

Assignment 9: Queue using Linked List

Name: Aarya Gawade

UEC No.: UEC2023122

Batch: A2

Code:

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

struct queue
{
    int number;
    struct queue *next;
} *p, *q, *front, *rear;

void enqueue()
{
    p = (struct queue *)malloc(sizeof(struct queue));
    printf("Enter data to be pushed: ");
    scanf("%d", &p->number);
    p->next = NULL;

    if (rear == NULL)
    {
        rear = p;
        front = p;
    }
    else
    {
        rear->next = p;
        rear = rear->next;
    }
}
```

```
void dequeue()
{
    q = front;
    if (q == NULL)
    {
        printf("Empty Queue\n");
    }
    else
    {
        printf("Deleted element: %d\n", front->number);
        front = front->next;
        q->next = NULL;
        free(q);
    }
}
```

```
void display()
{
    q = front;
    if (q == NULL)
    {
        printf("Empty Queue");
    }

    else
    {
        while (q != NULL)
        {
            printf("%d", q->number);
            q = q->next;
        }
        printf("\n");
    }
}
```

```
int main()
{
    int ch;
    rear = NULL;
    front = NULL;
```

```

do
{
    printf("Enter option: 1. Enqueue, 2. Dequeue, 3. Display\n");
    scanf("%d", &ch);

    switch (ch)
    {

        case 1: // enqueue
            enqueue();
            display();
            break;

        case 2: // dequeue
            dequeue();
            display();
            break;

        case 3: // display
            display();
            break;

        default:
            exit(0);
    }

} while (ch != 4);

return 0;
}

```

Output:

```

D:\OneDrive\Dokumen\Clg_work>cd "d:\OneDrive\Dokumen\Clg_work\Assignments\" && gcc
9queue.c -o 9queue && "d:\OneDrive\Dokumen\Clg_work\Assignments\"9queue
Enter option: 1. Enqueue, 2. Dequeue, 3. Display
1
Enter data to be pushed: 1
1

```

Enter option: 1. Enqueue, 2. Dequeue, 3. Display

1

Enter data to be pushed: 2

12

Enter option: 1. Enqueue, 2. Dequeue, 3. Display

1

Enter data to be pushed: 3

123

Enter option: 1. Enqueue, 2. Dequeue, 3. Display

2

Deleted element: 1

23