#include<iostream>

#include<stdlib.h>

#include<cmath>

using namespace std;

class Dot

{

private:

float x,y;

public:

Dot(){} //虚拟构造函数

Dot(Dot &d){x=d.x;y=d.y;}

Dot(float a, float b){x=a;y=b;}

void setX(float);

void setY(float);

float getX();

float getY();

void Show(){cout<<"x="<<x<<" y="<<y<<endl;}

};

inline void Dot::setY(float a){x=a;}

inline void Dot::setX(float b){y=b;}

inline float Dot::getY(){return x;}

inline float Dot::getX(){return y;}

class Line:public Dot{

Dot d1,d2;

float length;

public:

Line(float a1,float a2,float a3,float a4):d1(a1,a2),d2(a3,a4)

{

Dot::setX(0.5\*d1.getX()+0.5\*d2.getX());

Dot::setY(0.5\*d1.getY()+0.5\*d2.getY());

length = sqrt((d1.getX()-d2.getX())\*(d1.getX()-d2.getX()) + \

(d1.getY()-d2.getY())\*(d1.getY()-d2.getY()) );

}

Line(Dot dot1,Dot dot2):d1(dot1),d2(dot2)//重载

{

Dot::setX(0.5\*d1.getX()+0.5\*d2.getX());

Dot::setY(0.5\*d1.getY()+0.5\*d2.getY());

length = sqrt(pow(d1.getX()-d2.getX(),2) + pow(d1.getY()-d2.getY(),2) );

}

void Showl(){cout<<"Dot1: ";d1.Show();cout<<"Dot2:";d2.Show();

cout<<"Length: "<<length<<endl;

cout<<"Centre pot: "<<getX()<<" "<<getY()<<endl;

}

};

int main(void)

{

float a,b;

cout<<"Input Dot1: \n";

cin>>a>>b;

Dot dot1(a,b);

cout<<"Input Dot2:\n"; cin>>a>>b;

Dot dot2(a,b);

Line line1(dot1.getX(),dot1.getY(),dot2.getX(),dot2.getY());

line1.Showl();

Line line2(dot1,dot2);

line2.Showl();

system("pause");

return 0;

}