     }
17     cout << endl;
18 }
```

**Output Window:**

```
Enter 9 elements of the array:
12
52
22
76
97
58
38
123
35
Unsorted Array:
12 52 22 76 97 58 38 123 35
Bubble Sort
Array after pass 1: 12 22 52 76 58 38 97 35 123
Array after pass 2: 12 22 52 58 38 76 35 97 123
Array after pass 3: 12 22 52 38 58 35 76 97 123
Array after pass 4: 12 22 38 52 35 58 76 97 123
Array after pass 5: 12 22 38 35 52 58 76 97 123
```

The Windows taskbar at the bottom shows the system time as 9:24 PM on 11/11/2024.