

main.cpp

```
#include <vector>
#include<algorithm>
#include<numeric> //for accumulator operations
#include <iostream>
using namespace std;

void display(vector<double> &v) {
    for (vector<double>::iterator i = v.begin();
        i != v.end();
        ++i)
    {
        cout << *i << " ";
    }
    cout << endl;
}

int main()
{
    // an array of doubles
    double arr[] = { 1.1, 2.2, 3.3, 2.2, 4.4 };

    //Determine the array size
    int arrSize = sizeof(arr) / sizeof(arr[0]);

    // initialize vector v1 to array arr
    vector<double> v1(arr, arr + arrSize);

    //Display the contents of vector v1
    cout << "Display vector v1: " << endl;
    display(v1);

    // Sorting the Vector in Ascending order
    sort(v1.begin(), v1.end());

    //Display the content of vector v1 after sorting
    cout << "After sorting: " << endl;
    display(v1);

    // Reversing the Vector v1
    reverse(v1.begin(), v1.end());

    //Display the content of vector v1
    cout << "After reversing: " << endl;
    display(v1);

    //Display the maximum element of vector v1
    cout << "Maximum element of vector v1: " << *max_element(v1.begin(),v1.end()) <<
endl;

    //Display the minimum element of vector v1
    cout << "Minimum element of vector v1: " << *min_element(v1.begin(),v1.end()) <<endl;

    //Display the accumulation of all elements in vector v1
    // Starting the summation from 0
    double sum1 = accumulate(v1.begin(), v1.end(), 0.0);
    cout << "Accumulation of all elements in vector v1: " << sum1 << endl;
```

```

// Counts the occurrences of 2.2 from 1st to last element
//Display the counts
const int count_num = count(v1.begin(),v1.end(), 2.2);
cout << "The occurrences of 2.2 is: " << count_num << endl;

// Delete second element of vector
v1.erase(v1.begin() + 1);

//Display the v1 after erasing the element
cout << "After deleting: " << endl;
display(v1);

//Remove the duplicate occurrences
v1.erase(unique(v1.begin(), v1.end()), v1.end());
cout << "After removing duplicates: " << endl;
display(v1);

return 0;
}

```

The screenshot shows the Microsoft Visual Studio IDE with the following components:

- Debug Console:** Displays the output of the program:


```

Display vector v1:
1.1 2.2 3.3 2.2 4.4
After sorting:
1.1 2.2 2.2 3.3 4.4
After reversing:
4.4 3.3 2.2 2.2 1.1
Maximum element of vector v1: 4.4
Minimum element of vector v1: 1.1
Accumulation of all elements in vector v1: 13.2
The occurrences of 2.2 is: 2
After deleting:
4.4 2.2 2.2 1.1
After removing duplicates:
4.4 2.2 1.1

C:\Users\hongn\OneDrive\Desktop\CECS 282 C++\Lab 12-1\Debug\main.exe (process 14844) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
      
```
- Source Code Window:** Shows the implementation of the sorting and deduplication logic:


```

30
31 // Sorting the Vector in Ascending order
32 sort(v1.begin(), v1.end());
      
```
- IDE Interface:** The top menu bar includes File, Edit, View, Git, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, and Help. The status bar at the bottom indicates "Ready" and "No issues found".