DOUBLE ENDED QUEUE

#include<stdio.h>

#include<stdlib.h>

#define qsize 5

int f=0,r=-1,ch;

int item,q[10];

int isfull()

{

return(r==qsize-1)?1:0;

}

int isempty()

{

return(f>r)?1:0;

}

void insert\_rear()

{

if(isfull())

{

printf("queue overflow\n");

return;

}

r=r+1;

q[r]=item;

}

void delete\_front()

{

if(isempty())

{

printf("queue empty\n");

return;

}

printf("item deleted is %d\n",q[(f)++]);

if(f>r)

{

f=0;

r=-1;

}

}

void insert\_front()

{

if(f!=0)

{

f=f-1;

q[f]=item;

return;

}

else if((f==0)&&(r==-1))

{

q[++(r)]=item;

return;

}

else

printf("insertion not possible\n");

}

void delete\_rear()

{

if(isempty())

{

printf("queue is empty\n");

return;

}

printf("item deleted is %d\n",q[(r)--]);

if(f>r)

{

f=0;

r=-1;

}

}

void display()

{

int i;

if(isempty())

{

printf("queue empty\n");

return;

}

for(i=f;i<=r;i++)

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

}

int main()

{

for(;;)

{

printf("1.insert\_rear\n2.insert\_front\n3.delete\_rear\n4.delete\_front\n5.display\n6.exit\n");

printf("enter choice\n");

scanf("%d",&ch);

switch(ch)

{

case 1:printf("enter the item\n");

scanf("%d",&item);

insert\_rear();

break;

case 2:printf("enter the item\n");

scanf("%d",&item);

insert\_front();

break;

case 3:delete\_rear();

break;

case 4:delete\_front();

break;

case 5:display();

break;

default:exit(0);

}

}

}

