

```

using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Corp_3D
{
    public partial class Form1 : Form
    {
        int u1, v1, u2, v2;           // ViewPort
        double a, b, c, d;           // Window
        int Tip; double Raza, Alfa;  // Pr. Par.=1, Perp.=2
        class muchie { public int st, dr; } // Pot fi si caracteristici: Culoare, TipLinie(...)
        class varf
        {
            public double x, y, z;
            public varf(int X, int Y, int Z) { x = X; y = Y; z = Z; }
        }

        int u(double x) { return (int)((x - a) / (b - a) * (u2 - u1) + u1); }
        int v(double y) { return (int)((y - d) / (c - d) * (v2 - v1) + v1); }

        void ViewPort(int x1, int y1, int x2, int y2) { u1 = x1; v1 = y1; u2 = x2; v2 = y2; }
        void Window(double x1, double y1, double x2, double y2) { a = x1; d = y1; b = x2; c = y2; }
        void DefPr(double r, double a) { Raza = r; Alfa = a; } // r=1; a=0.8; // = Pi/4
        double PrX(double x, double z) { return x + Raza * z * Math.Cos(Alfa); }
        double PrY(double y, double z) { return y + Raza * z * Math.Sin(Alfa); }
        double Px(varf P) { return PrX(P.x, P.z); }
        double Py(varf P) { return PrY(P.y, P.z); }

        public Form1()
        {
            InitializeComponent();
        }
    }
}

```

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private void button1_Click(object sender, EventArgs e) // Des. Corp.
{
    ViewPort(50, 50, 650, 500);
    double Pi = 3.1416; DefPr(1, 3.14 / 4);
    System.Drawing.Pen myPen;
    myPen = new System.Drawing.Pen(System.Drawing.Color.Chocolate);
    System.Drawing.Graphics formGraphics = this.CreateGraphics();
    openFileDialog1.ShowDialog();
    System.IO.StreamReader Fc = new System.IO.StreamReader(openFileDialog1.FileName); // Cit. Corp.
    String Line = Fc.ReadLine();
    String[] Split = Line.Split(new Char[] { ',', ' ', '\t' });
    int n = Convert.ToInt32(Split[0]); varf[] V = new varf[n + 1];
    for (int i = 1; i <= n; i++) // Cit. Vf.
    {
        Line = Fc.ReadLine();
        Split = Line.Split(new Char[] { ',', ' ', '\t' });
        int X = Convert.ToInt32(Split[0]);
        int Z = Convert.ToInt32(Split[1]);
        int Y = Convert.ToInt32(Split[2]) - 100; // y <---> z
        V[i] = new varf(X, Y, Z); // V V V !!
    }
    Line = Fc.ReadLine();
    Split = Line.Split(new Char[] { ',', ' ', '\t' });
    int m = Convert.ToInt32(Split[0]); muchie[] M = new muchie[m + 1];
    for (int j = 1; j <= m; j++) // Cit. Muchii
    {
        Line = Fc.ReadLine();
        Split = Line.Split(new Char[] { ',', ' ', '\t' });
        M[j] = new muchie();
        M[j].st = Convert.ToInt32(Split[0]);
        M[j].dr = Convert.ToInt32(Split[1]);
    }
}

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Line = Fc.ReadLine(); // Cit. Car. Pr. Tip, r,  $\alpha$ 
Split = Line.Split(new Char[] { ',', '}', '\t' });
Tip = Convert.ToInt32(Split[0]);
Raza = Convert.ToDouble(Split[1]);
Alfa = Convert.ToDouble(Split[2]);

Fc.Close();

DefPr(Raza, Alfa); // 1=Par( $r, \alpha$ ), 2=Persp.( $d, q$ );
a = b = Px(V[1]); c = d = Py(V[1]);
for (int i = 2; i <= n; i++)
{
    double px = Px(V[i]);
    if (px < a) a = px; else if (px > b) b = px;
    double py = Py(V[i]);
    if (py < c) c = py; else if (py > d) d = py;
}
Window(a, d, b, c); // Fereasta Reală

for (int j = 1; j <= m; j++) // Desenare muchii
    formGraphics.DrawLine(myPen, u(Px(V[M[j].st])), v(Py(V[M[j].st])),
                           u(Px(V[M[j].dr])), v(Py(V[M[j].dr])));

myPen.Dispose();
formGraphics.Dispose();
}
}
}

```

Cub.Txt			Piramida.Txt		
Listă Vârfuri	Listă Muchii	Proiecție	Listă Vârfuri	Listă Muchii	Proiecție
8	12	1 1.0 0.4	6	11	1 3.5 1.5
000	121		-50 -50 -400	12	
100	231		-50 50 -400	2334	
110	341		50 50 -400	41	
010	411		50 -50 -400	15	
001	562		00 900	25	
101	672		00 -400	35	
111	782			45	
011	852			13	
	153			24	
	263			56	
	373				
	483				

