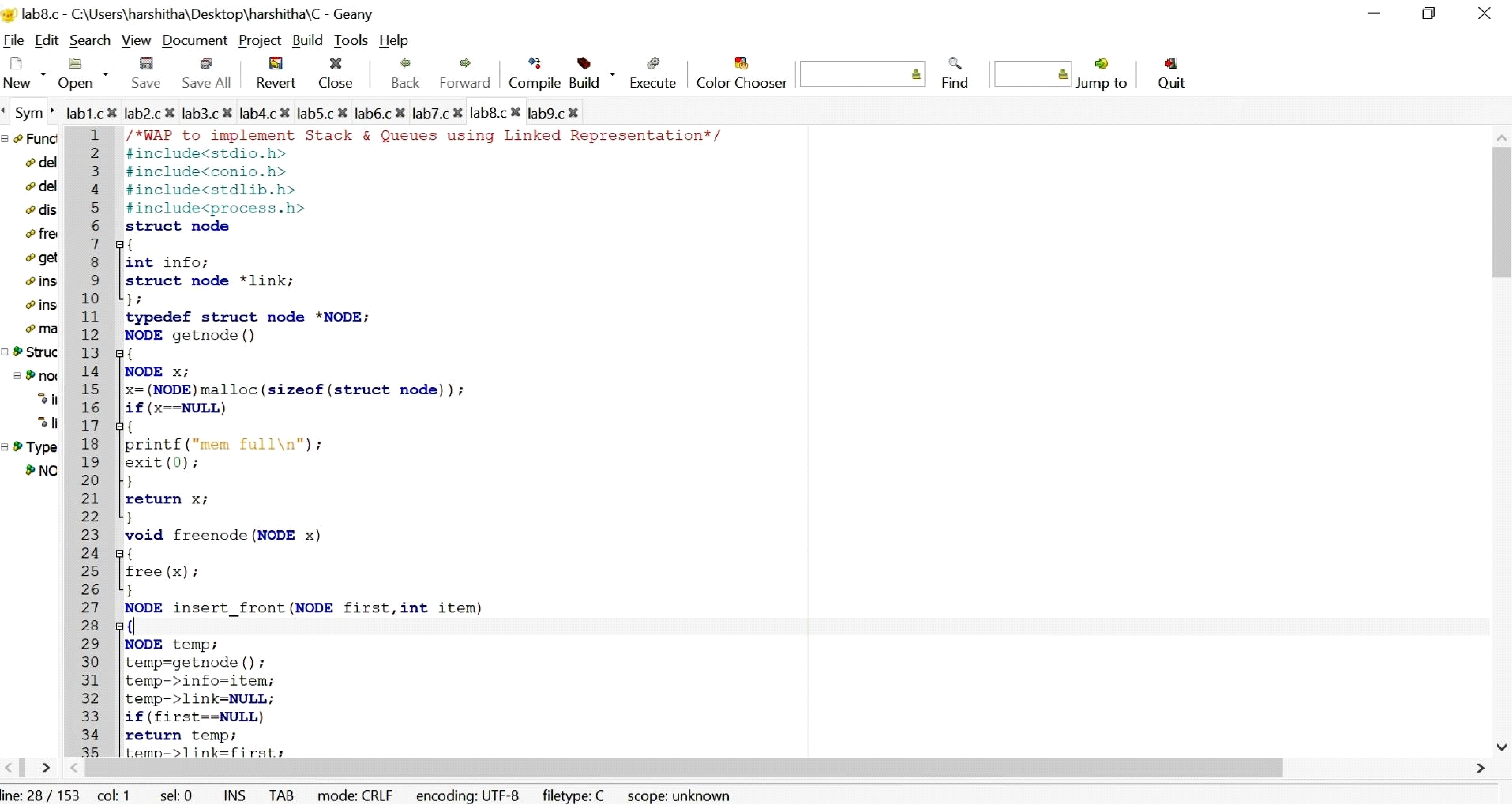
lab8.c - C:\Users\harshitha\Desktop\harshitha\C - Geany
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Sym lab1.c lab2.c lab3.c lab4.c lab5.c lab6.c lab7.c lab8.c lab9.c
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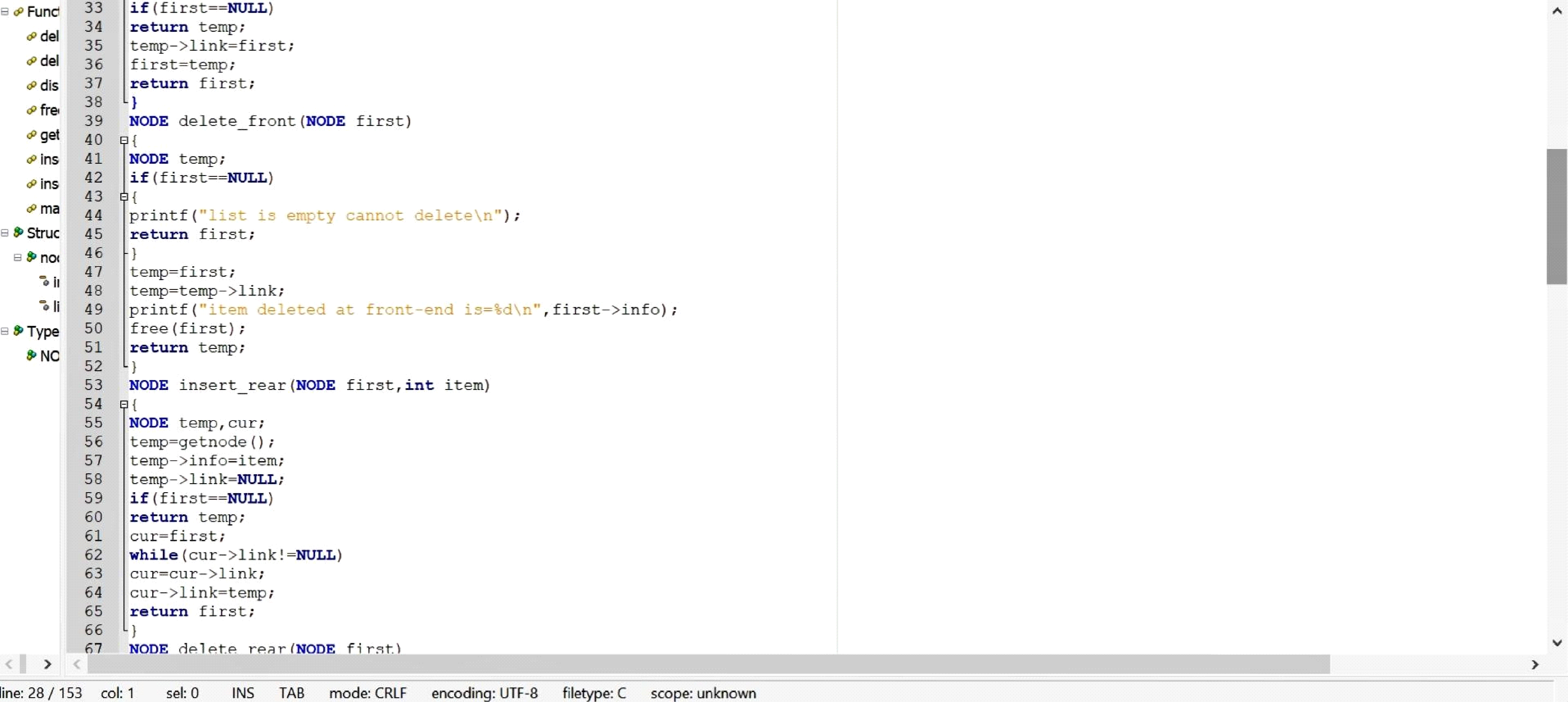
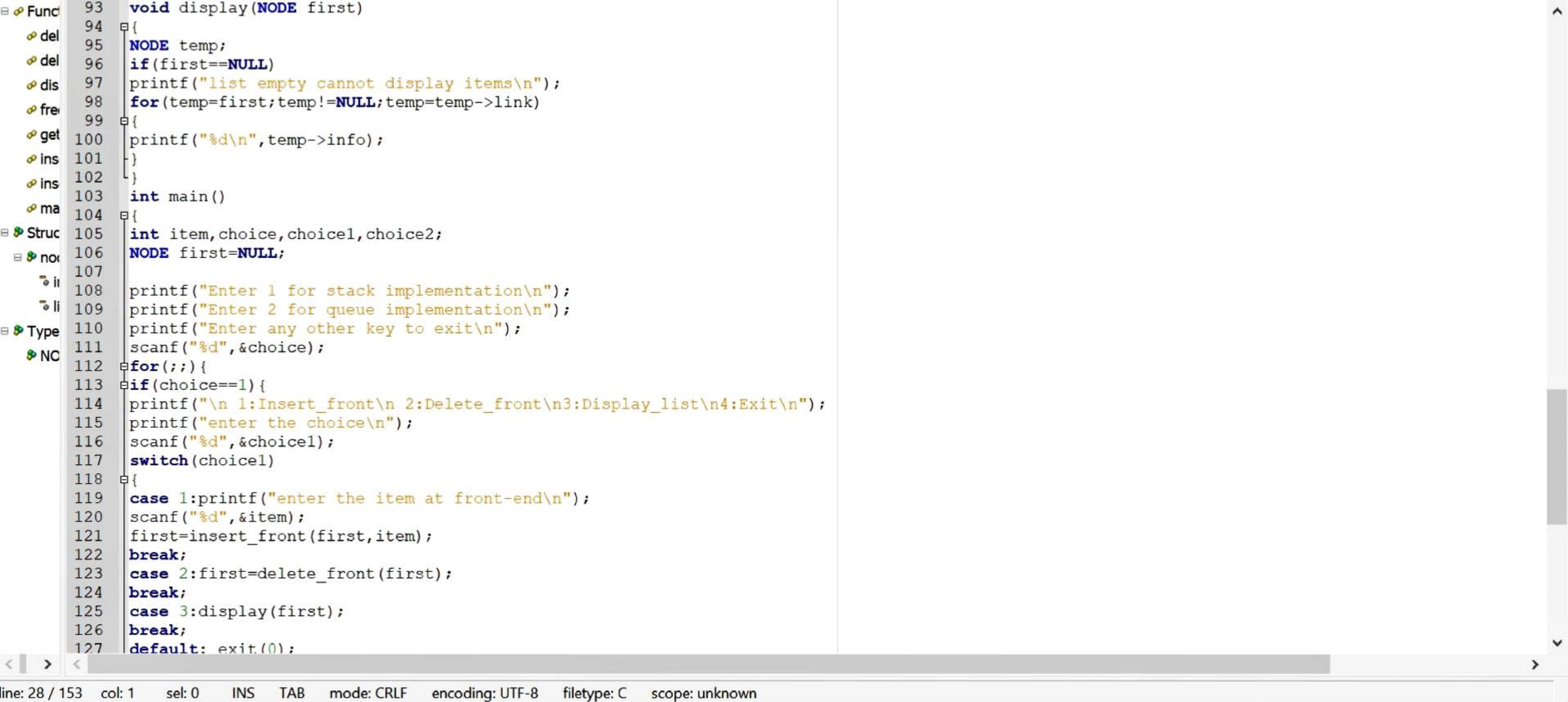
```c
/*WAP to implement Stack & Queues using Linked Representation*/
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#include<process.h>
struct node
{
int info;
struct node *link;
};
typedef struct node *NODE;
NODE getnode()
{
NODE x;
x=(NODE)malloc(sizeof(struct node));
if(x==NULL)
{
printf("mem full\n");
exit(0);
}
return x;
}
void freenode(NODE x)
{
free(x);
}
NODE insert_front(NODE first,int item)
{
NODE temp;
temp=getnode();
temp->info=item;
temp->link=NULL;
if(first==NULL)
return temp;
temp->link=first;
```

line: 28 / 153 col: 1 sel: 0 INS TAB mode: CRLF encoding: UTF-8 filetype: C scope: unknown



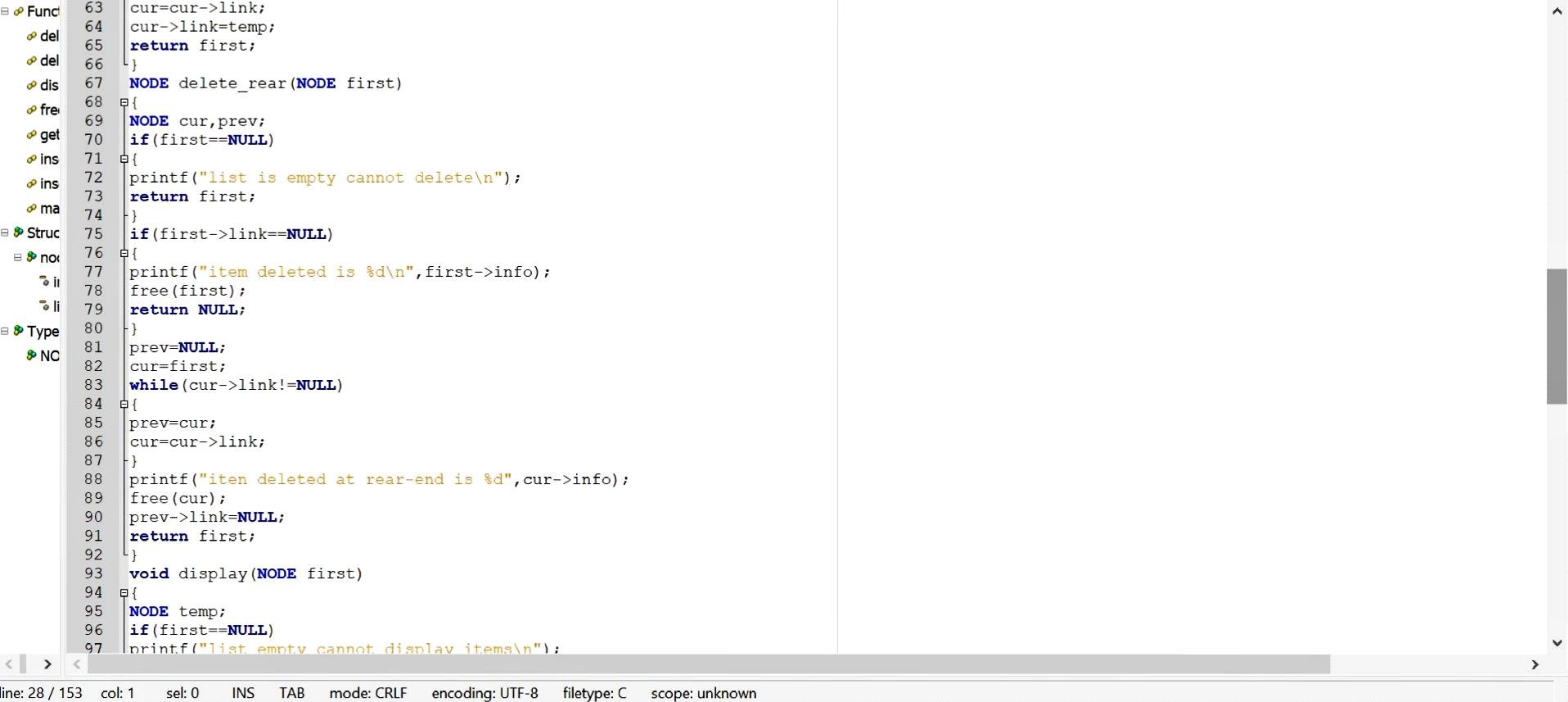
```
if(first==NULL)
return temp;
temp->link=first;
first=temp;
return first;
}
NODE delete_front(NODE first)
{
NODE temp;
if(first==NULL)
{
printf("list is empty cannot delete\n");
return first;
}
temp=first;
temp=temp->link;
printf("item deleted at front-end is=%d\n",first->info);
free(first);
return temp;
}
NODE insert_rear(NODE first,int item)
{
NODE temp,cur;
temp=getnode();
temp->info=item;
temp->link=NULL;
if(first==NULL)
return temp;
cur=first;
while(cur->link!=NULL)
cur=cur->link;
cur->link=temp;
return first;
}
NODE delete_rear(NODE first)
```

line: 28 / 153    col: 1    sel: 0    INS    TAB    mode: CRLF    encoding: UTF-8    filetype: C    scope: unknown



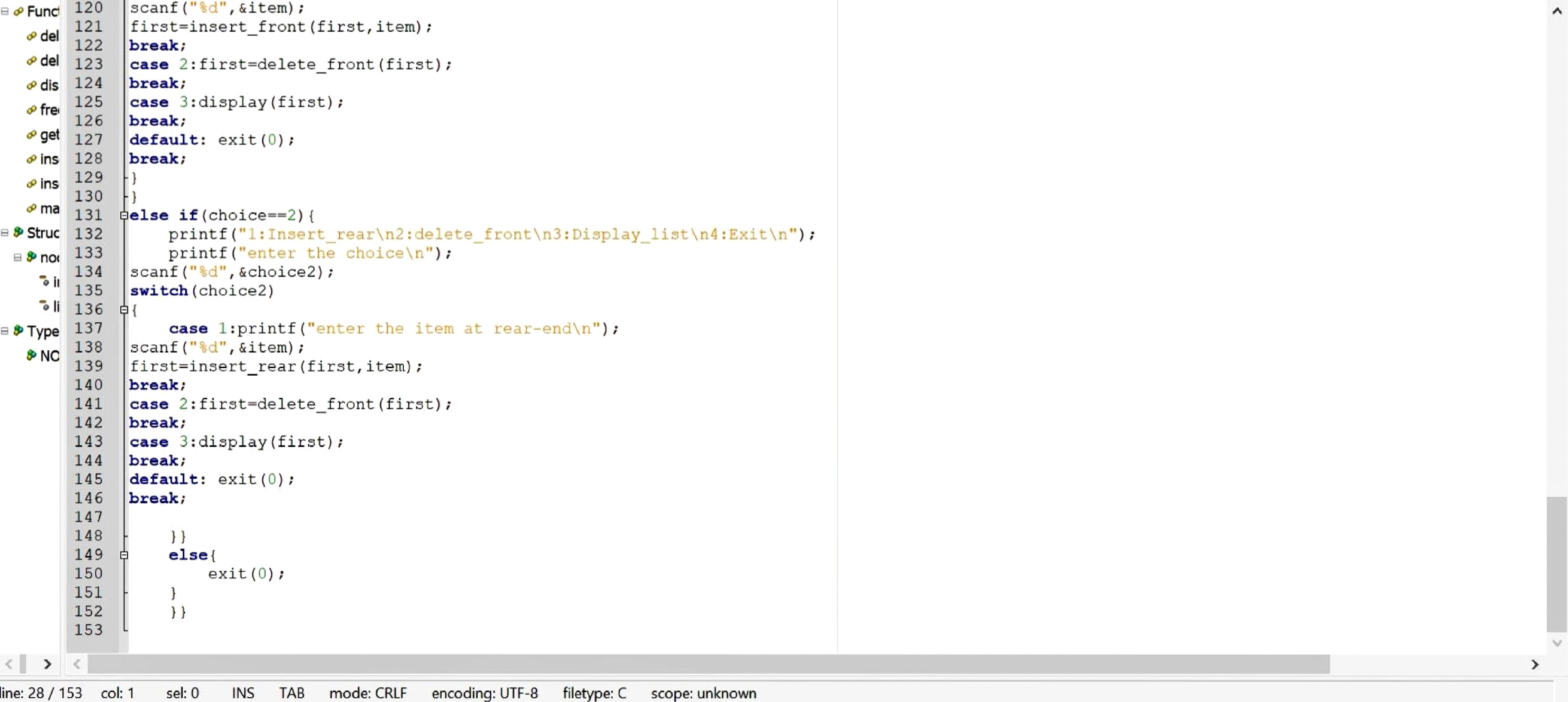
```c
void display(NODE first)
{
NODE temp;
if(first==NULL)
printf("list empty cannot display items\n");
for(temp=first;temp!=NULL;temp=temp->link)
{
printf("%d\n",temp->info);
}
}
int main()
{
int item,choice,choice1,choice2;
NODE first=NULL;

printf("Enter 1 for stack implementation\n");
printf("Enter 2 for queue implementation\n");
printf("Enter any other key to exit\n");
scanf("%d",&choice);
for(;;){
if(choice==1){
printf("\n 1:Insert_front\n 2:Delete_front\n3:Display_list\n4:Exit\n");
printf("enter the choice\n");
scanf("%d",&choice1);
switch(choice1)
{
case 1:printf("enter the item at front-end\n");
scanf("%d",&item);
first=insert_front(first,item);
break;
case 2:first=delete_front(first);
break;
case 3:display(first);
break;
default: exit(0);
```

line: 28 / 153    col: 1    sel: 0    INS    TAB    mode: CRLF    encoding: UTF-8    filetype: C    scope: unknown



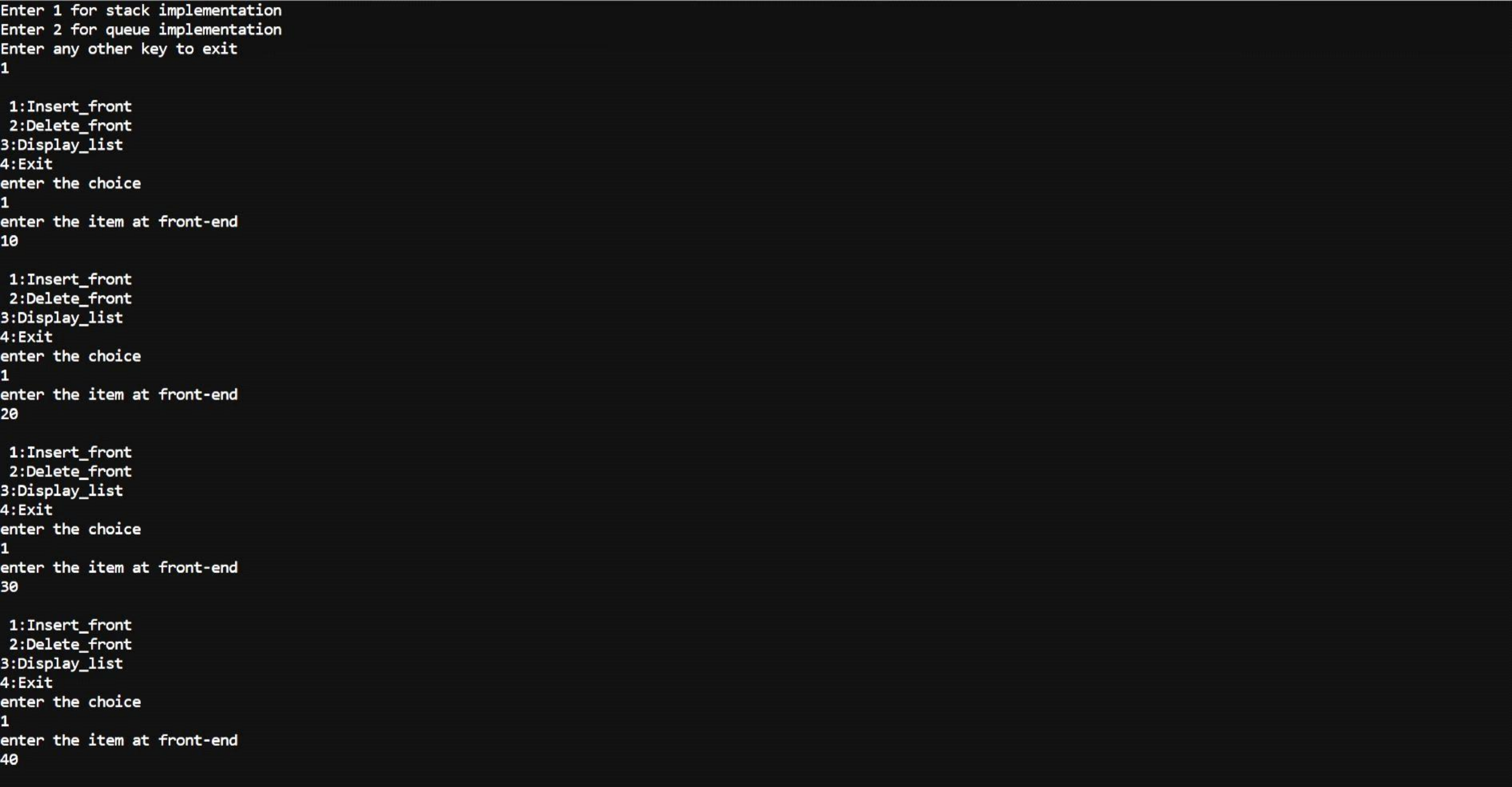
```
cur=cur->link;
cur->link=temp;
return first;
}
NODE delete_rear(NODE first)
{
NODE cur,prev;
if(first==NULL)
{
printf("list is empty cannot delete\n");
return first;
}
if(first->link==NULL)
{
printf("item deleted is %d\n",first->info);
free(first);
return NULL;
}
prev=NULL;
cur=first;
while(cur->link!=NULL)
{
prev=cur;
cur=cur->link;
}
printf("iten deleted at rear-end is %d",cur->info);
free(cur);
prev->link=NULL;
return first;
}
void display(NODE first)
{
NODE temp;
if(first==NULL)
printf("list empty cannot display items\n");
```

line: 28 / 153 col: 1 sel: 0 INS TAB mode: CRLF encoding: UTF-8 filetype: C scope: unknown

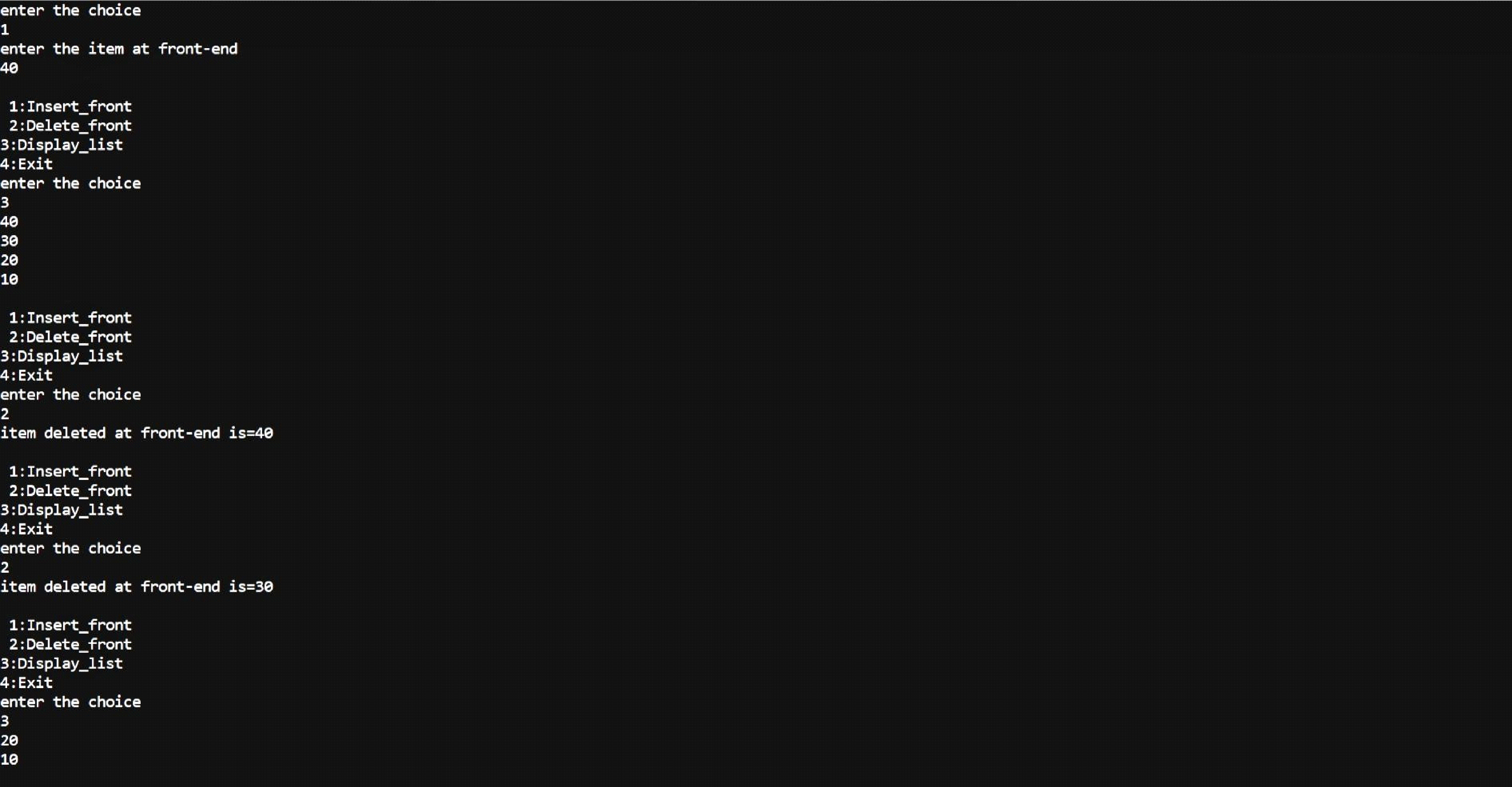


```c
scanf("%d",&item);
first=insert_front(first,item);
break;
case 2:first=delete_front(first);
break;
case 3:display(first);
break;
default: exit(0);
break;
}
}
else if(choice==2){
    printf("1:Insert_rear\n2:delete_front\n3:Display_list\n4:Exit\n");
    printf("enter the choice\n");
scanf("%d",&choice2);
switch(choice2)
{
    case 1:printf("enter the item at rear-end\n");
scanf("%d",&item);
first=insert_rear(first,item);
break;
case 2:first=delete_front(first);
break;
case 3:display(first);
break;
default: exit(0);
break;

    }}
    else{
        exit(0);
    }
    }}
```

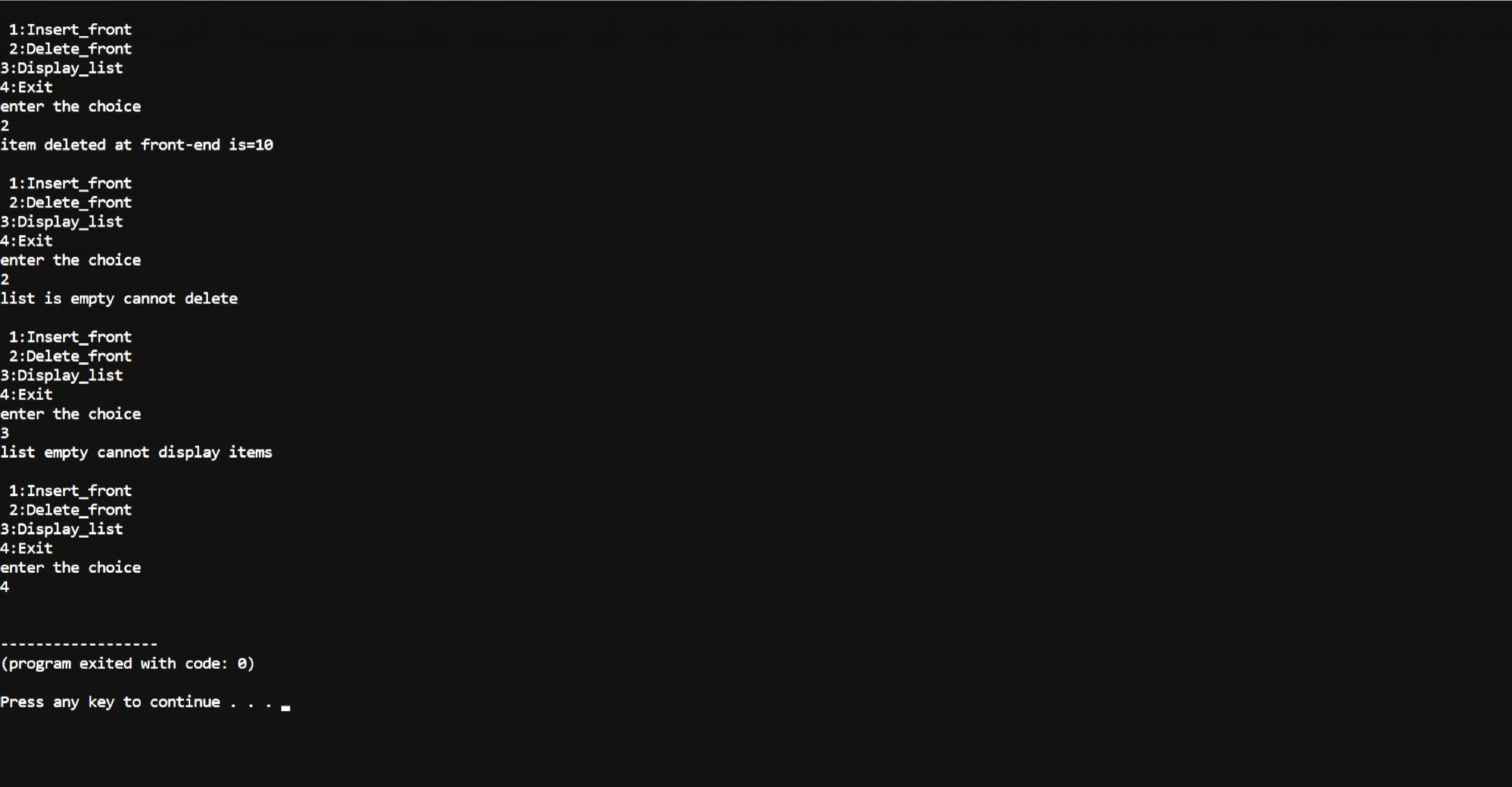
```
line: 28 / 153   col: 1   sel: 0   INS   TAB   mode: CRLF   encoding: UTF-8   filetype: C   scope: unknown
```



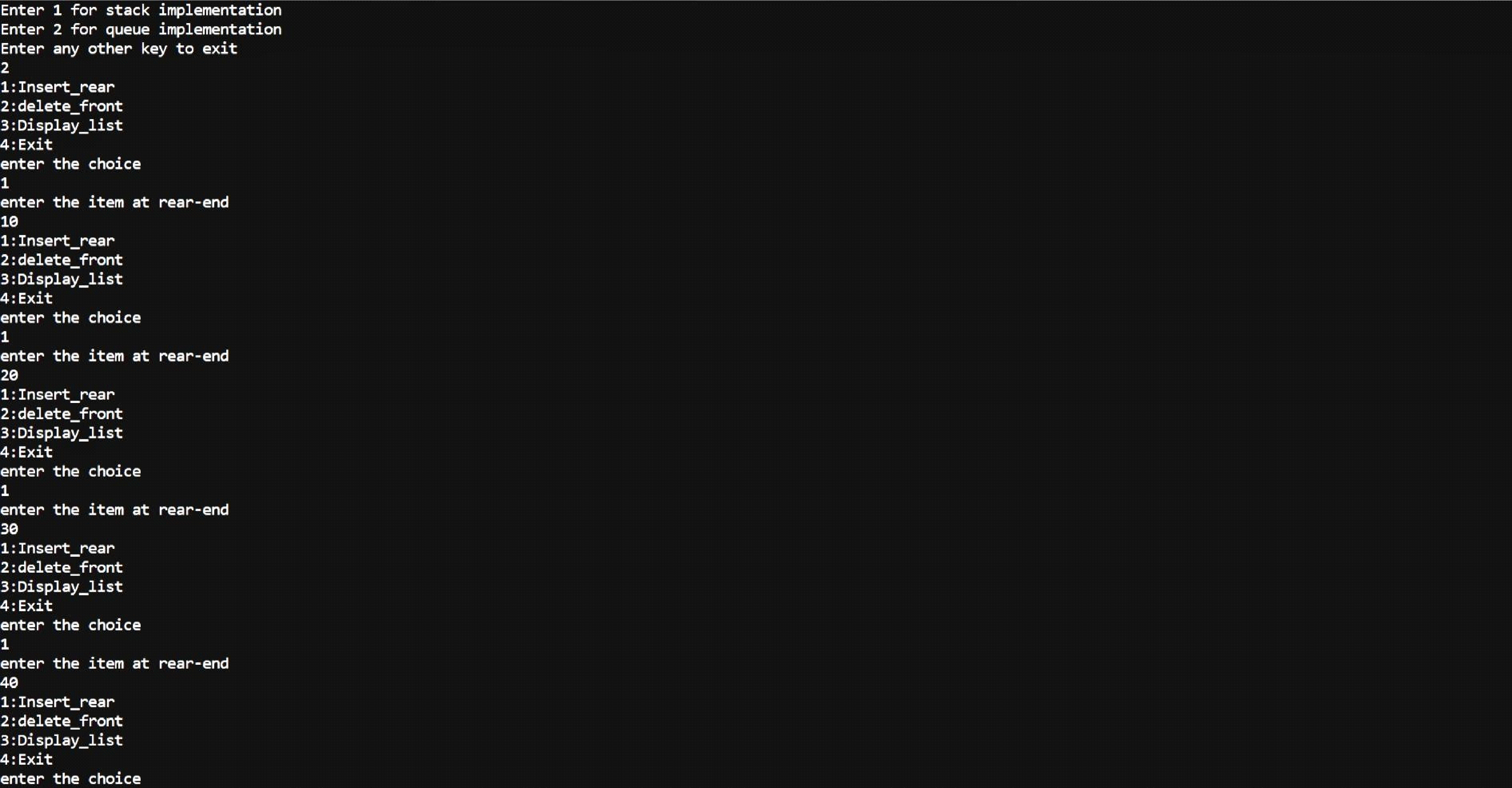
```
Enter 1 for stack implementation
Enter 2 for queue implementation
Enter any other key to exit
1

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at front-end
10

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at front-end
20

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at front-end
30

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at front-end
40
```



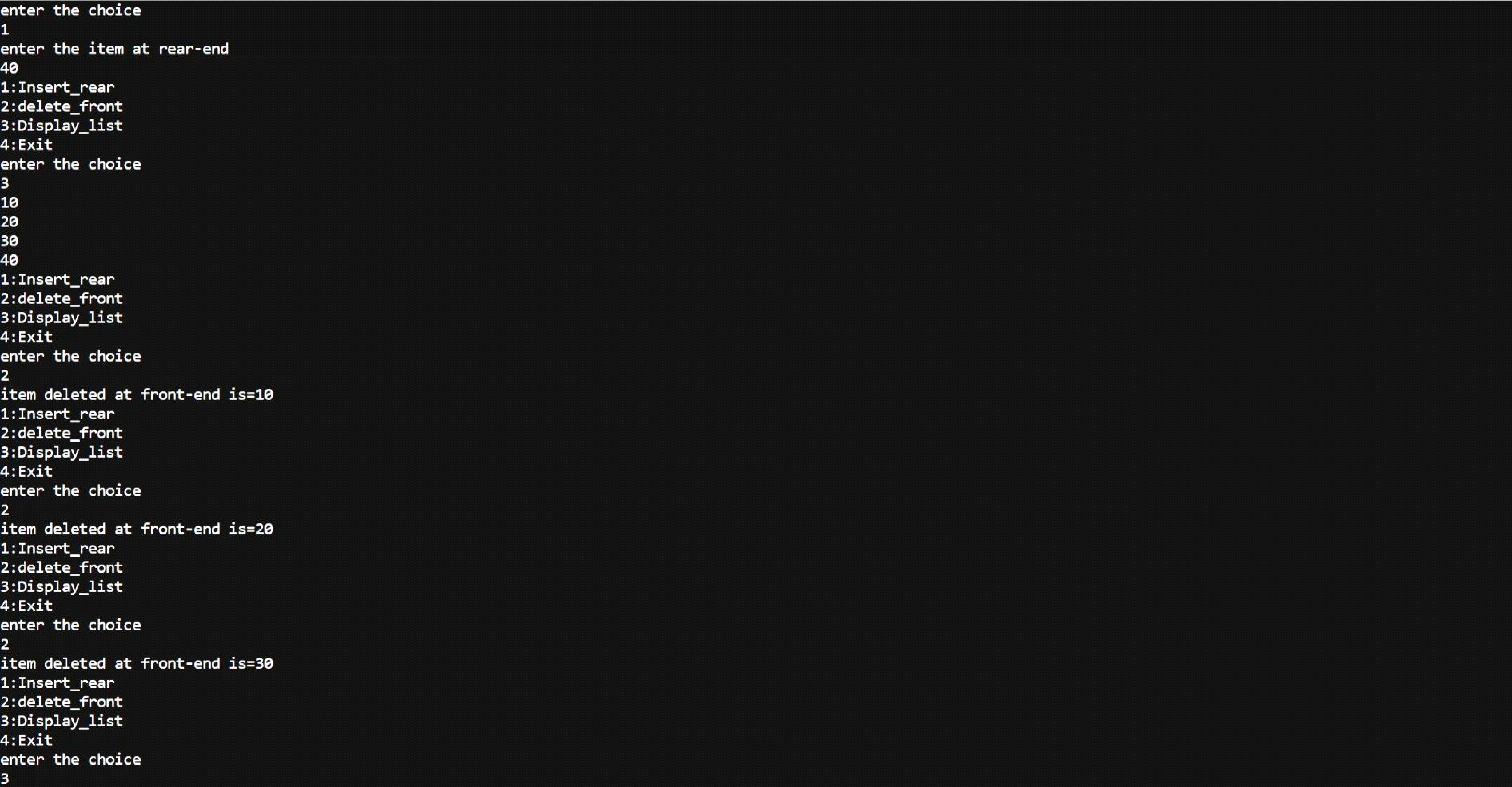
```
enter the choice
1
enter the item at front-end
40

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
3
40
30
20
10

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=40

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=30

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
3
20
10
```



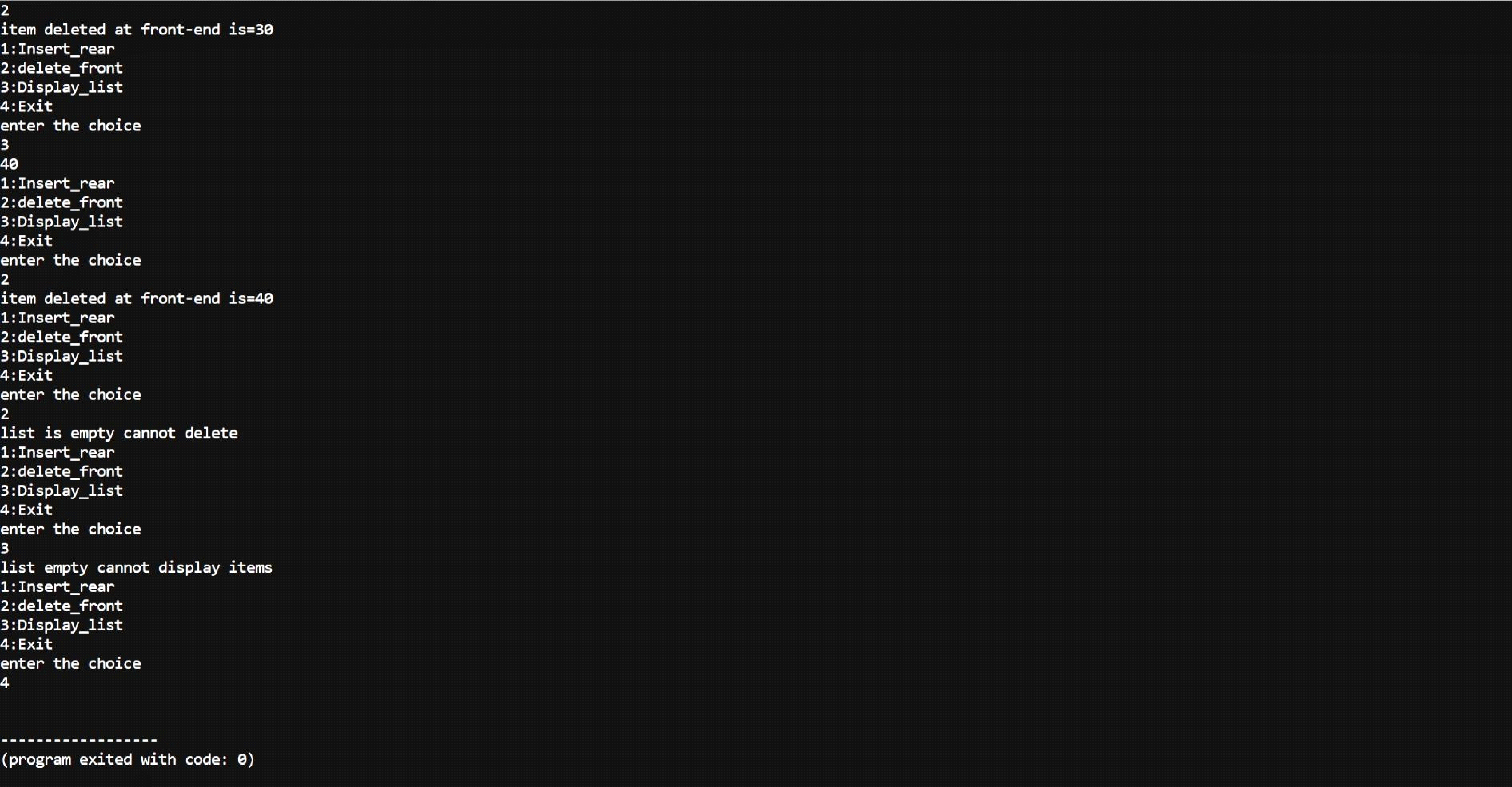
```
 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=10

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
2
list is empty cannot delete

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
3
list empty cannot display items

 1:Insert_front
 2:Delete_front
3:Display_list
4:Exit
enter the choice
4



------------------
(program exited with code: 0)

Press any key to continue . . .
```



```
Enter 1 for stack implementation
Enter 2 for queue implementation
Enter any other key to exit
2
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at rear-end
10
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at rear-end
20
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at rear-end
30
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
1
enter the item at rear-end
40
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
```



```
enter the choice
1
enter the item at rear-end
40
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
3
10
20
30
40
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=10
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=20
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=30
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
3
```



```
2
item deleted at front-end is=30
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
3
40
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
2
item deleted at front-end is=40
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
2
list is empty cannot delete
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
3
list empty cannot display items
1:Insert_rear
2:delete_front
3:Display_list
4:Exit
enter the choice
4



------------------
(program exited with code: 0)
```