Lab 4

Objective:

Student should be able to develop the programs for queue using arrays and linked list

Exercise 1: Implementation of Queue using Array or Linked list

Consider a real life situation. Formulate a question and then design a simulation that can help to answer it. Choose one of the following situations:

- Cars lined up at a car wash
- Customers at a grocery store check-out
- Airplanes taking off and landing on a runway
- A bank teller

Be sure to state any assumptions that you make and provide any probabilistic data that must be considered as part of the scenario.

Answer:

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

const int size = 100;
int front = -1;
int rear = -1;

struct Queue{
   int turn[size];
   string name[size];
   string flat_no[size];

void enQueue(int t, string n, string f)
{
   if (rear == size - 1)
   cout<<"Queue now is full"<<endl;
   else {
      if (front == - 1)
      front = 0;
      rear++;
      turn[rear] = t;
      name[rear] = n;
      flat_no[rear] = f;
      cout<<"Elements in queue : "<<turn[rear]<<"
"<<name[rear]<<" "<<flat_no[rear]<<" is cleaned!"<<endl;
```

```
    }
}

void deQueue()
{
    if (front == - 1 || front > rear) {
        cout<<"Queue is full ";
        return ;
    } else {
        cout<<"Elements that deleted : "<< turn[front] <<" "<<
name[front]<<" "<<flat_no[front]<<endl;
        front++;;
    }
}
};
int main(){
    Queue u;
        u.enQueue( 1, "Asyraf", "'VCF4537'");
        u.enQueue( 2, "Pika", "'ST3829N'");
        u.enQueue( 3, "Aidil", "'SD3343V'");
        u.deQueue();
}
```