EXPERIMENT NO.4.1

QUEUE USING ARRAY:

```
#include<iostream>
#define max 3

using namespace std;
class Queue
{       int a[max],front,rear,n;
        public:
void init(){
int i;
rear=-1; front=-1; for(i=0; i<n;
                i++){ a[i]=0;
}
}

        bool isFull(){ return (rear+1)%n ==
                front;
}

        bool isEmpty(){ return
                rear==front;
}

        void enqueue(){ int temp; if(!isFull()){
                cout<<"Enter the Data :";
          cin>>temp;
a[(++rear)%n]=temp; if(front==-1) front=0;
} else{ cout<<"Queue OverFlow"<<endl;
}
} void dequeue(){ int temp; if(!isEmpty()){ cout<<"Value
        :"<<a[(front++)%n]<<endl;
} else{ cout<<"Queue UnderFlow "<<endl;
}
}
void display(){
int i;
cout<<"Value :"<<endl; for(i=front;i<=rear;i++) cout<<
                i <<"---->"<<a[i]<<endl;
```

```
}

          void menu(){
                    rear=-1;
front=0;
       int ch;
cout<<"Enter Size of Array :";
cin>>n;
                    init();               do{
cout<<"******MENU******"<<endl
                              <<"1.Enqueue"<<endl
                   <<"2.Dequeue"<<endl
                        <<"3.Display"<<endl
                           <<"4.Exit"<<endl
                              <<"Enter Your Choice :";
             cin>>ch;

                  switch(ch){
case 1:enqueue();
break;                     case 2:dequeue();
                           break;
          case 3:display();
                            break;
                case 4:
                          break;
          default:cout<<"Wrong Option \n";
                 }
        }while(ch!=4);
          } }q;

int main()
{
q.menu();
}
```

OUTPUT:

```
Enter Size of Array :3
******MENU******
1.Enqueue
2.Dequeue
3.Display
```

4.Exit
Enter Your Choice :1 Enter
the Data :10
******MENU******
1.Enqueue
2.Dequeue
3.Display
4.Exit
Enter Your Choice :1 Enter
the Data :20
******MENU******
1.Enqueue
2.Dequeue
3.Display
4.Exit
Enter Your Choice :1 Enter
the Data :30
******MENU******
1.Enqueue
2.Dequeue
3.Display
4.Exit
Enter Your Choice :3 Value :
0---->10
1---->20
2---->30
******MENU******
1.Enqueue
2.Dequeue
3.Display
4.Exit
Enter Your Choice :2 Value
:10
******MENU******
1.Enqueue
2.Dequeue
3.Display
4.Exit
Enter Your Choice :2
Value :20