

Queue Implementation of Linked List:-

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Source Code:-

```
#include<stdio.h>
#include<stdlib.h>
#include <conio.h>
typedef struct node
{
    int data;
    struct node *next;
}node;

typedef struct
{
    node *start;
}LL;

void enqueue(LL *ll)
{
    node *p,*q;
    int i;
    printf("Enter the No to be enqueued\n");
    scanf("%d",&i);
    p=(node *)malloc(sizeof(node));
    p->data=i;
    p->next=NULL;
    if(ll->start==NULL)
    {
        ll->start=p;
    }
    else
    {
        q=ll->start;
        while(q->next!=NULL)
        {
            q=q->next;
        }
        q->next=p;
    }
    printf("%d has been successfully enqueued\n",i);
}

void display(LL *ll)
{
    node *p;
    int i=0;
    if(ll->start==NULL)
```

```

    {
        printf("Queue is empty\n");
        return;
    }
    p=ll->start;
    printf("data index\n");
    while(p!=NULL)
    {
        printf("%d  %d\n",p->data,i++);
        p=p->next;
    }
    return;
}

```

```

void dequeue(LL *ll)
{
    node *p;
    if( ll->start == NULL)
    {
        printf("Queue is empty");
        return;
    }
    p = ll->start;
    if(ll->start == p)
    {
        ll->start = p->next;
    }
    printf("%d has been dequeued",p->data);
    free(p);
}

```

```

int main()
{
    LL llq;
    llq.start=NULL;
    int c;
    while(1)
    {
        printf("\nEnter your choice :\n1.Enqueue a Nunber\n2.Display queue \n3.Dequeue Number\n4.ClearScreen\n5.Exit\n");
        scanf("%d",&c);
        switch(c)
        {
            case 1 : {enqueue(&llq); break;}
            case 2 : {display(&llq);break;}
            case 3 : {dequeue(&llq); break;}
            case 4 : {clrscr();break;}
            case 5 : {printf("Thank You");exit(0);}
            default: {printf("Enter a valid Option\n");break;}
        }
    }
    return 0;
}

```

Output:-

Enter your choice :

- 1.Enqueue a Nunber
- 2.Display queue
- 3.Dequeue Number
- 4.ClearScreen
- 5.Exit

1

Enter the No to be enqueued

50

50 has been successfully enqueued

Enter your choice :

- 1.Enqueue a Nunber
- 2.Display queue
- 3.Dequeue Number
- 4.ClearScreen
- 5.Exit

1

Enter the No to be enqueued

60

60 has been successfully enqueued

Enter your choice :

- 1.Enqueue a Nunber
- 2.Display queue
- 3.Dequeue Number
- 4.ClearScreen
- 5.Exit

2

data index

50 0

60 1

Enter your choice :

- 1.Enqueue a Nunber
- 2.Display queue
- 3.Dequeue Number
- 4.ClearScreen
- 5.Exit

3

50 has been dequeued

Enter your choice :

- 1.Enqueue a Nunber
- 2.Display queue
- 3.Dequeue Number
- 4.ClearScreen
- 5.Exit

2

data index

60 0

Enter your choice :

1.Enqueue a Nunber

2.Display queue

3.Dequeue Number

4.ClearScreen

5.Exit

5

Thank You