**Assignment - 37 A Job Ready Bootcamp in C++, DSA and IOT**

**STL: vector**

1. Declare a vector with Initialization and print the elements.

Sol – 1.

#include<iostream>

#include<vector>

using namespace std;

int main()

{

vector<int>a={1,5,3,8,9};

vector<int>::iterator it;

for(it=a.begin();it!=a.end();it++)

{

cout<<\*it<<" ";

}

return 0;

}

1. Declare a vector without initialization, insert some elements and print

Sol – 2.

#include<iostream>

#include<vector>

using namespace std;

int main()

{

vector<int>a;

a={1,5,10,45};

vector<int>::iterator it;

for(it=a.begin();it!=a.end();it++)

{

cout<<\*it<<" ";

}

return 0;

}

1. Write a function to print the element of a vector and take input from the user.

Sol – 3.

#include<iostream>

#include<vector>

using namespace std;

int main()

{

int b;

vector<int>a={};

cout<<"Enter 0 to stop\nEnter a no : ";

cin>>b;

while(b)

{

cout<<"Enter a no : ";

a.push\_back(b);

cin>>b;

}

cout<<"Elements of vector : ";

vector<int>::iterator it;

for(it=a.begin();it!=a.end();it++)

{

cout<<\*it<<" ";

}

return 0;

}

1. Write a program to Copy one vector’s elements to another vector.

Sol – 4.

#include<iostream>

#include<vector>

using namespace std;

int main()

{

vector<int>a={1,5,10,45};

vector<int>b(a);

// b.assign(a.begin(),a.end());

vector<int>::iterator it;

for(it=b.begin();it!=b.end();it++)

{

cout<<\*it<<" ";

}

return 0;

}

1. Find largest and smallest elements in a vector

Sol – 5.

#include<bits/stdc++.h>

using namespace std;

int main()

{

vector<int>a={1,5,10,45};

cout<<"Max : "<<\*max\_element(a.begin(),a.end())<<endl;

cout<<"Min : "<<\*min\_element(a.begin(),a.end())<<endl;

return 0;

}

1. Write a program to reverse vector elements

Sol – 6.

#include<bits/stdc++.h>

using namespace std;

int main()

{

vector<int>a={1,5,10,45};

reverse(a.begin(),a.end());

cout<<"After reverse : ";

for(int x : a)

cout<<x<<" ";

return 0;

}

1. Write a program to find sum of vector elements

Sol – 7.

#include<iostream>

#include<vector>

#include<numeric>

using namespace std;

int main()

{

vector<int>a={1,5,10,45};

int sum=accumulate(a.begin(),a.end(),0);

cout<<"Sum : "<<sum;

return 0;

}

1. Write a program to find common elements between two vectors.

Sol – 8.

#include<bits/stdc++.h>

using namespace std;

int main()

{

vector<int>a={1,5,10,45,8};

vector<int>b={8,94,45,6};

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

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

vector<int>c(a.size()+b.size());

vector<int>::iterator it,end;

end=set\_intersection(a.begin(),a.end(),b.begin(),b.end(),c.begin());

cout<<"Common elements of a and b : ";

for(it=c.begin();it!=end;it++)

{

cout<<\*it<<" ";

}

cout<<endl;

return 0;

}

1. Write a program to Push and print elements in a float vector

Sol – 9.

#include<bits/stdc++.h>

using namespace std;

int main()

{

vector<float>a={1,5,10,4};

for(int i=0;i!=a.size();i++)

{

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

}

cout<<endl;

return 0;

}

1. Write a program to check whether an element exists in a vector or not.

Sol – 10.

#include<bits/stdc++.h>

using namespace std;

int main()

{

int n;

vector<int>a={1,5,10,4};

cout<<"Enter an element to search : ";

cin>>n;

vector<int>::iterator it=find(a.begin(),a.end(),n);

if(it!=a.end())

{

cout<<n<<" found at "<<it-a.begin()+1<<endl;

}

else

cout<<"Element not found";

return 0;

}