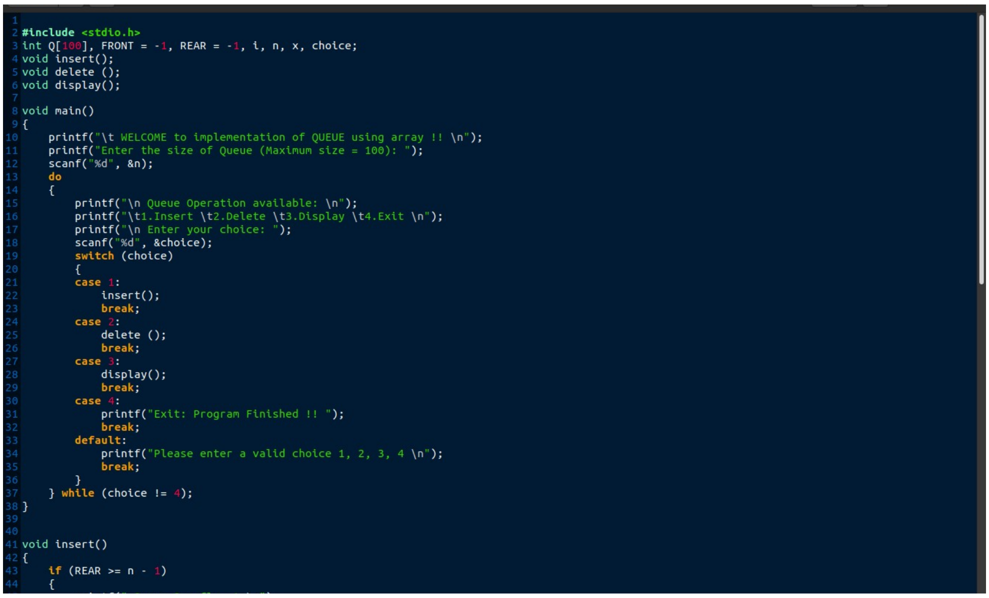
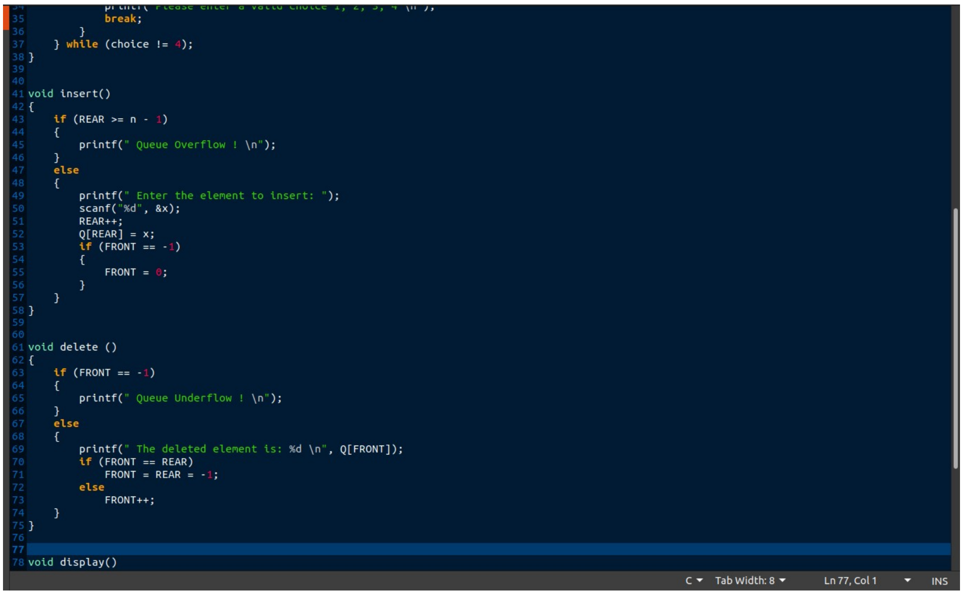
Meet patel - DSA - exp 2 – implementation of queue .

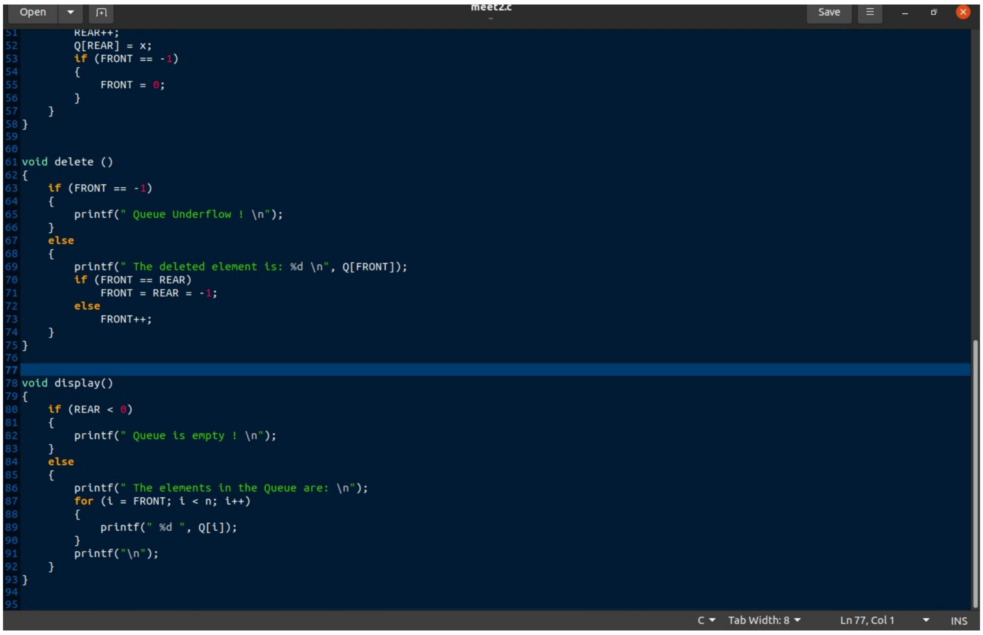


```c

#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)
    {
```



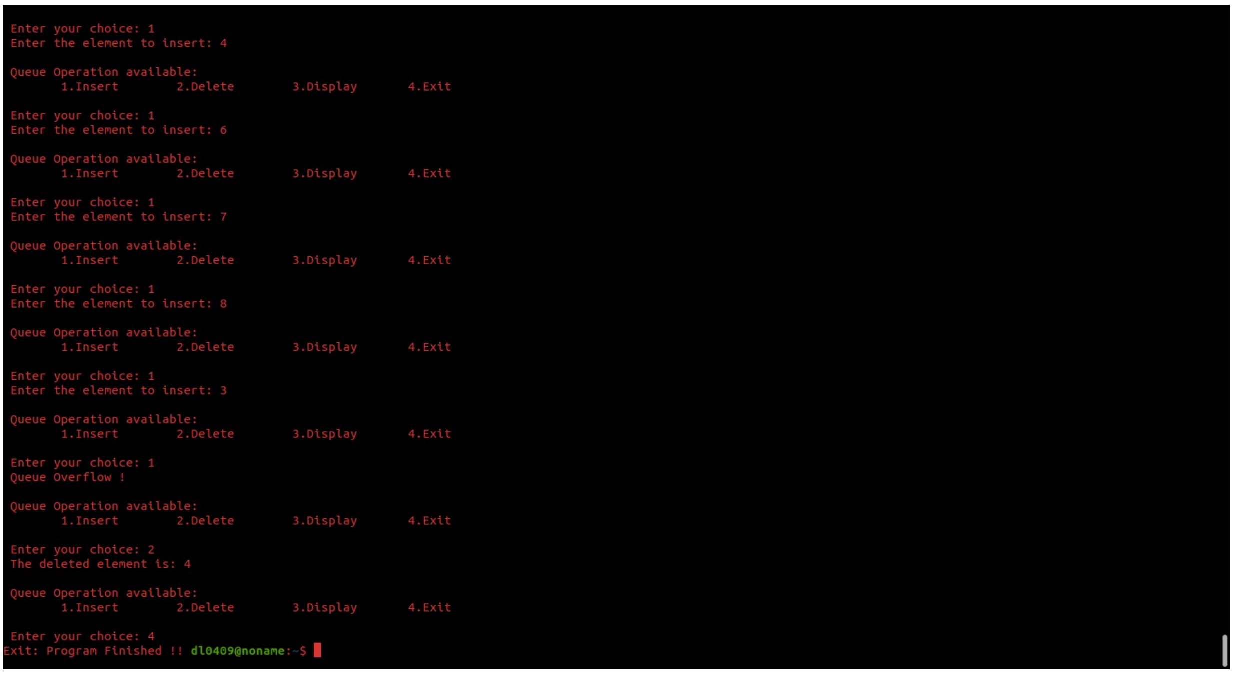
```c
            break;
        }
    } while (choice != 4);
}


void insert()
{
    if (REAR >= n - 1)
    {
```

```c
        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()
```

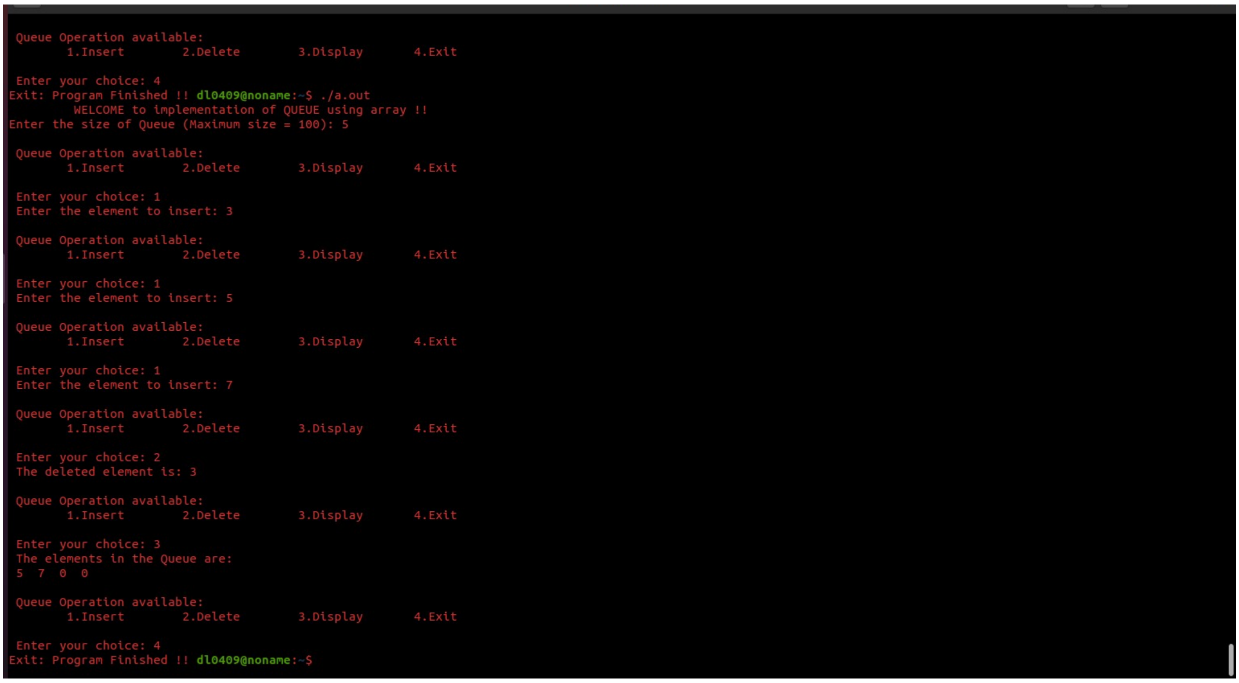


```c
        REAR++;
        Q[REAR] = x;
        if (FRONT == -1)
        {
            FRONT = 0;
        }
    }
}


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()
```

```c
{
    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");
    }
}

```



```
 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: 6

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

 Enter your choice: 1
 Enter the element to insert: 7

 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: 3

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

 Enter your choice: 1
 Queue Overflow !

 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: 4
Exit: Program Finished !! dl0409@noname:~$ 
```



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

 Enter your choice: 4
Exit: Program Finished !! dl0409@noname:~$ ./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: 3

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

 Enter your choice: 1
 Enter the element to insert: 5

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

 Enter your choice: 1
 Enter the element to insert: 7

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

 Enter your choice: 2
 The deleted element is: 3

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

 Enter your choice: 3
 The elements in the Queue are:
 5  7  0  0

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

 Enter your choice: 4
Exit: Program Finished !! dl0409@noname:~$
```