#include<stdio.h>

#define size 4

int ch,cq[20],item,i,front=-1,rear=1;

void insert();

int delete();

void display();

void main()

{

    while(1)

    {

    printf("\n1.Insert\n2.Delete\n3.Display\n4.Exit\n");

    printf("Enter your choice:");

    scanf("%d",&ch);

    switch(ch)

    {

        case 1:insert();

                break;

        case 2:item=delete();

                if(item!=-1)

                {

                    printf("Deleted element is %d",item);

                }

                break;

        case 3:display();

                break;

        case 4:exit(0);

                break;

    }

    }

}

void insert()

{

    if(front==(rear+1)%size)

    {

        printf("\nCircular queue is full");

        return;

    }

    if(front==-1)

    {

        front=0;

        rear=0;

    }

    else

    {

        rear=(rear+1)%size;

    }

    printf("Enter item to be inserted:");

    scanf("%d",&item);

    cq[rear]=item;

    return;

}

int delete()

{

    if(front==-1)

    {

        printf("Circular queue is empty");

        return(-1);

    }

    item=cq[front];

    if(front==rear)

    {

        front=-1;

        rear=-1;

    }

    else

    {

        front=(front+1)%size;

    }

    return(item);

}

void display()

{

    if(front==-1)

    {

        printf("Circular queue is empty");

        return;

    }

    printf("Circular queue contains:\n");

    if(front<=rear)

    {

        for(i=front;i<=rear;i++)

        {

            printf("%d\t",cq[i]);

        }

    }

    else

    {

        for(i=front;i<=size-1;i++)

        {

            printf("%d\t",cq[i]);

        }

        for(i=0;i<=rear;i++)

        {

            printf("%d\t",cq[i]);

        }

    }

    return;

}

Output:

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:1

Enter item to be inserted:10

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:1

Enter item to be inserted:20

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:1

Enter item to be inserted:30

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:1

Enter item to be inserted:23

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:1

Circular queue is full

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:2

Deleted element is 10

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:2

Deleted element is 20

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:2

Deleted element is 30

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:2

Deleted element is 23

1.Insert

2.Delete

3.Display

4.Exit

Enter your choice:2

Circular queue is empty