

### Lab program 3:-

```
#include <stdio.h>
```

```
#include <process.h>
```

```
#define QUE - SIZE 3
```

```
int item, front = 0, rear = -1, q[10];
```

```
void insertRear()
```

```
{
```

```
if (rear == QUE - SIZE - 1)
```

```
{
```

```
printf("\n - - - - - \n QUEUE OVERFLOW \n - - - - - \n");
```

```
return;
```

```
}
```

```
rear++;
```

```
q[rear] = item;
```

```
}
```

```
int deleteFront()
```

```
{
```

```
if (front > rear)
```

```
{
```

```
front = 0;
```

```
rear = -1;
```

```
return -1;
```

```
}
```

```
return q[front++];
```

```
}
```

```

void displayQ() {
    int i;
    if (front > rear) {
        printf("\n ----- \n QUEUE IS EMPTY \n ----- \n");
        return;
    }
    printf("Contents of the queue \n");
    for (i = front; i <= rear; i++)
        printf("%d \n", q[i]);
}

void main() {
    int choice;
    for (i = 1; i <= 4; i++) {
        printf("\n 1: Insert Rear \n 2: Delete Front \n 3: Display \n 4: EXIT \n");
        printf("Enter your choice: ");
        scanf("%d", &choice);
        switch (choice) {
            case 1: printf("\n Enter the value to be inserted: ");
                    scanf("%d", &item);
                    insertRear();
                    break;
            case 2: item = deleteFront();
                    if (item == -1)
                        printf("\n ----- \n QUEUE IS EMPTY \n ----- \n");
                    else
                        printf("\n Item deleted = %d \n", item);
                    break;
            case 3: displayQ();
                    break;
            default: return;
        }
    }
}

```

```

#include<stdio.h>
#include<process.h>
#define QUE_SIZE 3

int item,front=0,rear=-1,q[10];
void insertrear()
{
    if(rear==QUE_SIZE-1)
    {
        printf("\n-----\nQUEUE OVERFLOW\n-----\n");
        return;
    }
    rear+=1;
    q[rear]=item;
}

int deletefront()
{
    if(front>rear)
    {
        front=0;
        rear=-1;
        return -1;
    }
    return q[front++];
}

void displayQ()
{
    int i;
    if(front>rear)
    {
        printf("\n-----\nQUEUE IS EMPTY\n-----\n");
        return;
    }
    printf("Contents of the queue:\n");
    for(i=front;i<=rear;i++)
    {
        printf("%d\n",q[i]);
    }
}

```

```

void main()
{
    int choice;
    for(;;)
    {
        printf("\n1:Insert Rear\n2:Delete Front\n3:Display Queue\n4:EXIT\n");
        printf("Enter your choice: ");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:printf("\nEnter the value to be inserted: ");
                    scanf("%d",&item);
                    insertrear();
                    break;
            case 2:item=deletefront();
                    if(item==-1)
                        printf("\n-----\nQUEUE IS EMPTY\n-----\n");
                    else
                        printf("Item Deleted= %d\n",item);
                    break;
            case 3:displayQ();
                    break;
            default:return;
        }
    }
}

```

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT

Enter your choice: 1

Enter the value to be inserted: 12

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT

Enter your choice: 1

Enter the value to be inserted: 13

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT

Enter your choice: 1

Enter the value to be inserted: 14

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT

Enter your choice: 1

Enter the value to be inserted: 15

-----  
QUEUE OVERFLOW



1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT  
Enter your choice: 3  
Contents of the queue:  
12  
13  
14

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT  
Enter your choice: 2  
Item Deleted= 12

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT  
Enter your choice: 2  
Item Deleted= 13

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT  
Enter your choice: 2  
Item Deleted= 14

1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT  
Enter your choice: 2

-----  
QUEUE IS EMPTY  
-----

```
1:Insert Rear  
2>Delete Front  
3:Display Queue  
4:EXIT
```

```
Enter your choice: 4
```

```
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```