Queue

Q. Write a program to insert, delete and display elements of a queue.

```c
#include <stdio.h>
#include <stdlib.h>

int i=0, front=-1, rear=-1, queue[10], item;

int MAX;

#define max 4

void main(){
    while(1){
        int ch;
        printf("Enter 1 to Insert, \n 2 to Delete, \n 3 to Display,
                and \n 4 to Exit");
        scanf("%d", &ch);
        switch(ch){
            case 1: insert();
                break;
            case 2: delete();
                item = delete();
                if(item != -1){
                    printf("The Deleted Element is : %d",item);
                }
                break;
            case 3: display();
                break;
            case 4: exit(0);
        }
    }
}
```

```c
void insert () {
              rear == max-1
    if (rear == max-1) {
        printf(" Queue is full");
        } return;
    }

    if ( front == -1 and rear == -1) {
             queue
        front ++;
        rear ++; printf("Enter Element:"); scanf("%d, &item);
        @queue [rear] = item ;
               return;
    }

    rear ++;
    queue [rear] = item;
}


int delete () {
    if ( front == -1) {
        printf (" Queue is Empty");
        return -1;
    }

    item = queue [rear]; if (front == rear){ front =-1; rear=-1; }
    if (front == rear){rear ; front ; } else { front ++; }
    return (item);
}


void display () {
    if (rear front == -1) {
                    Queue
        printf("Stack is empty");
    }

    else {
        printf("The &Queue is : \n"),
        for (i= front; i< rear; i++ ) {
            printf(" %d \n", stack [i]);
        }
    }
}
```

Output

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 3
Queue is Empty

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 1
Enter Element: 11

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 1
Enter Element: 22

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 1
Enter Element: 33

1. Insert
2. Delete
3. Display

4. Exit

Enter Your Choice: 1
Queue is Full

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 3
The Elements of the Queue are:

11

22

33

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 2
The Deleted item is: 11

1. Insert
2. Delete
3. Display
4. Exit
Enter Your Choice: 2
The Deleted Item is: 22

1. Insert
2. Delete
3. Display
4. Exit

Enter Your Choice: 2

The Deleted item is: 33

1. Insert

2. Delete

3. Display

4. Exit

Enter Your Choice: 2

Queue is Empty

1. Insert

2. Delete

3. Display

4. Exit

Enter Your Choice: 4