

# EXPERIMENT-4

## Program :

```
#include <stdio.h>

int FRONT = 0, REAR=-1;

void Enqueue(int Q[], int value, int MAX){
    if(REAR==MAX-1){
        printf("Queue Overflow!\n");
    }
    else{
        Q[++REAR]=value;
        printf("Enqueued %d!\n", value);
        printf("QUEUE Elements: ");
        for(int i=FRONT; i<= REAR; i++){
            printf("%d\t", Q[i]);
        }
        printf("\n");
    }
}

void Dequeue(int Q[]){
    if(FRONT>REAR){
        printf("Queue Underflow!\n");
    }else{
        printf("Dequeued %d!\n", Q[FRONT]);
        FRONT++;
        printf("QUEUE Elements: ");
        for(int i=FRONT; i<= REAR; i++){
```

```

        printf("%d\t",Q[i]);
    }

    printf("\n");
}

}

int main(){
    int MAX;

    printf("Enter the size of queue: ");
    scanf("%d",&MAX);
    int queue[MAX];
    while(1){
        int choice,value;

        printf("\n-----!Select queue option!-----\n");
        printf("1. Enqueue\t");
        printf("2. Dequeue\t");
        printf("3. Exit\n");
        printf("Choice: ");
        scanf("%d", &choice);
        switch(choice){
            case 1: if(REAR==MAX-1){
                printf("Queue is FULL cannot enqueue.");
                break;
            }else{
                printf("Enter the element to enqueue: ");
                scanf("%d",&value);
                Enqueue(queue,value,MAX);
            }

```

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        break;

        case 2:printf("Dequeuing.....done!\n");

        Dequeue(queue);

        break;

        case 3: return 0;

        default:printf("Invalid choice!");

    }

}

}

```

## Output :

```

cseb2@sjcet-OptiPlex-SFF-7020:~$ cd Alwin
cseb2@sjcet-OptiPlex-SFF-7020:~/Alwin$ gcc queue.c
cseb2@sjcet-OptiPlex-SFF-7020:~/Alwin$ ./a.out
Enter the size of queue: 4

```

```

-----!Select queue option!-----
1. Enqueue      2. Dequeue      3. Exit
Choice: 1
Enter the element to enqueue: 10
Enqueued 10!
QUEUE Elements: 10

```

```

-----!Select queue option!-----
1. Enqueue      2. Dequeue      3. Exit
Choice: 1
Enter the element to enqueue: 32
Enqueued 32!
QUEUE Elements: 10      32

```

```

-----!Select queue option!-----
1. Enqueue      2. Dequeue      3. Exit
Choice: 2
Dequeuing.....done!
Dequeued 10!
QUEUE Elements: 32

```

```

-----!Select queue option!-----
1. Enqueue      2. Dequeue      3. Exit
Choice: 3
cseb2@sjcet-OptiPlex-SFF-7020:~/Alwin$ █

```