```
#include<stdio.h>
#include<stdlib.h>
typedef struct node{
	char data;
	struct node *pre;
	struct node *next;}NODE;

NODE* insert(NODE *list,NODE *p,NODE *newnode){

	newnode -> pre = p;
	newnode -> next = p -> next;
	newnode -> next -> pre =  newnode;
	newnode -> pre -> next = newnode;
	return (p);
}
//printf subfunction
void printflist(NODE *list,char clockwise){
	NODE *p;
	p = list;
	printf("list=");
	if(clockwise = 0){
		while(p->next!=list){
			printf("%c ",p->data);
			p = p->next;
		}
		printf("%c",p->data);
		printf("\n");
	}
	else{
		while(p->pre != list){
			printf("%c",p->data);
			p = p->pre;
		}
		printf("%c",p->data);
		printf("\n");
	}

}
int main(){
	NODE *list=0,*newnode;//initialization
	list = (NODE*) malloc(sizeof(NODE));
	list->pre = list;
	list->next = list;
```

```
        list->data = 'A';//*list = 'A';
        NODE *p;
        newnode = (NODE* )malloc(sizeof(NODE));
        newnode -> data = 'B';
        p = list;
        insert(list,p,newnode);

        newnode = (NODE* )malloc(sizeof(NODE));
        newnode -> data = 'C';
        p = p->next;
        insert(list,p,newnode);

        newnode = (NODE* )malloc(sizeof(NODE));
        newnode -> data = 'D';
        p = p->next;
        insert(list,p,newnode);
        printflist(list,1);

}
```