<u>Competitive Programming</u>

1. **Queue implementation using Linked List**

   ### <u>Code:</u>

```cpp
#include<iostream>
using namespace std;

class que_ele
{
      public:
      int data;
      que_ele* next;
};
que_ele *front,*rear;

void enqueue()
{
      que_ele* n = new que_ele();
      cout<<"Enter value to insert : ";
      cin>>n->data;
      if(rear == NULL)
      {
            front = rear = n;
            return;
      }
      rear->next = n ;
      rear = n;
}

void dequeue()
{
      if(front == NULL)
      {
            cout<<"Queue empty\n";
            return;
      }
      que_ele* t;
      t=front;
      front=front->next;
      if(front == NULL)
            rear = NULL;
      delete(t);
}
```

```cpp
void display()
{
        que_ele *t = front;
    while (t != NULL)
    {
         cout<<" "<<t->data;
         t = t->next;
    }
    cout<<endl;
}

int main()
{

    int ch;
    char c='y';
    cout<<"\t\tMENU\n 1.Enter queue(at end)\n 2.Leave queue(from front)\n
3.Display\n";
        while(c=='y' || c=='Y')
        {
                cout<<"\nEnter choice(1-3)";
            cin>>ch;
                switch(ch)
                {
                        case 1:enqueue();
                        break;
                        case 2:dequeue();
                        break;
                        case 3:display();
                        break;
                        default:cout<<"invalid choice";
                }
                cout<<"Do you want to continue:(y/n) ";
                cin>>c;
        }
    return 0;
}
```

Output:

```
                  MENU
 1.Enter queue(at end)
 2.Leave queue(from front)
 3.Display

Enter choice(1-3)1
Enter value to insert : 23
Do you want to continue:(y/n) y

Enter choice(1-3)1
Enter value to insert : 365
Do you want to continue:(y/n) y

Enter choice(1-3)1
Enter value to insert : 251
Do you want to continue:(y/n) y

Enter choice(1-3)1
Enter value to insert : 693
Do you want to continue:(y/n) y

Enter choice(1-3)1
Enter value to insert : 2563
Do you want to continue:(y/n) y

Enter choice(1-3)3
 23 365 251 693 2563
Do you want to continue:(y/n) y

Enter choice(1-3)2
Do you want to continue:(y/n) y

Enter choice(1-3)3
 365 251 693 2563
Do you want to continue:(y/n) n
```