

```

//Singly linked list with header node
typedef struct node *Nodeptr;
struct node{
    int data;
    Nodeptr next;
};

Nodeptr getnode() {
    Nodeptr temp;
    temp = (Nodeptr) malloc(sizeof(struct node));
    return temp;
}

int IsEmpty(Nodeptr head) {
    return (head->next==NULL ? 1:0);
}

void InsertFront(Nodeptr head, int x) {
    Nodeptr temp;

    temp= getnode();
    temp->data = x;

    temp->next = head->next;
    head->next = temp;
}

```

```
void Display(Nodeptr head) {  
    Nodeptr temp;  
  
    if (IsEmpty(head)) {  
        printf("Empty List");  
        return;  
    }  
    temp=head->next;  
    printf("Contents of List : \n");  
    while(temp) {  
        printf("%d\n",temp->data);  
        temp = temp->next;  
    }  
}
```

```
void InsertLast(Nodeptr head, int x) {  
    Nodeptr temp, rear;  
  
    temp= getnode();  
    temp->data = x;  
    temp->next = NULL;  
  
    rear = head;  
    while(rear->next)  
        rear = rear->next;  
    rear->next = temp;  
}
```

```
int DeleteFront(Nodeptr head) {  
    Nodeptr first;  
    int x;  
  
    if (IsEmpty(head)) {  
        printf("Empty List\n");  
        return -999;  
    }  
  
    first = head->next;  
    x = first->data;  
    head->next = first->next;  
    free(first);  
    return x;  
}
```

```
void Reverse (Nodeptr head) {  
    Nodeptr p,q,r;  
  
    p= head->next;  
    q=NULL;  
  
    while (p) {  
        r=q;  
        q=p;  
        p=p->next;  
        q->next = r;  
    }  
  
    head->next = q;  
}
```

```
int main() {  
    Nodeptr head;  
    //create a header node  
    head = getnode();  
    head->next = NULL;  
  
    InsertFront(head, 20);  
    InsertFront(head, 10);  
    Display(head);  
    InsertLast(head, 40);  
    Display(head);  
    DeleteFront(head);  
    Display(head);  
    Reverse(head);  
    Display(head);  
    return 0;  
}
```