

# Queue Using Linked List

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

```
typedef struct node {
    int info;
    struct node *next;
}nodetype;
```

```
void push(nodetype **front, nodetype **rear, int val){
    nodetype *p = (nodetype *)malloc(sizeof(nodetype));
    if( p == NULL){
        printf("\n No memory allocated.");
    }else{
        p->info = val;
        p->next = *front;
        *front = p;
        if(*rear == NULL){
            *rear = p;
        }
    }
}
```

```
void pop(nodetype **front,nodetype **rear){
    if(*rear == NULL){
        printf("No element to pop.");
    }else if(*rear == *front){
        nodetype *temp = *front;
        printf("\n%d popped.", temp->info);
        *front = NULL;
        *rear = NULL;
        free(temp);
    }else{
        nodetype *temp = *front;
        while(temp->next != *rear){
            temp = temp->next;
        }
        nodetype *popped = temp->next;
        temp->next = NULL;
        printf("\n%d popped.\n", popped->info);
        free(popped);
        *rear = temp;
    }
}
```

# Queue Using Linked List

```
void display(nodetype *front){

    if(front == NULL){
        printf("No elements to display.\n");
        return;
    }
    printf("\n Elements in stack : ");
    while(front != NULL){
        printf(" %d ",front->info);
        front = front->next;
    }
}

void main(){

    nodetype *front = NULL,*rear =NULL;
    int val,ch,i = 1;
    while(i){
        printf("\nEnter your choice :\n1.PUSH \n2.POP \n3.DISPLAY \n4.EXIT\n");
        scanf("%d",&ch);
        switch(ch){
            case 1:
                printf("Enter the number to insert in new node :");
                scanf("%d",&val);
                push(&front,&rear,val);
                break;
            case 2:
                pop(&front,&rear);
                break;
            case 3:
                display(front);
                break;
            default : i=0;
        }
    }
}
```

# Queue Using Linked List

## OUTPUT :

Enter your choice :

- 1.PUSH
- 2.POP
- 3.DISPLAY
- 4.EXIT
- 1

Enter the number to insert in new node :10

Enter your choice :

- 1.PUSH
- 2.POP
- 3.DISPLAY
- 4.EXIT
- 1

Enter the number to insert in new node :20

Enter your choice :

- 1.PUSH
- 2.POP
- 3.DISPLAY
- 4.EXIT
- 1

Enter the number to insert in new node :30

Enter your choice :

- 1.PUSH
- 2.POP
- 3.DISPLAY
- 4.EXIT
- 3

Elements in stack : 30 20 10

Enter your choice :

- 1.PUSH
- 2.POP
- 3.DISPLAY
- 4.EXIT
- 2

10 popped.

Enter your choice :

## Queue Using Linked List

1.PUSH  
2.POP  
3.DISPLAY  
4.EXIT  
2

20 popped.

Enter your choice :

1.PUSH  
2.POP  
3.DISPLAY  
4.EXIT  
3

Elements in stack : 30

Enter your choice :

1.PUSH  
2.POP  
3.DISPLAY  
4.EXIT  
4