#include<iostream>

using namespace std;

class stack\_que

{

private:

int arr[20];

int f,r,t;

public:

stack\_que()

{

//strcpy(arr,'\0');

t=9;

r=-1;

f=-1;

}

///////////////////////////////////////////////

void push\_stack(int v)

{

if(t==20)

cout<<"\nstack is full : ";

else

arr[++t]=v;

cout<<"\nvalue entered in a stack is : "<<v<<endl;

}

/////////////////////////////////////////////////

int pop\_stack()

{

if(t==9)

cout<<"\nstack is empty : ";

else

return arr[t--];

}

void display\_stack()

{

for(int i=10;i<=t;i++)

cout<<arr[i]<<"\t";

}

////////////////////////////////////////////////////

bool full\_que()

{

if(r==10)

return true;

else

return false;

}

bool empty\_que()

{

if(r==-1)

return true;

else

return false;

}

///////////////////////////////////////////////////////

void enque\_que(int v)

{

if(full\_que())

cout<<"\nThe enque not possible because que is full !";

else

arr[++r]=v;

cout<<"\nThe value is entered in the que : "<<v<<endl;

}

///////////////////////////////////////////////////

int deque\_que()

{

if(empty\_que())

cout<<"\nThe deque not possible : ";

else

{

int z;

z=arr[r--]; //important working of deque

return z;

}

/\*for(int i=0;i<r;i++)

{

arr[i]=arr[i+1];

}\*/

}

//////////////////////////////////////////////

void display\_que()

{

for(int j=0;j<=r;j++)

cout<<arr[j]<<"\t";

}

};

/////////////////////////////////////////////////////////////////

int main()

{

stack\_que c,s;

int d;

char op;

do

{

cout<<"\nFor stack operation : (s)\n"

"For Que opeartion : (q)\n"

"Enter your choice : ";

cin>>op;

switch(op)

{

case 's':

cout<<"\n\t\t\tstack part : \n";

cout<<"\npush function operate in a stack : \n";

s.push\_stack(1);

s.push\_stack(2);

s.push\_stack(3);

s.push\_stack(4);

s.push\_stack(5);

s.push\_stack(6);

s.push\_stack(7);

s.push\_stack(8);

s.push\_stack(9);

s.push\_stack(11);

cout<<"\nNow pop function from stack : \n";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<"\ndisplay a Stack after some pop : \n";

s.display\_stack();

cout<<"\nNow again pop : \n";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

cout<<s.pop\_stack()<<"\t";

break;

//------------------------------------------------

case 'q':

cout<<"\n\t\t\tQueue part : \n";

c.enque\_que(10);

c.enque\_que(20);

c.enque\_que(30);

c.enque\_que(40);

c.enque\_que(50);

c.enque\_que(60);

c.enque\_que(70);

c.enque\_que(80);

c.enque\_que(90);

c.enque\_que(100);

cout<<"\nNow deque from que : "<<endl;

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<"\ndisplay Queue after some deque : "<<endl;

c.display\_que();

cout<<"\nagain deque : \n";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

cout<<c.deque\_que()<<"\t";

break;

}

cout<<"\n\n\ndo u again use stack or Queue \n"

"Enter your option (y/n) : ";

cin>>op;

//----------------------------------------------------

}

while(op=='y');

system("pause");

return 0;

}