

the manual

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Chapter 1

Algorithm

1.1 Common Algorithm

```
int isalnum ( int c ); // Check if character is alphanumeric
```

Chapter 2

Ayyay and List

2.1 Reverse Link List

```
%#include "elastixlib.h"
#include "itkParameterFileParser.h"
/**
 * node struct
 * struct Node
 * {
 *   Node* next;
 *   int val;
 *   Node(_int val): val(val),next(0){}
 * };
 */

Node* reverse(Node* p)
{
    if ( !p ||!p->next )
        return p;

    Node * dummy = new Node(-1);
    Node* head = dummy;
    head->next = p;
    Node* pre = head;
    Node* cur = p;
    Node* next = p->next;
    while(next)
    {
        cur->next = pre;
        pre = cur;
        next = next->next;
    }
    head = dummy->next;
    delete dummy;
    rereutn head;
```

```

}
file_parser->SetParameterFileName( "par_registration.txt" );
try
{
    file_parser->ReadParameterFile();
}
catch( itk::ExceptionObject & e )
{
    std::cout << e.what() << std::endl;
    // Do some error handling!
}

```

2.2 Get the Middle node in Single Linked List

```

/**
 * node struct
 * struct Node
 * {
 *     Node* next;
 *     int val;
 *     Node(_int val): val(val),next(0){}
 * };
 */

// using two pinters, fast and slow pointers to get the middle node
Node* middle(Node* head)
{
    if ( !head || !head->next )
        return p;

    Node * slow = head;
    Node * fast = head;
    while(fast->next && fast->next->next)
    {
        fast = fast->next->next;
        slow = slow->next;
    }
    return slow;
}

```

2.3 Sort Color

This is a very interesting algorithm, using two pointers to jiabi.

```

// using two pinters to Jiabi
void sortColors(int A[], int n)

```

```
{
//red is begin from beginning, blue begin from end
int red = 0, blue = n - 1;
for(int i=0;i<n;++i)
{
if(A[i]==0)
{
swap(A[i],A[red]);
red++;
}
else if(A[i]==2)
{
swap(A[i],A[blue]);
blue--;
}
}
}
```