main.c

```c
/*The XYZ clinic has a waiting room with ten chairs. The chairs available in the clinic should
be designed to occupy based on the FIFO architecture and also more efficiently by allowing
customers to occupy the seats vacantly. In the case of no vacant seats in the waiting room, a
“Waiting Room Full” message should be displayed at the reception counter. Develop an
application(C Program) for the above scenario with a suitable data structure.*/
#include<stdio.h>
#include<stdlib.h>
#define size 3
int item,front=0,rear=-1,q[size],count=0;
void insertrear()
{
    if(count==size)
    {
        printf("Waiting Room Full");
        return;
    }
    rear=(rear+1)%size;
    q[rear]=item;
    count++;
}
int deletefront()
{
    if(count==0) return -1;
    item=q[front];
    front=(front+1)%size;
    count=count-1;
    return item;
}
void displayQ()
{
    int i,f;
    if(count==0)
    {
        printf("Vacant waiting room\n");
        return;
    }
    f=front;
    printf("Waiting room token numbers \n");
    for(i=1;i<=count;i++)
```

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```c
    printf("Waiting room token numbers \n");
    for(i=1;i<=count;i++)
    {
        printf("%d\n",q[f]);
        f=(f+1)%size;
    }
}
void main()
{
    int choice;
    for(;;)
    {
        printf("\n1:Enter waiting room\n2:Exit waiting room\n3:Display token number\n4:Exit\n");
        printf("Enter the choice\n");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:
            printf("Enter your token number\n");
            scanf("%d",&item);
            insertrear();
            break;
            case 2:item=deletefront();
            if(item==-1)
            printf("Vacant waiting room\n");
            else
            printf("Token number %d exited waiting room\n",item);
            break;
            case 3:displayQ();
            break;
            case 4:exit(0);
            break;
            default:printf("Invalid choice\n");
        }
    }
}


```

input

```
1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
1
Enter your token number
1

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
1
Enter your token number
2

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
1
Enter your token number
3

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
1
Enter your token number
4
Waiting Room Full
```

input

```
2
Token number 1 exited waiting room

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
2
Token number 2 exited waiting room

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
2
Token number 3 exited waiting room

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
2
Vacant waiting room

1:Enter waiting room
2:Exit waiting room
3:Display token number
4:Exit
Enter the choice
4


...Program finished with exit code 0
Press ENTER to exit console.
```

main.c

```c
/*Develop an application (C Program) with suitable data structure to demonstrate the Online
Movie Ticket Reservation system, in which users request should get process on the basis of
First come First basis and display “Reservation Full”, “Reservation Started” appropriately
based on the availability of the Tickets.*/
#include<stdio.h>
#include<stdlib.h>
#define QUE_SIZE 3
int item,front=0,rear=-1,q[10];
void insertrear()
{
    if(rear==QUE_SIZE-1)
    {
    printf("Reservation Full\n");
    return ;
    }
    rear=rear+1;
    q[rear]=item;
}
void displayQ()
{
    int i;
    if(front>rear)
    {
        printf("Reservation Started\n");
        return ;
    }
    printf("Reserved seat numbers\n");
    for(i=front;i<=rear;i++)
    {
        printf("%d\n",q[i]);
    }
}
void main()
{
    int choice;
    for(;;)
    {
        printf("\n1:Reserve ticket\n2:Display reserved seats\n3:Exit\n");
        printf("Enter the choice\n");
```

main.c

```c
    return ;
    }
    rear=rear+1;
    q[rear]=item;
}
void displayQ()
{
    int i;
    if(front>rear)
    {
        printf("Reservation Started\n");
        return ;
    }
    printf("Reserved seat numbers\n");
    for(i=front;i<=rear;i++)
    {
        printf("%d\n",q[i]);
    }
}
void main()
{
    int choice;
    for(;;)
    {
        printf("\n1:Reserve ticket\n2:Display reserved seats\n3:Exit\n");
        printf("Enter the choice\n");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:printf("Enter the seat number\n");
            scanf("%d",&item);
            insertrear();
            break;
            case 2:displayQ();
            break;
            default:exit(0);
        }
    }
}
```

```
1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
1
Enter the seat number
34

1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
1
Enter the seat number
45

1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
1
Enter the seat number
67

1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
1
Enter the seat number
23
Reservation Full

1:Reserve ticket
2:Display reserved seats
3:Exit
```

```
1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
1
Enter the seat number
67

1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
1
Enter the seat number
23
Reservation Full

1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
2
Reserved seat numbers
34
45
67

1:Reserve ticket
2:Display reserved seats
3:Exit
Enter the choice
3


...Program finished with exit code 0
Press ENTER to exit console.
```