C:\Users\Nikita\Desktop\programs\Singly linked list.cpp - Dev-C++ 5.11

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TDM-GCC 4.9.2 64-bit Release

(globals)

Project Classes

Singly linked list.cpp

```
1   #include<stdio.h>
2   #include<stdlib.h>
3   struct node
4   {
5     int info;
6     struct node *link;
7   };
8   typedef struct node *NODE;
9   NODE getnode()
10  {
11  NODE x;
12  x=(NODE)malloc(sizeof(struct node));
13  if(x==NULL)
14   {
15    printf("memory full\n");
16    exit(0);
17   }
18   return x;
19  }
20  void freenode(NODE x)
21  {
22  free(x);
23  }
24  NODE insert_front(NODE first,int item)
25  {
26  NODE temp;
27  temp=getnode();
28  temp->info=item;
29  temp->link=NULL;
30  if(first==NULL)
31  return temp;
32  temp->link=first;
33  first=temp;
34  return first;
35  }
36
37  NODE insert_rear(NODE first,int item)
38  {
39  NODE temp,cur;
40  temp=getnode();
```

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(globals)

Project Classes

Singly linked list.cpp

```
36
37  NODE insert_rear(NODE first,int item)
38  {
39  NODE temp,cur;
40  temp=getnode();
41  temp->info=item;
42  temp->link=NULL;
43  if(first==NULL)
44   return temp;
45  cur=first;
46  while(cur->link!=NULL)
47   cur=cur->link;
48  cur->link=temp;
49  return first;
50  }
51
52
53  void display(NODE first)
54  {
55   NODE temp;
56   if(first==NULL)
57   printf("list empty cannot display items\n");
58   for(temp=first;temp!=NULL;temp=temp->link)
59    {
60    printf("%d\n",temp->info);
61    }
62  }
63  int main()
64  {
65  int item,choice;
66  NODE first=NULL;
67
68  for(;;)
69  {
70  printf("\n1:Insert_front\n2:Insert_rear\n3:display_list\n4:Exit\n");
71  printf("enter the choice\n");
72  scanf("%d",&choice);
73  switch(choice)
74   {
75    case 1:printf("enter the item at front-end\n");
```

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TDM-GCC 4.9.2 64-bit Release

(globals)

Project Classes

Singly linked list.cpp

```
52
53  void display(NODE first)
54  {
55   NODE temp;
56   if(first==NULL)
57   printf("list empty cannot display items\n");
58   for(temp=first;temp!=NULL;temp=temp->link)
59    {
60    printf("%d\n",temp->info);
61    }
62  }
63  int main()
64  {
65  int item,choice;
66  NODE first=NULL;
67
68  for(;;)
69  {
70  printf("\n1:Insert_front\n2:Insert_rear\n3:display_list\n4:Exit\n");
71  printf("enter the choice\n");
72  scanf("%d",&choice);
73  switch(choice)
74   {
75    case 1:printf("enter the item at front-end\n");
76       scanf("%d",&item);
77       first=insert_front(first,item);
78       break;
79    case 2:printf("enter the item at rear-end\n");
80       scanf("%d",&item);
81       first=insert_rear(first,item);
82       break;
83    case 3:display(first);
84       break;
85   default:exit(0);
86       break;
87   }
88  }
89
90  }
91
```

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C:\Users\Nikita\Desktop\programs\Singly linked list.exe

```
1:Insert_front
2:Insert_rear
3:display_list
4:Exit
enter the choice
1
enter the item at front-end
20

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

1:Insert_front
2:Insert_rear
3:display_list
4:Exit
enter the choice
1
enter the item at front-end
40

1:Insert_front
2:Insert_rear
3:display_list
4:Exit
enter the choice
3
40
30
20

1:Insert_front
2:Insert_rear
3:display_list
4:Exit
```

C:\Users\Nikita\Desktop\programs\Singly linked list.exe

```
2:Insert_rear
3:display_list
4:Exit
enter the choice
3
40
30
20

1:Insert_front
2:Insert_rear
3:display_list
4:Exit
enter the choice
2
enter the item at rear-end
10

1:Insert_front
2:Insert_rear
3:display_list
4:Exit
enter the choice
3
40
30
20
10

1:Insert_front
2:Insert_rear
3:display_list
4:Exit
enter the choice
```