Lab 5

```
#include<stdio.h>
#include <stdlib.h>

Struct node
{
    int info;
    struct node *link;
};
typedef struct node *NODE;

NODE get_node ()
{
    NODE x;
    x = (NODE)malloc (sizeof (NODE));
    if (x== NULL)
    {
        printf ("Memory full ");
        exit (0);
    }
    return x;
}

void free node (NODE x)
{
    free (x);
}

NODE insert_front(NODE first, int item)
{
    NODE temp;
    temp= get-node();
```

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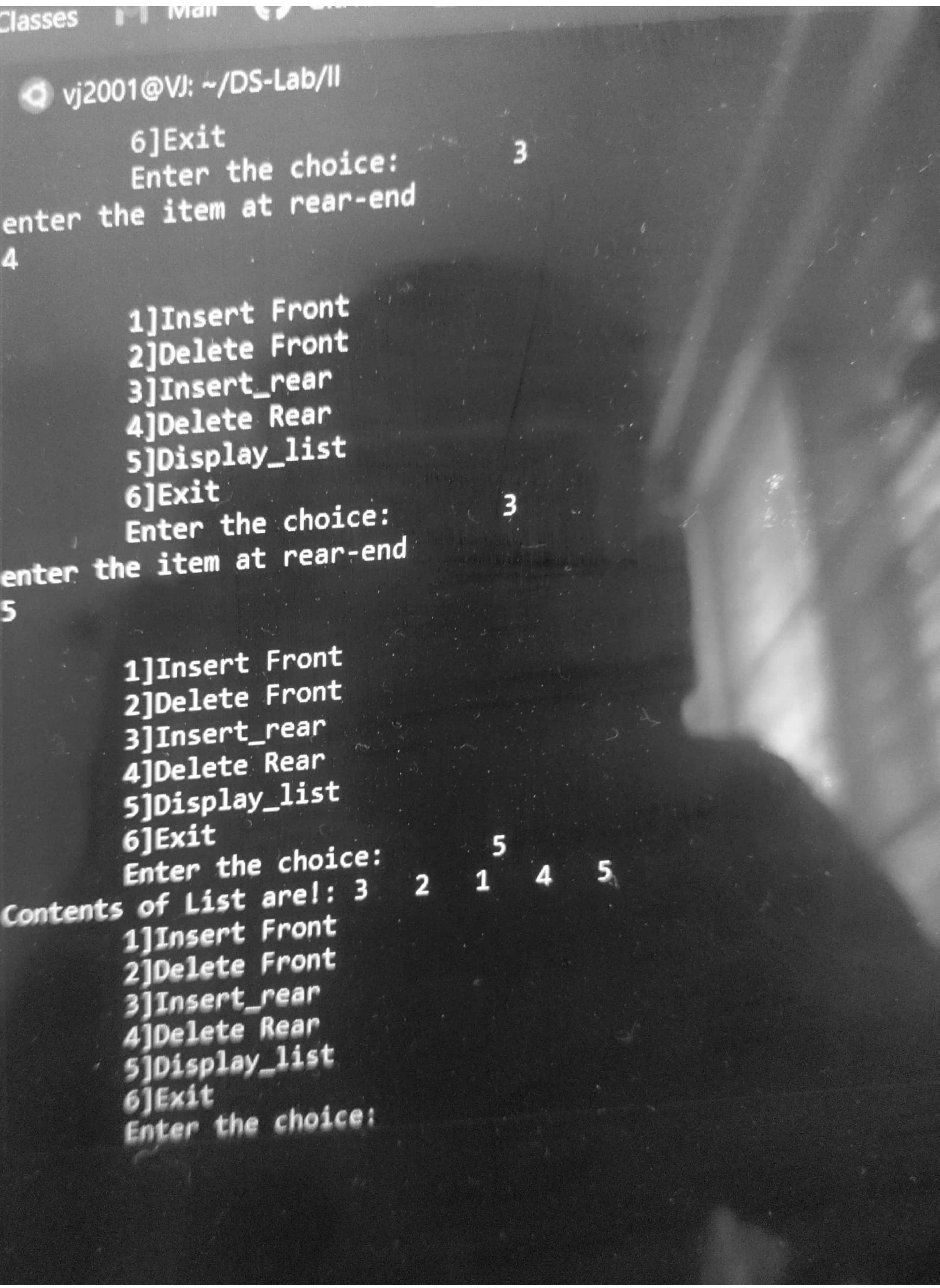
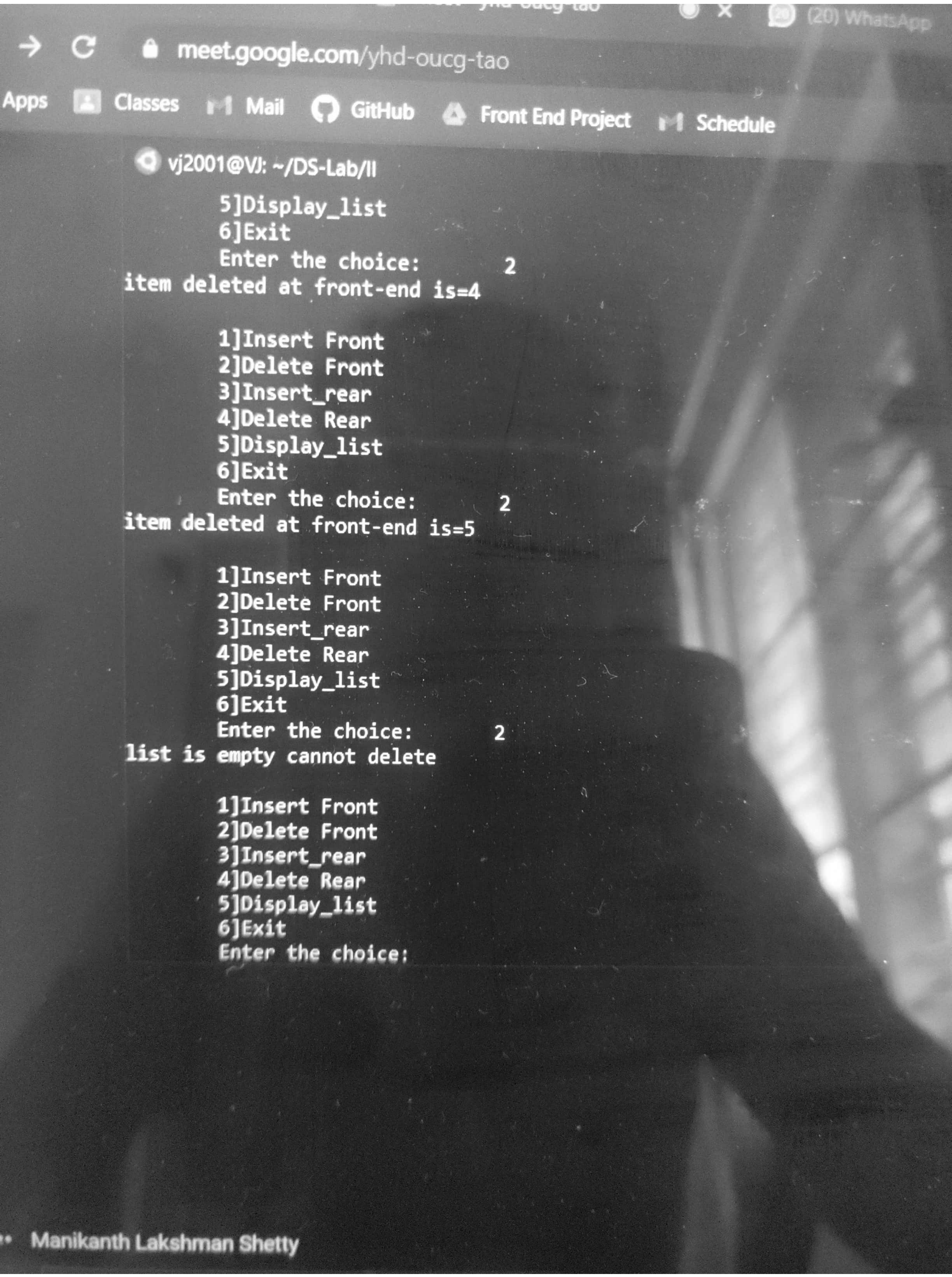
```
temp -> info = item;
temp -> link = NULL;
if (first == NULL)
  return temp;
temp -> link = first;
first = temp
 return first;
NODE deletef( Node f)
{

   Node t;
   if (f== NULL)
  { print("Empty ");
    return first;
  }
  t = f;
   t= t-> link;
  printf (" Item deleted ");
  free (f);
 return temp;
}
Node insertr( NOde first, int item)
{
  NODE temp, cur ;
  tem = get node ();
  temp -> info = item;
  temp -> link = NULL;
  if (first == NULL)
    return temp;
  cur = first ;
  return first;
}
```

```
NODE deleter(NODE f)
{
  NODE c, p;
  if (f==NULL)
  {
    printf("Empty");
    return f;
  }
  if (f->link == NULL)
  { printf(" Item deleted ");
    free(first);
    return NULL;
  }
  prev = NULL;
  c = f;
  print(" Item deleted ");
  free(c);
  p-> link =NULL;
  return f;

void display(NODE f)
{
    NODE t;
    if (f== NULL)
    {. printf('list empty cannot display ");
    printf("Elements are : ");
    for (t=f; t!= NULL; t = t-> link)
    {
       printf("%d", t-> info);
    }
 }
void main()
{
    int item, choice, pos;
    NODE first = NULL;
    for(;;)
    {
      printf("\n1] Insert front \n2] Deletefront
             \n 3] Insert rear \n 4] Delet rear
             \n 5] Display 6] Exit ");
     printf("Enter the choice: ");
     scanf("%d", &choice);
     switch (choi)
     {
       case 1: printf("Enter the item");
       scanf("%d", &item);
        first= delete_front(first);
       case 2: first = delete(f);
        break;
       case 5: first = insert_rear(f, item);
        break;
       case 4: first= delete-rear (f);
         break;
       default: exit(0);
         break;
       }
    }
}
```



```
        6]Exit
        Enter the choice:        3
enter the item at rear-end
4

        1]Insert Front
        2]Delete Front
        3]Insert_rear
        4]Delete Rear
        5]Display_list
        6]Exit
        Enter the choice:        3
enter the item at rear-end
5

        1]Insert Front
        2]Delete Front
        3]Insert_rear
        4]Delete Rear
        5]Display_list
        6]Exit
        Enter the choice:        5
Contents of List are!: 3   2   1   4   5
        1]Insert Front
        2]Delete Front
        3]Insert_rear
        4]Delete Rear
        5]Display_list
        6]Exit
        Enter the choice:
```



```
        5]Display_list
        6]Exit
        Enter the choice:       2
item deleted at front-end is=4

        1]Insert Front
        2]Delete Front
        3]Insert_rear
        4]Delete Rear
        5]Display_list
        6]Exit
        Enter the choice:       2
item deleted at front-end is=5

        1]Insert Front
        2]Delete Front
        3]Insert_rear
        4]Delete Rear
        5]Display_list
        6]Exit
        Enter the choice:       2
list is empty cannot delete

        1]Insert Front
        2]Delete Front
        3]Insert_rear
        4]Delete Rear
        5]Display_list
        6]Exit
        Enter the choice:
```

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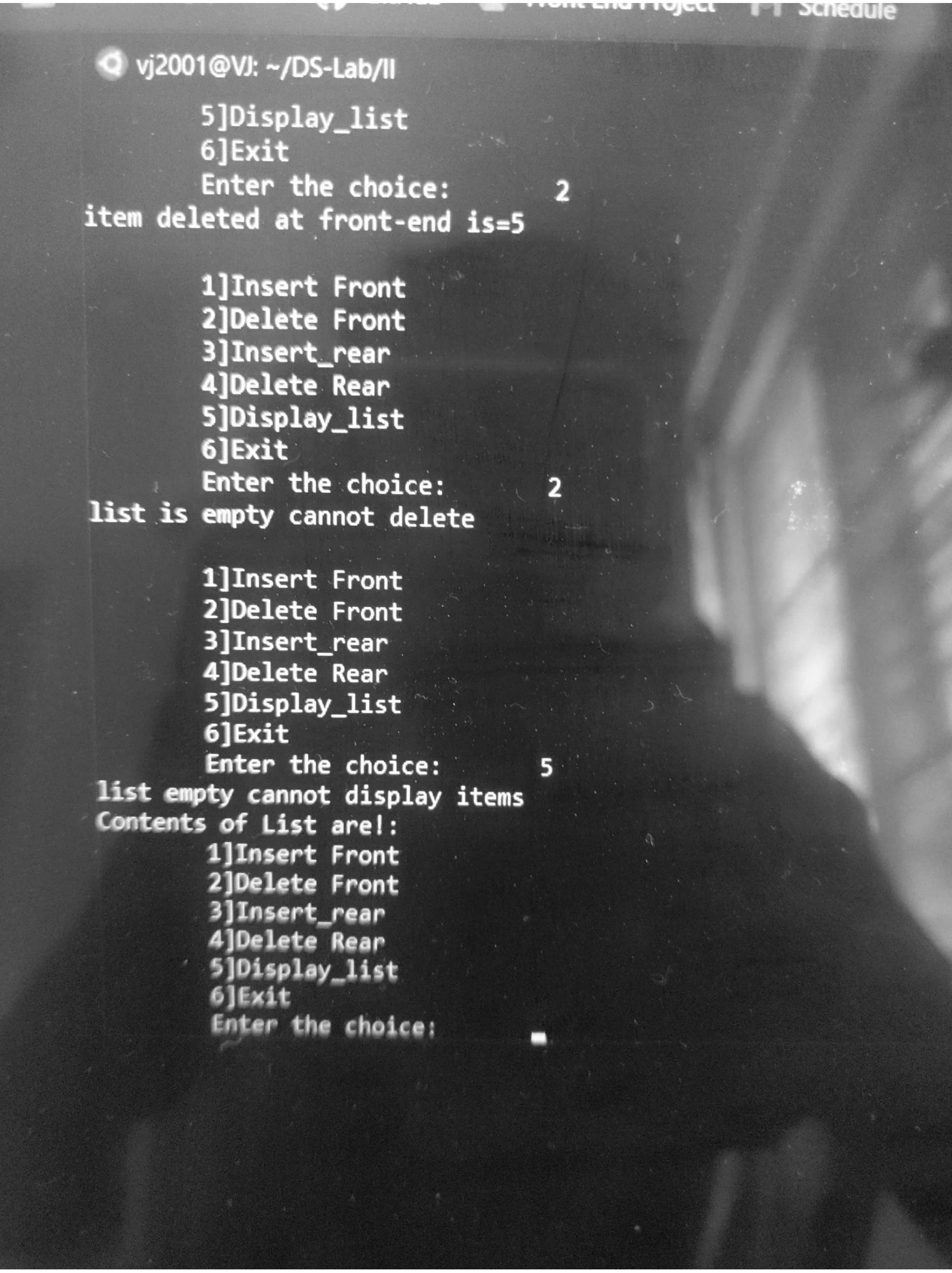

```
vj2001@VJ: ~/DS-Lab/II
          5]Display_list
          6]Exit
          Enter the choice:         2
item deleted at front-end is=5

          1]Insert Front
          2]Delete Front
          3]Insert_rear
          4]Delete Rear
          5]Display_list
          6]Exit
          Enter the choice:         2
list is empty cannot delete

          1]Insert Front
          2]Delete Front
          3]Insert_rear
          4]Delete Rear
          5]Display_list
          6]Exit
          Enter the choice:         5
list empty cannot display items
Contents of List are!:
          1]Insert Front
          2]Delete Front
          3]Insert_rear
          4]Delete Rear
          5]Display_list
          6]Exit
          Enter the choice:
```

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