YASH GUPTA

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IMPLEMENTATION OF CIRCULAR QUEUE

INPUT

```
#include <stdio.h>
int queue[20],front=-1,rear=-1,size=4,x;
void insert(){
    if((rear==(size-1)&&(front==0))||(front==rear+1)){
        printf("queue is full\n");
        return;
    }
    else{
        if(front==-1 && rear==-1){
            front++;
            rear++;
            printf("enter the value to insert\n");
            scanf("%d",&x);
            queue[rear]=x;
            return;
        }
        else{
            rear=(rear+1)%size;
            printf("enter the value to insert\n");
```

```
                scanf("%d",&x);
                queue[rear]=x;
                return;
            }
        }
}
void delete(){
        if((front==-1 && rear==-1)||(front==rear)){
            printf("empty queue\n");
            return;
        }
        else{
            x=queue[front];
            front=(front+1)%size;
            printf("deleted: %d\n",x);
            return;
        }
}
void display(){
        if((front==-1 && rear==-1)||(front==rear)){
            printf("empty queue\n");
            return;
        }
        else{
            printf("printing queue elements\n");
```

```
            if(front<rear){
                for(int i=front;i<=rear;i++){
                    printf("%d\n",queue[i]);
                }
            }
            else{
                for(int i=0;i<=rear;i++){
                    printf("%d\n",queue[i]);
                }
                for(int i=front;i<size;i++){
                    printf("%d\n",queue[i]);
                }
            }
        }
}
int main(){
        printf("circular queue implementation\n");
        printf("1.insert\n2.delete\n3.display\n4.exit\n");
        int choice;
        do{
            printf("enter choice\n");
            scanf("%d",&choice);
            switch(choice){
                case(1):
                    insert();
```

```
                break;
            case(2):
                delete();
                break;
            case(3):
                display();
                break;
            case(4):
                exit(0);
            default:
                printf("enter correct choice\n");
                break;
        }
    }while(choice!=4);
    return 0;
}
```

OUTPUT

```
linear queue implementation
1.insert
2.delete
3.display
4.exit
enter choice
1
enter the value to insert
1
enter choice
1
enter the value to insert
2
enter choice
1
enter the value to insert
3
enter choice
1
enter the value to insert
4
enter choice
2
deleted: 1
enter choice
2
deleted: 2
enter choice
3
printing queue elements
3
4
enter choice
4

Process returned 0 (0x0)   execution time : 22.177 s
Press any key to continue.
```