```
#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);
}

// Function to INSERT element
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");
    }
}
```

```
dl401@dl401-HP-ProDesk-400-G7-Microtower-PC:~$ gcc amogh1.c
dl401@dl401-HP-ProDesk-400-G7-Microtower-PC:~$ ./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: 12

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

 Enter your choice: 1
 Enter the element to insert: 13

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

 Enter your choice: 1
 Enter the element to insert: 14

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

 Enter your choice: 1
 Enter the element to insert: 15

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

 Enter your choice: 1
 Enter the element to insert: 16

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

 Enter your choice: 2
 The deleted element is: 12
```

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

 Enter your choice: 3
 The elements in the Queue are:
 13  14  15  16

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

 Enter your choice: 4
dl401@dl401-HP-ProDesk-400-G7-Microtower-PC:~$
```