Sri Krishna College of Engineering and Technology

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2022_26_I_PSP using CPP_IRC

PSCPP_STL_CE

Attempt : 1
Total Mark : 50
Marks Obtained : 50

Section 1 : coding

1. Problem Statement:

Write a program using vectors that sort numbers in descending order.

Answer

```
// You are using GCC
#include<iostream>
#include<vector>
#include<algorithm>
using namespace std;
int main()
{
   int n;
   cin>>n;
   int a;
   vector<int>v;
   vector<int>::iterator v1;
   for(int i=0;i<n;i++)
   {
      cin>>a;
      v.push_back(a);
   }
```

```
    sort(v.begin(),v.end(),greater<int>());
    cout<<"Sorted:"<<endl;
    for(v1=v.begin();v1<v.end();v1++)
    {
        cout<<*v1<<" ";
    }
}
```

Status : Correct ***Marks : 10/10***

2. Problem Statement:

Using the sort algorithm of STL, write a program that sorts a user-defined character array in ascending order.

Answer

```
// You are using GCC
#include<iostream>
#include<vector>
#include<algorithm>
using namespace std;
int main()
{
    int n;
    cin>>n;
    vector<char> ch;
    char a;
    vector<char>::iterator it;
    cout<<"Before sorting: ";
    for(int i=0;i<n;i++)
    {
        cin>>a;
        cout<<a<<" ";
        ch.push_back(a);
    }
    cout<<endl;
    sort(ch.begin(),ch.end());
    cout<<"After sorting: ";
    for(it=ch.begin();it<ch.end();it++)
    {
        cout<<*it<<" ";
```

```
    }
}
```

Status : Correct ***Marks : 10/10***

3. Problem Statement:

Write a program that calculates the sum of unique elements of an integer STL List.

Answer

```
// You are using GCC
#include<iostream>
#include<vector>
using namespace std;
int main()
{
    int n;
    cin>>n;
    int a;
    vector<int>v;
    if(n<=15)
    {
    for(int i=0;i<n;i++)
    {
        cin>>a;
        v.push_back(a);
    }
  int z=0,s=0;
    cout<<"Sum of unique elements:";
    for(int i=0;i<n;i++)
    {
        for(int j=i+1;j<n;j++)
        {
          if(v[i]==v[j])
           {
              v[i]=0;
          }
        }

    }
```

```
    for(int r=0;r<n;r++)
    {
        s=s+v[r];
    }
    cout<<s;
    }
    else
    cout<<-1;
}
```

Status : Correct **Marks : 10/10**

4. Problem Statement:

Write a code that prints the composite numbers from an integer array.

Note: Use remove_copy_if() algorithm.

Answer

```
// You are using GCC
#include<iostream>
#include<vector>
using namespace std;
int main()
{
    int n,num;
    cin>>n;
    vector<int>v;
    if(n<=15&&n>0)
    {
    for(int i=0;i<n;i++)
    {
        cin>>num;
        v.push_back(num);
    }

    cout<<"Composite numbers: ";
    for(int i=0;i<n;i++)
    {
        int y=0;
        for(int j=1;j<=v[i];j++)
```

```
        {
            if(v[i]%j==0)
            {
                y++;
            }
        }
        if(y>2)
        {
            cout<<v[i]<<" ";
        }
        y=0;
    }
    }
    else
    {
    cout<<-1;
    }
}
```

Status : Correct **Marks : 10/10**

5. Complete the given C++ code that prints the multiplication table of a number from an array given its position without using loops.

Note: Use the concept of vectors and advancing iterator.

Answer

```
#include<iostream>
#include<iterator> // for iterators
#include<vector> // for vectors
using namespace std;
int main()
{
    int arr[] = { 11, 21, 33, 14, 41, 60, 13, 8, 25, 50 };
// You are using GCC
int n;
cin>>n;
if(n>10||n<1)
cout<<"-1";
else if(n>0&&n<11)
```

```
{
for(int i=1;i<=10;i++)
{
   cout<<arr[n-1]<<" * "<<i<<" = "<<arr[n-1]*i<<endl;
}
}
   return 0;
}
```

Status : Correct ***Marks : 10/10***