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//Created By Ritwik Chandra Pandey on 2nd April 2021
//183215
//Double Ended Queue(Array)



#include<stdio.h>
#include<stdlib.h>
#define MAX 20
int deQueue [MAX];
int front=-1, rear =-1;


void push(int x) {
if(front==-1||front==0) {
printf("Double ended queue is overflow.\n");
return;
}else front=front-1;
deQueue[front]=x;
printf("Successfully inserted at front side.\n");
}




void pop() {
if(front==-1){
printf("Dequeue is underflow.\n");
return;
}else{
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printf("Deleted element from front side = %d\n", deQueue[front]);
}
if(front==rear){
front=-1;
rear=-1;
}else{
front=front+1;
}
}
```

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void eject(){
if (rear==-1){
printf("Double ended queue is underflow.\n");}
else {
printf("Deleted element from rear side = %d\n", deQueue[rear]);
if (front==rear) {front = rear -1;}
else {rear=rear-1;}
}
}
void display() {
int i;
if(front==-1 && rear==-1) {
printf("Double ended queue is empty.\n");
return;
}else{
printf("Elements in double ended queue : ");
 for(i = front; i <= rear; i++) {
printf("%d ", deQueue[i]);}
```

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}
printf("\n"); }

void inject(int x) {
if (rear==MAX-1) {
printf("Double ended queue is overflow.\n");
}else{
rear++;
deQueue[rear] = x;
if (front == -1) {
front = 0;
}printf("Successfully inserted at rear side.\n");
}
}

void main() {
int x, op;
while(1)
{
printf("1.Inject 2.Eject 3.Push 4.Pop 5.Display 6.Exit\n");
printf("Enter your option : ");
scanf("%d", &op);
switch(op) {
case 1: printf("Enter an element ");
scanf("%d", &x);
inject(x);
break;
case 2: eject();
break;
case 3: printf("Enter an element : ");
scanf("%d", &x);
```

```
push(x);
break;
case 4: pop();
break;
case 5: display();
break;
case 6: exit(0);
}
}
}
```