Implementation of linear queue

//code

```
#include <stdio.h>
#include <stdlib.h>
#define MAX 10

int queue[MAX];
int front = -1, rear = -1, deleted;

void insert(int );
void del(int* );
void display();

int main() {
   int i, choice, item;

   while(1) {
      printf("\n* 1. INSERT ");
      printf("\n* 2. DELETE ");
      printf("\n* 3. DISPLAY ");
      printf("\n* 4. EXIT ");
      printf("\nEnter your choice :  ");
      scanf("%d", &item);

      switch(item) {
         case 1:
```

```
            printf("\nEnter element to insert :  ");
            scanf("%d", &item);
            insert(item);
            break;
        case 2:
            del(&deleted);
            printf("\nDeleted element is :  %d", deleted);
            break;
        case 3:
            display();
            break;
        case 4:
            printf("****END****");
            exit(1);
        default:
            printf("\nInvalid input");
      }
   }
}

void insert(int item) {
   if (rear == MAX-1) {
      printf("\nQUEUE OVERFLOW");
      return;
   }
   if (front == -1) {
      front++;
```

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

void del(int* deleted) {
    if (front==-1 || front>rear) {
        printf("\nQUEUE UNDERFLOW");
        return;
    }
    *deleted = queue[front];
    front++;
}

void display() {
    int i;
    if (front==-1 || front> rear) {
        printf("\nQUEUE UNDERFLOW");
        return;
    }
    printf("Elements of queue are :  ");
    for (i=front ; i<=rear ; i++) {
        printf("%d, ", queue[i]);
    }
}
```

//output

```
* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  1

Enter element to insert :  12

* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  1

Enter element to insert :  35

* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  1

Enter element to insert :  53

* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  3
Elements of queue are :  12, 35, 53,
* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  2

Deleted element is :  12
```

```
* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  2

Deleted element is :  35
* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  2

Deleted element is :  53
* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  3

QUEUE UNDERFLOW
* 1. INSERT
* 2. DELETE
* 3. DISPLAY
* 4. EXIT
Enter your choice :  4
****END****
Process returned 1 (0x1)   execution time : 33.060 s
Press any key to continue.
```