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C++ Vector Operations

C++ Vector Operations

We can perform operations on C++ Vector, like CRUD operations, conversions from vector to other datatypes or vice versa can be done.

In this tutorial, we will go through some of the most used Vector Operations with examples.

C++ Vector Operation – Add Elements

You can add elements to a Vector using push_back() function.

C++ Program

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

int main() {
   vector<int> nums;
   nums.push_back(24);
   nums.push_back(81);
   nums.push_back(57);

   for(int num: nums)
      cout << num << " ";
}
```

Output

```
24 81 57
```

More about C++ Vector – Add Elements push_back().

C++ Vector Operation – Print Vector Elements

To print vector elements, you can use C++ foreach statement or any other C++ looping statements.

C++ Program

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

int main() {
   vector<int> nums;
   nums.push_back(53);
   nums.push_back(47);
   nums.push_back(85);
   nums.push_back(92);

   for (int element: nums)
      cout << element << endl;
}
```

Output

```
53
47
85
92
```

More about C++ Vector – Print Elements.

C++ Vector Operation – Get Vector Length

To get the length of a vector, use size() function on the vector.

C++ Program

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

int main() {
   vector<int> nums;
   nums.push_back(24);
   nums.push_back(81);
   nums.push_back(57);

   cout << nums.size();
}
```

Output

```
3
```

More about C++ Vector Length.

C++ Vector Operation – Remove Last Element

To remove the last element of a vector, use pop_back() function on the vector.

C++ Program

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

int main() {
   vector<int> nums;
   nums.push_back(24);
   nums.push_back(81);
   nums.push_back(57);

   nums.pop_back();

   for (int element: nums)
      cout << element << endl;
}
```

Output

```
24
81
```

More about C++ Vector – Remove Last Element.

C++ Vector Operation – Remove First Element

To remove first element from a vector, use begin() function to select the first element of the vector and erase() function for delete operation.

C++ Program

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

int main() {
   vector<int> nums;
   nums.push_back(6);
   nums.push_back(2);
   nums.push_back(7);
   nums.push_back(1);

   nums.erase(nums.begin());

   for (int num: nums)
      cout << num << endl;
```

```
}
```

Output

```
2
7
1
```

More about C++ Vector – Remove First Element.

C++ Vector Operation – Array to Vector

To convert from array to vector, you can use vector constructor with the begin and end of the array passed as arguments.

C++ Program

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

int main() {
   int numsArr[] = {2, 5, 1, 8, 4, 3, 6};
   vector<int> nums(begin(numsArr), end(numsArr));

   for (int i = 0; i < nums.size(); i++) {
      cout << nums[i] << endl;
   }
}
```

Output

```
2
5
1
8
4
3
6
```

More about Convert C++ Array to Vector.

Conclusion

In this C++ Tutorial, we have gone through Vector Operations, with detailed example programs.

C++ Tutorials