#include<stdio.h>

#include<stdlib.h>

#define size 3

int queue[size];

int front=-1 , rear=-1;

void pushdq(); //push though front friend

void popdq();

void inject();

void eject();

void display()

{

int i;

if((front==-1)&&(rear==-1))

{

printf("DEQUEUE IS EMPTY\n");

}

else

{

printf("DEQUEUE IS : ");

i=front;

do

{

printf("%d \n ",queue[i]);

i=(i+1)%size;

} while(i!=(rear+1)%size);

printf("\n");

}

}

int main()

{

int ch,i;

printf("MENU\n1.Pushdq\n2.Popdq\n3.Inject\n4.Eject\n5.Exit");

do

{

printf("\nENTER THE CHOICE : ");

scanf("%d",&ch);

switch(ch)

{

case 1 : pushdq();

break;

case 2 : popdq();

break;

case 3 : inject();

break;

case 4 : eject();

break;

case 5 : display ();

break;

case 6: exit(0);

}

}

while(ch!=6);

}

void pushdq()

{

int temp,item;

printf("\nENTER THE ELEMENT");

scanf("%d",&item);

if((front==-1)&&(rear==-1))

{

front++;

rear++;

queue[front]=item;

}

else

{

if(front==0)

{

temp=size-1;

}

else

{

temp=front-1;

}

if(temp==rear)

{

printf("\nQUEUE IS FULL");

}

else

{

front=temp;

queue[front]=item;

}

}

}

void popdq()

{

int item;

if ((front==-1)&&(rear==-1))

{

printf("\nQUEUE IS EMPTY");

}

else

{

item=queue[front];

printf("DELETED ELEMENT IS :%d",item);

if(front==rear)

{

front=-1;

rear=-1;

}

else

{

front=(front+1)%size;

}

}

}

void inject()

{

int item;

if(front==(rear+1)%size)

{

printf("\nQUEUE IS FULL");

}

else

{

printf("\nENTER THE ELEMENT");

scanf("%d",&item);

if((front==-1)&&(rear==-1))

{

front=0;

rear=0;

}

else

{

rear=(rear+1)%size;

}

queue[rear]=item;

}

}

void eject()

{

int item;

if((front==-1)&&(rear==-1))

{

printf("\nQUEUE IS EMPTY");

}

else

{

if(front==rear)

{

item=queue[rear];

printf("DELETED ELEMENT IS :%d",item);

front=-1;

rear=-1;

}

else

{

item=queue[rear];

printf("DELETED ELEMENT IS :%d",item);

if(rear==0)

{

rear=size-1;

}

else

{

rear=rear-1;

}

}

}

}