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using System;

namespace PacMan {

public class Vector2 {

public static Vector2 Zero => new Vector2(0, 0);

public static Vector2 Up => new Vector2(0, -1);

public static Vector2 Down => new Vector2(0, 1);

public static Vector2 Left => new Vector2(-1, 0);

public static Vector2 Right => new Vector2(1, 0);

public int X;

public int Y;

public Vector2(int x, int y) {

X = x;

Y = y;

}

public static double Distance(Vector2 a, Vector2 b) {

double x = (double)b.X - a.X;

double y = (double)b.Y - a.Y;

return Math.Sqrt(x + y);

}

public override string ToString() {

return "(" + X + "," + Y + ")";

}

public static Vector2 operator \*(Vector2 a, int b) {

return new Vector2(a.X \* b, a.Y \* b);

}

public static Vector2 operator +(Vector2 a, Vector2 b) {

return new Vector2(a.X + b.X, a.Y + b.Y);

}

public static bool operator ==(Vector2 a, Vector2 b) {

return a.X == b.X && a.Y == b.Y;

}

public static bool operator !=(Vector2 a, Vector2 b) {

return a.X != b.X || a.Y != b.Y;

}

}

}