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EX NO: 07
PROGRAM NAME: IMPLEMENTATION OF QUEUE USING ARRAY AND LINKED LIST IMPLEMENTATION

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CODE 1: ARRAY QUEUE

```
#include<stdio.h>
# define SIZE 5
int q[SIZE],f=-1,r=-1;
int isfull(){
   if(r==SIZE-1)
      return(1);
   else
     return(0);
}
int isempty(){
   if(f==SIZE)
     return(1);
   else
     return(0);
}
void Enque(int elt){
   if(isfull())
   {
```

```
        printf("Queue is full");
    }
    else{
        if(r==-1)
          f++;
        r++;
        q[r]=elt;
    }
}
void Dque(){
    if(isempty()){
        printf("Queue is empty");
        f=-1;
        r=-1;
    }
    else{
    printf("%d\n",q[f]);
    f++;}
}
int main(){
    int elt,n;
    scanf("%d",&n);
    for(int i=0;i<n;i++){
        scanf("%d",&elt);
```

```
        Enque(elt);
    }
    printf("\n");
    Dque();
    Dque();
    Dque();




}
```

OUTPUT 1:

```
5
1
2
3
4
5

1
2
3
```

Process returned 0 (0x0)   execution time : 4.376 s

Press any key to continue.

CODE 2: LINKED LIST QUEUE

```
#include<stdio.h>
struct node{
   int data;
   struct node*link;
}*first=NULL,*last,*temp;
int isempty()
{if(first==NULL)
   return(1);
  else
   return(0);

}
void Enque(int elt)
{
  struct node* new=(struct node*)malloc(sizeof(struct node));
  if(isempty()){
      new->link=NULL;
      new->data=elt;
      first=new;
```

```
      last=new;
   }
   else{
      new->data=elt;
      last->link=new;
      new->link=NULL;
      last=new;
   }
}
void Dque(){
   if(isempty()){
      printf("Queue is empty");
      last=first;
   }
   temp=first;
   first=first->link;
   printf("%d ",temp->data);
   free(temp);
}
int main()
{
   int elt,n;
   scanf("%d",&n);
   for(int i=0;i<n;i++){
```

```
        scanf("%d",&elt);
        Enque(elt);
    }
    Dque();
    Dque();
    Dque();
    Dque();
    Dque();
    Dque();
}
```

OUTPUT2:

```
5
1
2
3
4
5
1 2 3 4 5 Queue is empty
Process returned -1073741819 (0xC0000005)   execution time : 7.510 s
Press any key to continue.
```