Assignment 36

1. Using STL Array gets and sets a reference to an element based on a given index.

#include<iostream>

#include<array>

using namespace std;

int main()

{

    array<int , 5> values;

    cout<<"enter the five values :"<<endl;

    for (int i = 0; i < 5; i++)

    {

        cout<<"Enter the "<<i<<" value : ";

        cin>>values[i];

    }

    cout<<"entred array is : ";

    for(int i: values)

    {

        cout<<i<<" , ";

    }

    values[3] = 12;

    values[4]= 100;

    cout<<"\n modified array is : ";

    for(int i: values)

    {

        cout<<i<<" , ";

    }

    return 0;

}

"c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ problem01.cpp -o problem01 } ; if ($?) { .\problem01 }

enter the five values :

Enter the 0 value : 7

Enter the 1 value : 8

Enter the 2 value : 9

Enter the 3 value : 4

Enter the 4 value : 5

entred array is : 7 , 8 , 9 , 4 , 5 ,

modified array is : 7 , 8 , 9 , 12 , 100 ,

PS C:\Users\tusha\Documents\coadind\assignement36.cpp>

2. Using STL Array returns the total number of elements in the array.

#include<iostream>

#include<array>

using namespace std;

int main()

{

    int count=0;

    array<int ,5> values{1,3,2,5};

    for( auto i= values.begin(); i!=values.end() ; i++)

    {

        count++;

    }

       cout<<"size of array is : "<<count<<endl;

    return 0;

}

cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ problem02.cpp -o problem02 } ; if ($?) { .\problem02 }

size of array is : 5

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3. Find the first and last element using the STL array.

#include<iostream>

#include<array>

using namespace std;

int main()

{

    array<int, 5> values{4,5,6,7,8};

    cout<<values.back();

    return 0;

}

cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ problem03.cpp -o problem03 } ; if ($?) { .\problem03 }

8

PS C:\Users\tusha\Documents\coadind\assignement36.cpp>

Returns the element from the given index using the STL array.

#include<iostream>

#include<array>

using namespace std;

int main()

{

    array<int, 5> values{4,5,6,7,8};

    cout<<values.back();

    cout<<"\n element at 4 th position is "<<values.at(3);

    return 0;

}

Output:

"c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ problem03.cpp -o problem03 } ; if ($?) { .\problem03 }

8

element at 4 th position is 7

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5. C++ STL program to demonstrate example of array::rbegin() and array::rend()

Functions

#include<bits/stdc++.h>

using namespace std;

int main()

{

    array<int ,5> values{4,5,1,2,6};

    array<string,5> name{"tushar"," harshad", "pavan","kunal","om"};

    for(auto i=values.rbegin(); i!= values.rend(); i++)

    {

        cout<<\*i<<" ";

    }

    cout<<endl;

    for(auto i=name.rbegin(); i!= name.rend(); i++)

    {

        cout<<\*i<<" ";

    }

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ problem04.cpp -o problem04 } ; if ($?) { .\problem04 }

6 2 1 5 4

om kunal pavan harshad tushar

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6. Using STL to check whether an array is empty or not.

#include<bits/stdc++.h>

using namespace std;

int main()

{

    array<int ,5> values{4,5,1,2,6};

    array<string,5> name{"tushar"," harshad", "pavan","kunal","om"};

    for(auto i=values.rbegin(); i!= values.rend(); i++)

    {

        cout<<\*i<<" ";

    }

    cout<<endl;

    if(values.empty()==0)

    {

        cout<<"\n the array is not empty"<<endl;

    }

    for(auto i=name.rbegin(); i!= name.rend(); i++)

    {

        cout<<\*i<<" ";

    }

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ problem04.cpp -o problem04 } ; if ($?) { .\problem04 }

6 2 1 5 4

the array is not empty

om kunal pavan harshad tushar

PS C:\Users\tusha\Documents\coadind\assignement36.cpp>

7. Sort an array in ascending order using sort() function in C++ STL

#include<bits/stdc++.h>

using namespace std;

int main()

{

    int values[]={4,1,3,9,2};

    int size= sizeof(values)/sizeof(0);

    for(int i : values)

    {

        cout<<i<<" ";

    }

    cout<<"\nafter sorting "<<endl;

    sort(values, values+size);

    for(int i : values)

    {

        cout<<i<<" ";

    }

}

Outpu:

cpp> cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ proble08.cpp -o proble08 } ; if ($?) { .\proble08 }

4 1 3 9 2

after sorting

1 2 3 4 9

PS C:\Users\tusha\Documents\coadind\assignement36.cpp>

8. Sort an array in descending order using sort() function in C++ STL

#include<bits/stdc++.h>

using namespace std;

int main()

{

    int values[]={4,1,3,9,2};

    int size= sizeof(values)/sizeof(0);

    for(int i : values)

    {

        cout<<i<<" ";

    }

    cout<<"\nafter sorting "<<endl;

    sort(values, values+size);

    for(int i=size-1; i>=0; i--)

    {

        cout<<values[i]<<" ";

    }

}

Other type

#include<bits/stdc++.h>

using namespace std;

int main()

{

    int values[]={4,1,3,9,2};

    int size= sizeof(values)/sizeof(0);

    for(int i : values)

    {

        cout<<i<<" ";

    }

    cout<<"\nafter sorting "<<endl;

    sort(values, values+size, greater<>());

    for(int i : values)

    {

        cout<<i<<" ";

    }

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ proble08.cpp -o proble08 } ; if ($?) { .\proble08 }

4 1 3 9 2

after sorting

9 4 3 2 1

PS C:\Users\tusha\Documents\coadind\assignement36.cpp>

9. C++ program to find the integers which come an odd number of times in an array

using C++ STL.

Input:

/\*9. C++ program to find the integers which come an odd number of times in an array

using C++ STL\*/

#include<bits/stdc++.h>

using namespace std;

int main()

{

    int n;

    cout<<"enter the size: ";

    cin>>n;

    int arr[n];

    cout<<"enter the element : ";

    for (int i = 0; i < n; i++)

    {

        cin>>arr[i];

    }

    int target=0;

    for (int i = 0; i < n; i++)

    {

        target=target^arr[i];

    }

    cout<<" single number is ";

    cout<<target;

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignement36.cpp\" ; if ($?) { g++ comitative01.cpp -o comitative01 } ; if ($?) { .\comitative01 }

enter the size: 9

enter the element : 1 3 3 5 4 1 4 2 2

single number is 5

PS C:\Users\tusha\Documents\coadind\assignement36.cpp>

5. Find largest and smallest elements in a vector

#include<bits/stdc++.h>

using namespace std;

int main()

{

    vector<int> v1{1,5,7,6,2};

    for(auto x: v1)

    {

        cout<<x<<" ";

    }

    cout<<"\nmax element of vector is : ";

    cout<<\*max\_element(v1.begin(), v1.end())<<endl;

    cout<<"min element of vector is : ";

    cout<<\*min\_element(v1.begin(), v1.end())<<endl;

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignement37\" ; if ($?) { g++ maximum.cpp -o maximum } ; if ($?) { .\maximum }

1 5 7 6 2

max element of vector is : 7

min element of vector is : 1

PS C:\Users\tusha\Documents\coadind\assignement37>