import java.awt.geom.Point2D;

import java.lang.Math;

public class SegmentIntersection {

double x1, y1, x2, y2, x3, y3, x4, y4;

Point2D point1 = new Point2D.Double(x1, y1);;

Point2D point2 = new Point2D.Double(x2, y2);

Point2D point3 = new Point2D.Double(x3, y3);

Point2D point4 = new Point2D.Double(x4, y4);

double kA = (y2 - y1)/(x2 - x1);

double kB = (y4 - y3)/(x4 - x3);

double bA = (x1 \* y2 - x2 \* y1)/(x1 - x2);

double bB = (x3 \* y4 - x4 \* y3)/(x3 - x4);

public double pointX = (bA - bB)/(kA - kB);

public double pointY = (bA \* kB - kA \* bB)/(kB - kA);

Point2D intersectionPoint = new Point2D.Double(pointX, pointY);

public void calculateLength() {

double x1 = 1, y1 = 1, x2 = 6, y2 = 3, x3 = 2, y3 = 4, x4 = 5, y4 = 2;

double lengthSegmentA = Math.sqrt(Math.pow((x1 - x2),2) + Math.pow((y1 - y2), 2));

double lengthSegmentB = Math.sqrt(Math.pow((x3 - x4),2) + Math.pow((y3 - y4), 2));

System.out.println("The length of Segment A is: " + lengthSegmentA + ".");

System.out.println("The length of Segment B is: " + lengthSegmentB + ".");

}

/\*private double getMax(double x1, double x2) {

return x1 > x2? x1:x2;

}

private double getMax(double y1, double y2) {

return y1 > y2? y1:y2;

}

private double getMax(double x3, double x4) {

return x3 > x4? x3:x4;

}

private double getMax(double y3, double y4) {

return y3 > y4? y3:y4;

}\*/

public void intersection(){

double yA\_MaxX, yA\_MinX, yA\_MaxY, yA\_MinY, yB\_MaxX, yB\_MinX, yB\_MaxY, yB\_MinY;

if(x1>x2){

yA\_MaxX = x1; yA\_MinX = x2;

}else{

yA\_MaxX = x2; yA\_MinX = x1;

}

if(y1>y2){

yA\_MaxY = y1; yA\_MinY = y2;

}else{

yA\_MaxY = y2; yA\_MinY = y1;

}

if(x3>x4){

yB\_MaxX = x3; yB\_MinX = x4;

}else{

yB\_MaxX = x4; yB\_MinX = x3;

}

if(y3>y4){

yB\_MaxY = y3; yB\_MinY = y4;

}else{

yB\_MaxY = y4; yB\_MinY = y3;

}

if (yA\_MaxX<yB\_MinX && yA\_MinX>yB\_MaxX && yA\_MaxY<yB\_MinY && yA\_MinY>yB\_MaxY){

System.out.print("There is no intersection between Segment A and Segment B. ");

}else if (x1 == x2 || x3 == x4){

kA = Integer.MAX\_VALUE; kB = Integer.MAX\_VALUE;

}if (y1 == y2 || y3 == y4){

kA = 0; kB = 0;

}else {

pointX = (bA - bB)/(kA - kB);

pointY = (bA \* kB - kA \* bB)/(kB - kA);

System.out.println("The intersection of these two segments is: (" + pointX + ", " + pointY + ")");

}

}

public static void main(String[] args) {

SegmentIntersection result = new SegmentIntersection();

result.calculateLength();

}

}