LAB 3

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Write a program to simulate working of linear queue

```c
#include<stdio.h>
#include<conio.h>
#define max 3
int q[max],front=-1,rear=-1,ch,item,x;
void insert(int);
int del();
void display();
void main()
{
while(1){
printf("\nQueue Implementation");
printf("\n1.Insert");
printf("\n2.Delete");
printf("\n3.Display");
printf("\n4.Exit");

printf("\nEnter Your Choice: ");
scanf("%d",&ch);
switch(ch)
{
case 1:printf("Enter Element to Insert:\n");
    scanf("%d",&item);
    insert(item);
```

```c
        /*if(x==1)

        printf("Queue is Full");*/

        break;


case 2:x=del();

        printf("The Element Deleted from Queue is %d",x);

        /*if(x==1)

        printf("Queue is Empty");*/

        break;


case 3:display();

        break;


case 4:exit(0);

        break;
default:printf("INVALID Choice\n");
}
}
}

void insert(x)
{
if(rear==max-1)
printf("Queue is OVERFLOW(full) \n");
else if(rear==-1)
  {
  front=0;rear=0;
  q[rear]=x;
  }
```

```c
else
  {
rear++;
q[rear]=x;
  }
}


int del()
{
if(front==-1)
printf("Queue is UNDERFLOW(empty) \n");
else if(front==rear)
 {
 x=q[front];
 front=-1;
 rear=-1;
 return(x);
 }
 else
 {
 x=q[front];
 front++;
 return(x);
 }
}


void display()
{
int i;
```

```c
if(rear==-1)

printf("\n Queue is Empty");

else

{

for(i=front;i<=rear;i++)

printf("%d\t",q[i]);

}

}
```

Output