

**манипуляции со списками**

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// Programming 1. Sample at 2016-12-01-13-56.32
#include <stdio.h>

struct Person {
    struct Person * next;
    int value;
};

int len(struct Person *head)
{
    int counter = ;
    while(head->next)
    {
        counter++;
        head=head->next;
    }
    return counter;
}

void print(struct Person *head) {
    int length = len(head);
    printf("{ ");
    head= head->next;
    while(head)
    {
        printf("%d ",head->value);
        head = head->next;
    }
    printf(" }:%d\n",length);
}

struct Person *find_prev(struct Person *a,
                        struct Person *head)
{
    while(head->next !=a)
    {
        head = head->next;
    }
    return head;
}

int compare_and_swap (struct Person *head,
                    struct Person *a,
                    struct Person *b)
{
    if( a->value > b->value) {
        struct Person *prev =find_prev(a,head);
```

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    prev->next = b;
    a->next = b->next;
    b->next = a;
    return 1;
}
return ;
}

struct Person* sort(struct Person *head)
{
    int was_changed = 1;

    while(was_changed)
    {
        struct Person *current = head->next;
        struct Person *next     = current->next;
        was_changed = ;

        while( next )
        {
            if(compare_and_swap(head,current,next))
            {
                was_changed = 1;
                break;
            }
            current = current->next;
            next = next->next;
        }
    }
}

int main(/*int c, char **v */)
{
    struct Person head;
    struct Person a ={NULL, 1};
    struct Person b ={NULL, -2};
    struct Person c ={NULL, 8};

    head.next = &a;
    a.next = &b;
    b.next = &c;

    print(&head);
    sort(&head);
    print(&head);
    return ;
}
```

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