# Experiment no 2

Implementation of Queue using Arrays

Code:

```c
#include <stdio.h>
int Q[100], FRONT = -1, REAR = -1, i, n, x, choice;
void insert();
void delete ();
void display();
void main()
{
printf("\tImplementation of QUEUE using array\n");
printf("Enter the size of Queue: ");
scanf("%d", &n);
do
{
printf("\n Select Queue Operation \n");
printf("\t1.Insert \t2.Delete \t3.Display \t4.Exit\t");
printf("\n Enter your choice: ");
scanf("%d", &choice);
switch (choice)
{
case 1:
insert();
break;
case 2:
```

```c
            delete ();

            break;

            case 3:

            display();

            break;

            case 4:

            printf("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++;
```

```c
Q[REAR] = x;
if (FRONT == -1)
{
FRONT = 0;
}
}
}
void delete ()
{
if (FRONT == -1)
{
printf(" Queue Underflow ! \n");
}
else
{
printf(" The deleted element is: %d\t", Q[FRONT]);
if (FRONT == REAR)
FRONT = REAR = -1;
else
FRONT++;
}
}
void display()
{
if (REAR < 0)
{
```

```c
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");
}
}
```

Output:

```
Implementation of QUEUE using array
Enter the size of Queue: 4
Select Queue Operation
    1.Insert    2.Delete    3.Display    4.Exit
 Enter your choice: 1
 Enter the element to insert: 34
 Select Queue Operation
    1.Insert    2.Delete    3.Display    4.Exit
 Enter your choice: 1
 Enter the element to insert: 54
 Select Queue Operation
    1.Insert    2.Delete    3.Display    4.Exit
 Enter your choice: 2
 The deleted element is: 34
 Select Queue Operation
    1.Insert    2.Delete    3.Display    4.Exit
 Enter your choice: 3
 The elements in the Queue are:
54  0  0

 Select Queue Operation
    1.Insert    2.Delete    3.Display    4.Exit
 Enter your choice: 4
 Program Finished !!
```