December 05, 2021

IMPLEMENTATION OF QUEUE USING STACK

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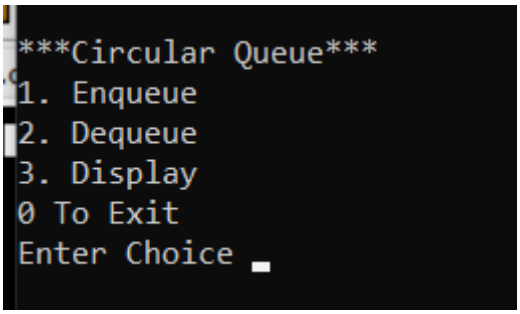
```c
/*
implemaintaction Of Queue using Stack
*/
#include<stdio.h>
#define N 5

int stack1[N],stack2[N];
int top1=-1,top2=-1,count=0;

void Enqueue(int x);
void Dequeue();
void Display();
void push1(int data);
void push2(int data);
int pop1();
int pop2();

int main(){
        int choice,x;
                do{
                printf("\n***Circular Queue***\n");
                printf("1. Enqueue\n");
                printf("2. Dequeue\n");
                printf("3. Display\n");
                printf("0 To Exit\n");
                printf("Enter Choice ");
                scanf("%d",&choice);
                switch(choice){
```

```
                        case 1:
                                printf("Enter x ");
                                scanf("%d",&x);
                                Enqueue(x);
                                break;
                        case 2:
                                Dequeue();
                                break;
                        case 3:
                                Display();
                                break;
                        default:
                                printf("\n!Wrong Choice!\n");
                }
        }while(choice!=0);
        return 0;
}

void Enqueue(int x){
        push1(x);
        count++;
}
void Dequeue(){
        int i,a,b;
        if(top1==-1 && top2==-1){
                printf("\nQueue Is Empty");
        }
        else{
                for(i=0;i<count;i++){
                        a=pop1();
                        push2(a);
                }
                b=pop2();
                printf("Dequeued Element is %d",b);
                count--;
                for(i=0;i<count;i++){
                        a=pop2();
                        push1(a);
                }
        }
}
void push1(int data){
        if(top1==N-1){
```

```
72.                 printf("\nOverflow\n");
73.         }
74.         else{
75.                 top1++;
76.                 stack1[top1]=data;
77.         }
78. }
79. void push2(int data){
80.         if(top2==N-1){
81.                 printf("\nOverflow\n");
82.         }
83.         else{
84.                 top2++;
85.                 stack2[top2]=data;
86.                 count++;
87.         }
88. }
89. int pop1(){
90.         return stack1[top1--];
91. }
92. int pop2(){
93.         return stack2[top2--];
94. }
95. void Display(){
96.         int i;
97.         for(i=0;i<=top1;i++){
98.                 printf("%d ",stack1[i]);
99.         }
100. }
```

OUTPUT



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