

IBM19CS044

Deepu.K

Linear queue

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

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

```
#define MAX 5
```

```
int front = 0;
```

```
int rear = -1;
```

```
int queue[MAX];
```

```
Void Enqueue(int);
```

```
int Dequeue();
```

```
Void display();
```

```
int main (int argc, char **argv)
```

```
{
```

```
    int option;
```

```
    int item;
```

```
    do {
```

```
        printf("1. Insert to Queue (Enqueue)");
```

```
        printf("2. delete from the Queue (Dequeue)");
```



```
printf("3. Display the Content");
```

```
printf("4. Exit\n");
```

```
printf("Enter the option:");
```

```
scanf("%d", &option);
```

```
switch(option)
```

```
{
```

```
    case 1: printf("Enter the element: \n");
```

```
            scanf("%d", &item);
```

```
            Enqueue(item);
```

```
            break;
```

```
    case 2: item = Dequeue();
```

```
            if(item == -1)
```

```
                printf("Queue is empty\n");
```

```
            else
```

```
                printf("Removed element from the  
                queue %d", item);
```

```
            break;
```

```
    case 3: display();
```

```
            break;
```

```
    case 4: exit(0);
```

```
}
```

```
} while(option != 4);
```

```
    return 0;
```

```
}
```



```
Void Enque(int ele)
```

```
{
```

```
    if (rear == MAX - 1)
```

```
        printf("Queue is full\n");
```

```
    else
```

```
    {
```

```
        rear++;
```

```
        queue[rear] = ele;
```

```
    }
```

```
}
```

```
int Deque()
```

```
{
```

```
    int item;
```

```
    if (front == -1)
```

```
        return -1;
```

```
    else
```

```
    {
```

```
        item = queue[front];
```

```
        front++;
```

```
        if (front > rear)
```

```
        {
```

```
            front = -1;
```

```
            rear = -1;
```

```
        }
```



```
return item;  
}  
}
```

```
Void display()
```

```
{
```

```
    int i;
```

```
    if (front == -1)
```

```
        printf("Queue is empty\n");
```

```
    else
```

```
    {
```

```
        printf("\n Queue contents:");
```

```
        for (i = front; i < rear; i++)
```

```
            printf("%d", queue[i]);
```

```
    }
```

```
}
```