

MANALI IT EXPT2

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

```
int Q[100], FRONT = -1, REAR = -1, i, n, x, choice;
```

```
void insert();
```

```
void delete ();
```

```
void display();
```

```
void main()
```

```
{  
    printf("\t WELCOME to implementation of QUEUE using array !! \n");  
    printf("Enter the size of Queue (Maximum size = 100): ");  
    scanf("%d", &n);  
    do  
    {  
        printf("\n Queue Operation available: \n");  
        printf("\t1.Insert \t2.Delete \t3.Display \t4.Exit \n");  
        printf("\n Enter your choice: ");  
        scanf("%d", &choice);  
        switch (choice)  
        {  
            case 1:  
                insert();  
                break;  
            case 2:  
                delete ();  
                break;  
            case 3:  
                display();  
                break;  
            case 4:  
                printf("Exit: Program Finished !! ");  
                break;  
            default:  
                printf("Please enter a valid choice 1, 2, 3, 4 \n");  
                break;  
        }  
    } while (choice != 4);  
}
```

```
void insert()
```

```
{  
    if (REAR >= n - 1)  
    {  
        printf(" Queue Overflow ! \n");  
    }  
    else  
    {  
        printf(" Enter the element to insert: ");  
        scanf("%d", &x);  
        REAR++;  
        Q[REAR] = x;
```

```

        if (FRONT == -1)
        {
            FRONT = 0;
        }
    }
}

```

```

void delete ()
{
    if (FRONT == -1)
    {
        printf(" Queue Underflow ! \n");
    }
    else
    {
        printf(" The deleted element is: %d \n", Q[FRONT]);
        if (FRONT == REAR)
            FRONT = REAR = -1;
        else
            FRONT++;
    }
}

```

```

void display()
{
    if (REAR < 0)
    {
        printf(" Queue is empty ! \n");
    }
    else
    {
        printf(" The elements in the Queue are: \n");
        for (i = FRONT; i < n; i++)
        {
            printf(" %d ", Q[i]);
        }
        printf("\n");
    }
}

```

```
dl405@dl405-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/queue.c$ gcc queue.c
dl405@dl405-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/queue.c$ ./a.out
WELCOME to implementation of QUEUE using array !!
Enter the size of Queue (Maximum size = 100): 5

Queue Operation available:
    1.Insert        2.Delete        3.Display        4.Exit

Enter your choice: 1
Enter the element to insert: 4

Queue Operation available:
    1.Insert        2.Delete        3.Display        4.Exit

Enter your choice: 1
Enter the element to insert: 8

Queue Operation available:
    1.Insert        2.Delete        3.Display        4.Exit

Enter your choice: 1
Enter the element to insert: 12

Queue Operation available:
    1.Insert        2.Delete        3.Display        4.Exit

Enter your choice: 2
The deleted element is: 4

Queue Operation available:
    1.Insert        2.Delete        3.Display        4.Exit

Enter your choice: 3
The elements in the Queue are:
8 12 0 0

Queue Operation available:
    1.Insert        2.Delete        3.Display        4.Exit

Enter your choice: 4
Exit: Program Finished !! dl405@dl405-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/queue.c$ █
```