Roshan Rawat SY-IT 48

```
#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");
}
}
```

```
dl0410@itadmin:~$ gcc ros.c
dl0410@itadmin:~$ ./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: 3

 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:
 3  0  0  0

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

 Enter your choice:
```