# VECTOR

## AIM:

To create a vector and demonstrate the vector operations.

## ALGORITHM:

· Declare an integer vector

· Display menu options to the user

· Read the user's choice

· Repeat the process until the exit option is selected

· If the choice is sort, sort the vector elements

· If the choice is add, read a value and insert it into the vector

· If the choice is erase, search for the given value in the vector

· If the value is found, remove it from the vector

· If the value is not found, display a message

· If the choice is display, show all vector elements

· Display the menu again and read the next choice

## PROGRAM:

```cpp
/*
*   Program to demonstrate vector
*   Author   : MUTHUGANESH S
*   Date     : 21/1/2026
*   Filename: Vector.cpp
*   retval   : void
*/

#include <iostream>
#include <vector>
#include <algorithm>
using namespace std;

int main(){

    // Declaring a vector of integers
    vector<int> V1;
    int Choice;

    cout<<"1.Sort\n2.Add Element\n3.Erase Element\n4.Display\n5.Exit\n\nEnter
    your Choice:";
    cin>>Choice;
```

```cpp
while(Choice!=5){

    // sort using STL sort function
    if(Choice==1)

        sort(V1.begin(),V1.end());

    //Adding element to the vector
    else if(Choice==2){

        int Value;

        cout<<"Enter the Element:";
        cin>>Value;

        V1.push_back(Value);

    }

    //Erasing element from the vector
    else if(Choice==3){

        int Value;

        cout<<"Enter the value:";
        cin>>Value;

        int index=-1;

        for(int i=0;i<V1.size();i++){

            if(V1[i]==Value){
                index=i;
                break;
            }

        }

        if(index != -1) {
            V1.erase(V1.begin()+index);
        }

        else{
            cout<<"Element not found\n";
        }
    }

    else if(Choice==4){

        for(int i=0;i<V1.size();i++)
            cout<<V1[i]<<" ";

        cout<<endl;
```

```cpp
        }

        else

            break;

        cout<<"1.Sort\n2.Add Element\n
         3.Erase Element\n4.Display\n5.Exit\n\nEnter your Choice:";
        cin>>Choice;

    }

    return 0;
}
```

## OUTPUT:

```
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Microsoft Windows [Version 10.0.26200.6899]
(c) Microsoft Corporation. All rights reserved.

M:\training\CPP\SEQUENCE CONTAINER>g++ Vector.cpp -o Vector.exe

M:\training\CPP\SEQUENCE CONTAINER>Vector
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:2
Enter the Element:70
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:2
Enter the Element:8
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:2
Enter the Element:10
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:4
70 8 10
1.Sort
```

```
C:\Windows\System32\cmd.e  ×   +

2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:1
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:4
8 10 70
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:3
Enter the value:10
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:4
8 70
1.Sort
2.Add Element
3.Erase Element
4.Display
5.Exit

Enter your Choice:5

M:\training\CPP\SEQUENCE CONTAI
```