Name – Nitin kr. Sharma
Reg no – 12006550
Roll no – A14
Faculty – Sanjeev Kumar

Ques: Implementation of queue with help of array or with the help of operation.

1. Insertion

2. Deletion

3. Display of an element

Ans: All the three-operations performed in this code below:

```c
#include <stdio.h>
#include <stdlib.h>
#define MAX 50
void insert();
void delete ();
void display();
int queue_array[MAX];
int rear = -1;
int front = -1;
int main()
{
    int choice;
    while (1)
    {
        printf("\n");
        printf("1.Insert element to queue \n");
        printf("2.Delete element from queue \n");
        printf("3.Display all elements of queue \n");
        printf("4.Quit \n");
        printf("Enter your choice : \n");
        scanf("%d", &choice);
        switch (choice)
        {
        case 1:
            insert();
            break;
        case 2:
            delete ();
            break;
        case 3:
            display();
            break;
        case 4:
```

```
            exit(1);
        default:
            printf("Wrong choice \n");
        }
    }
}

// 1. Inserting the element in the queue
void insert()
{
    int item;
    if (rear == MAX - 1)
        printf("Queue Overflow \n");
    else
    {
        if (front == -1)
            front = 0;
        printf("Insert the element in queue : ");
        scanf("%d", &item);
        rear = rear + 1;
        queue_array[rear] = item;
    }
}

// 2. deleting an the element in the queue
void delete ()
{
    if (front == -1 || front > rear)
    {
        printf("Queue Underflow \n");
        return;
    }
    else
    {
        printf("Element deleted from queue is : %d\n", queue_array[front]);
        front = front + 1;
    }
}

// 3. displaying all the elements in the queue
void display()
{
    int i;
    if (front == -1)
        printf("Queue is empty \n");
    else
    {
        printf("Queue is : ");
```

```
        for (i = front; i <= rear; i++)
            printf("%d ", queue_array[i]);
    }
}
```

Output:

```
PS D:\My Learning\my learning\College\LPU-4th-sem\Data Structure using C> cd
"d:\My Learning\my learning\College\LPU-4th-sem\Data Structure using C\" ; if
($?) { gcc Queue2.c -o Queue2 } ; if ($?) { .\Queue2 }

1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice :
1
Insert the element in queue : 34

1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice :
1
Insert the element in queue : 67

1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice :
1
Insert the element in queue : 88

1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice :
1
Insert the element in queue : 99

1.Insert element to queue
2.Delete element from queue
```

```
3.Display all elements of queue
4.Quit
Enter your choice :
3

1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice :
2
Element deleted from queue is : 34

1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice :
3
Queue is : 67 88 99
```