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How to use Multidimensional vector in C++

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Hi,

I got some problem to set the values in 2d and 3d vector.
I want to know the process to create and return the 2dimensional and 3dimensional vector values where size will be changed dynamically.

I also tried the following code but i didn't get any help:

3D vector:

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```
vector < vector < vector<int> > > tube;

for(int i=0;i<2;i++)
{
   for(j=0;j<4;j++)
   {
     for(k=0;k<15;k++)
     {
     tube.push_back( vector< vector<int> >() );
     tube[k].push_back (vector<int> ());
     tube[i][j].push_back(value)
     }
   }
}
```

but I don't know whether it will work and also don't know where should I set i,j,k parameter.

and I also want to do the same thing for 2d vector

Please let me know that what is the correct way to do this.

Thanks...

Posted 10-Sep-12 9:19am   **Updated** 10-Sep-12 9:20am v2
saqib.akhter 924

Add a Solution

Comments

[Sergey Alexandrovich Kryukov](#) 10-Sep-12 15:32pm

Not clear what's the problem? To try to run your code and see what happens? What is that supposed to mean "where should I set i, j, k parameter"? You set them where you want to access the element by index...
--SA

2 solutions

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Solution 2

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Possibly you mean something similar to

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```cpp
#include <iostream>
#include <vector>
#include <cstdlib>
using namespace std;


int main ()
{
  vector < vector < vector<int> > > tube;
  for(int i = 0; i < 2; i++)
  {
    vector < vector < int > > w;
    tube.push_back( w );
    for(int j = 0; j < 4; j++)
    {
      vector <int> v;
      tube[i].push_back( v );
      for(int k = 0; k < 15; k++)
      {
        tube[i][j].push_back( rand());
      }
    }
  }

  for (size_t i = 0; i < tube.size(); i++)
    for (size_t j = 0; j < tube[i].size(); j++)
      for (size_t k = 0; k < tube[i][j].size(); k++)
```

?

Posted 10-Sep-12 9:42am
[CPallini](#) **401.5K**

Comments

[devender_t](#) 15-Apr-16 15:37pm

Wow!!! your solution solved my issue which was not solved on Stackoverflow also.
Thank You. I truly appreciate it.

[CPallini](#) 16-Apr-16 12:14pm

Almost 4 years later? :-)
You are welcome.

Solution 1

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```
vector < vector < vector<int> > > tube;
for(int i=0;i<2;i++)
{
    tube.push_back(vector<vector<int> >());
    for(int j=0;j<4;j++)
    {
        tube[i].push_back(vector<int>());
        for(int k=0;k<15;k++)
        {
            tube[i][j].push_back(value);
        }
    }
}
```

OR more efficiently:

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```
vector < vector < vector<int> > > tube;
tube.resize(2);
for(int i=0;i<2;i++)
{
    tube[i].resize(4);
    for(int j=0;j<4;j++)
    {
        tube[i][j].resize(15, value);
    }
}
```

However if you have to use and resize 3D vectors often then its profitable to write a specialized class for the job but that's a bit more difficult than what we are discussing here.

Posted 10-Sep-12 9:33am   **Updated** 10-Sep-12 9:36am v2
pasztorpisti **39.9K**

Comments

saqib.akhter 10-Sep-12 15:43pm
It looks good.....
but I have to implement like this:
vector < vector < vector<int> > > tube;
for(int i=0;i<2;i++)
{
for(int j=0;j<4;j++)
{
for(int k=0;k<15;k++)
{
SetTubeValue(value,range,cycle,seq); //i=range,j=cycle,k=seq
}
}
}
void MyClass::SetTubeValue(int value,int range,int cycle,int seq)
{
//then set the value to tube vector;
}

Please take a look for above scenario

pasztorpisti 10-Sep-12 16:39pm
And why would you set values in the middle of the loops? First create the whole array with default values and after that issue your SetTubeValue() calls.

Add your solution here

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