

All about iterators in CPP:

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#include<iostream>
#include<vector>
// #include<pair>
#include<iterator>
#include <bits/stdc++.h>
using namespace std;

void printVector(vector<int> v)
{
    cout<<"\nSizeof vector: "<<v.size()<<endl;
    // cout<<"\nCapacity of vector:
    "<<v.capacity()<<endl;//prints size only
    for(int i=0;i<v.size();i++)
    {
        cout<<v[i]<<" ";
    }
}

int main()
{
    // normal vector and its display
    vector<int> v={2,3,4};
    // printVector(v);

    /*
    //declarartion of iterator as type of vector<int>
    vector<int> :: iterator it;
    for(it= v.begin() ; it!=v.end();it++)
    {
        cout<<*it<<" ";
    }
    */
}
```

```

    //vector of pairs traverse using iterator
    // vector<pair<int,int>> v_p =
{{1,2},{3,4},{5,6},{7,8}};
    // vector<pair<int,int>> :: iterator itr;

    // for( itr = v_p.begin(); itr!= v_p.end(); itr++)
    // {
    //     //method 1 for iterating
    //     // cout<<(*itr).first<<"
    "<<(*itr).second<<endl;
    //     //method 2 for iterating
    //     cout<<itr->first<<" "<<itr->second<<endl;
    // }

    // thus (*itr).first==(itr->first) in case of
pairs

    //range based loop for iterating
    for(auto value: v)
    {
        value++;
        cout<<value<<" ";
    }
    cout<<endl;
    for(int i: v)
        cout<<i<<" ";

    return 0;
}

```