

面向对象与STL

人生苦短，我要面向对象。

Warning:找不到对象

vector

最简单的STL是vector[]简单到不能再简单了。

其中vector的insert功能很好地模拟了链表的插入操作，虽然vector的本质是数组。

(但是写一个数组的插入岂不是很繁?人生苦短啊)

例如：

OJ编号263[]hljx又来了。

```
#include<stdio.h>
#include<string.h>

#include<algorithm>
#include<vector>

using namespace std;

char sorted;
char Add[4]="Add";
char Del[4]="Del";
char Sum[4]="Sum";
char op[5];
int tmpint;
int n;
long long result;

int main()
{
    while(~scanf("%d",&n))
    {
        vector<int> a;
        sorted=1;
        while(n-->0)
        {
            scanf("%s",op);
            if(!strcmp(op,Add))
            {
                scanf("%d",&tmpint);
                a.push_back(tmpint);
            }
        }
    }
}
```

```
        sorted=0;
    }
    else if(!strcmp(op,Del))
    {
        if(!sorted)
        {
            sort(a.begin(),a.end());
            sorted=1;
        }
        scanf("%d",&tmpint);
        vector<int>::iterator it;
        for(it=a.begin();it!=a.end();++it)
        {
            if(*it==tmpint)
            {
                a.erase(it);
                break;
            }
        }
    }
    else if(!strcmp(op,Sum))
    {
        result=0;
        if(!sorted)
        {
            sort(a.begin(),a.end());
            sorted=1;
        }
        int i;
        for(i=2;i<a.size();i+=5)
        {
            result+=(long long)a[i];
        }
        printf("%lld\n",result);
    }
}
}
```

OJ编号266 AZY学习顺序表。

```
#include<stdio.h>
#include<string.h>

#include<vector>

using namespace std;
```

```
int n,m;
int tmpint;
char Insert[5]="Ins";
char Delete[5]="Del";
char Locate[5]="Loc";
char Getcha[5]="Get";
char operation[5];
int opA,opB;

int main()
{
    while(~scanf("%d%d",&n,&m))
    {
        vector<int> a;
        int i;
        for(i=0;i<n;++i)
        {
            scanf("%d",&tmpint);
            a.push_back(tmpint);
        }
        while(m--)
        {
            scanf("%s",operation);
            if(!strcmp(operation,Insert))
            {
                scanf("%d%d",&opA,&opB);
                if(opA>(a.size()+1)||opA<=0)
                {
                    printf("Wrong input!\n");
                }
                else
                {
                    a.insert(a.begin()+opA-1,opB);
                    vector<int>::iterator ni;
                    for(ni=a.begin();ni!=a.end();ni++)
                    {
                        printf("%d ",*ni);
                    }
                    printf("\n");
                }
            }
            else if(!strcmp(operation,Delete))
            {
                scanf("%d",&opA);
                char mark=0;
                vector<int>::iterator it;
                for(it=a.begin();it!=a.end();++it)
                {
                    if(*it==opA)
                    {
                        mark=1;
                    }
                }
            }
        }
    }
}
```

```
        a.erase(it);
        vector<int>::iterator ni;
        for(ni=a.begin();ni!=a.end();ni++)
        {
            printf("%d ",*ni);
        }
        printf("\n");
        break;
    }
}
if(!mark)
{
    printf("Wrong input!\n");
}
}
else if(!strcmp(operation,Locate))
{
    scanf("%d",&opA);
    char mark=0;
    vector<int>::iterator it=a.begin();
    for(i=0;it+i!=a.end();++i)
    {
        if(*(it+i)==opA)
        {
            mark=1;
            printf("%d\n",++i);
            break;
        }
    }
    if(!mark)
    {
        printf("Wrong input!\n");
    }
}
else if(!strcmp(operation,Getcha))
{
    scanf("%d",&opA);
    vector<int>::iterator it=a.begin();
    if(opA>a.size()||opA<=0)
    {
        printf("Wrong input!\n");
    }
    else
    {
        printf("%d\n",*(it+opA-1));
    }
}
}
}
```

```
}
```

OJ编号290 KevinFeng 写作文。

```
#include<iostream>
#include<vector>

using namespace std;

string add = "Add";
string del = "Del";
string rep = "Rep";
string a;
string op;
int opA;
char opB;
int opC;
int n, m;

int main()
{
    while(cin >> n >> m)
    {
        cin >> a;
        vector<char> b;
        int i;
        for(i = 0; i < a.length(); ++i)
        {
            b.push_back(a[i]);
        }
        while(m--)
        {
            cin >> op;
            if(op == add)
            {
                cin >> opA >> opB;
                b.insert(b.begin()+opA-1, opB);
            }
            else if (op == del)
            {
                cin >> opA >> opC;
                while(opC--)
                {
                    b.erase(b.begin() + opA - 1);
                }
            }
            else
            {
                cin >> opA >> opB;
```

```
        b[opA - 1] = opB;
    }
}
vector<char>::iterator c;
for(c=b.begin();c!=b.end();c++)
{
    cout << *c;
}
cout << endl;
}
}
```

看吧，vector的insert功能就是这么方便。一般如果我们需要对一个数组（或者链表）里面执行插入操作，请使用vector来减少代码量。

deque

栈和队列都好写，但是双端队列就不太好写了。这时候，我们需要合理运用deque的武器呢。

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