Ex.No (13): write a c program to implement Queue operations such as ENQUEUE, DEQUEUE and Display.

Aim: To write a c program to implement Queue operations such as ENQUEUE, DEQUEUE and display.

Algorithm:

* Start.
* Initialize queue, front and rear.
* Implement ENQUEUE, DEQUEUE, and display operations
* Use menu to perform operations.
* Stop.

program:

```
#include <stdio.h>
#define SIZE 5
    int queue[SIZE];
     int front = -1, rear = -1;
     void enqueue(){
         int x;
        if(rear == SIZE -1)
            printf("Queue overflow\n");
        else{
          printf("Enter value to enqueue:");
          scanf("%d", &x);
          if(front == -1) front = 0;
           queue[++rear] = x;
           printf("%d enqueued\n", x);
        }
      }
      void dequeue(){
          if(front == -1 || front > rear)
             printf("Queue underflow\n");
           else
             printf("dequeued = %d\n", queue[front++]);
        }
        void display(){
            if(front == -1 || front > rear)
              printf("Queue is empty\n");
            else{
              printf("Queue: ");
             for(int i = front; i <= rear; i++)
               printf("%d", queue[i]);
```

```
    printf("\n");
  }
}
int main() {
    int choice;
    while(1){
    printf("\n1. Enqueue\n2. Dequeue\n3. Display\
                    n4. Exit\n");
    printf("Enter your choice:");
    scanf("%d", &choice);
    switch(choice){
        case 1: enqueue(); break;
        case 2: dequeue(); break;
        case 3: display(); break;
        case 4: return 0;
        default: printf("Invalid choice\n");
    }
  }
}
```

Output:

```
1. Enqueue 2. Dequeue, 3. Display, 4. Exit
Enter your choice: 1
Enter value to enqueue: 3
 3 enqueued.
```

Result: Thus, the program executed successfully.