

### //5.2.4节 算法NPO

//非递归后根遍历算法中的辅助结点类

```
template<class T>
```

```
class AssBinTreeNode
```

```
{
```

```
private:
```

```
    BinTreeNode<T> * ptr ;
```

```
    int flag;
```

```
public:
```

```
    AssBinTreeNode( BinTreeNode<T> *p=NULL , int i=0 ): ptr(p),flag(i){} // 构造函数
```

```
    int GetFlag() { return flag; }
```

```
    void SetFlag(int i) { flag = i ; }
```

```
    BinTreeNode<T> * GetPtr() { return ptr; }
```

```
    void SetPtr(BinTreeNode<T> * p) { ptr =p ; }
```

```
};
```

//非递归后根遍历以t为根指针的二叉树

```
template<class T>
```

```
void BinTree<T>:: NorecPostOrder( BinTreeNode<T> *t ) const
```

```
{
```

```
    if ( t==NULL) return;
```

```
    AStack<AssBinTreeNode<T>*> s;
```

//建立辅助堆栈来记忆访问路径

```
    AssBinTreeNode<T>* ass,*lass,*rass;
```

```
    ass=new AssBinTreeNode<T>();
```

```
    ass->SetPtr(t);    ass->SetFlag(0);
```

```
    s.Push( ass) ;
```

```
    int i=0;
```

```
    while (!s.IsEmpty())
```

```
    {
```

```
        s.Pop(ass);
```

```
        t=ass->GetPtr();    i=ass->GetFlag();
```

```
        if (i==0)
```

```
        {
```

```
            ass->SetFlag(1);
```

```
            s.Push(ass) ;
```

```
            if((t->GetLeft()) !=NULL)
```

```
            {
```

```
                lass=new AssBinTreeNode<T>(t->GetLeft() ,0);
```

```
                lass->SetFlag(0);
```

```
                s.Push( lass) ;
```

```
            }
```

```
        }
```

```
        if (i==1)
```

```
        {
```

```
            ass->SetFlag(2);
```

```
            s.Push( ass) ;
```

```
            if((t->GetRight())!=NULL)
```

```
            {
```

```
                rass=new AssBinTreeNode<T>(t->GetRight(),0);
```

```
                rass->SetFlag(0);
```

```
                s.Push( rass) ;
```

```
            }
```

```
        }
```

```
        if (i==2)
```

```
            cout<< t->GetData()<<endl;
```

```
    }
```

```
};
```