Challenge Task 3

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The goal of this task was to draw the whole body and dynamically show the angle between elbow and torso.

I took the angle between two lines: spine and hip; and elbow and shoulder

Then subtract the two angles to find the difference and finally showing in a dynamically moving box. Here is a snippet of code to show you how I did it:

private void DrawSkeleton(Skeleton skeleton)

{

System.Windows.Point joint1 = this.ScalePosition(skeleton.Joints[JointType.ElbowRight].Position);

System.Windows.Point joint2 = this.ScalePosition(skeleton.Joints[JointType.HipCenter].Position);

System.Windows.Point joint3 = this.ScalePosition(skeleton.Joints[JointType.Spine].Position);

System.Windows.Point joint4 = this.ScalePosition(skeleton.Joints[JointType.ShoulderRight].Position);

Point P1 = new Point(); //elbow

Point P2 = new Point(); // hip

Point P3 = new Point(); //spine

Point P4 = new Point(); // shoulder

P1.X = joint1.X;

P1.Y = joint1.Y;

P2.X = joint2.X;

P2.Y = joint2.Y;

P3.X = joint3.X;

P3.Y = joint3.Y;

P4.X = joint4.X;

P4.Y = joint4.Y;

Size size\_val = new Size(5, 5);

System.Drawing.Pen blackPen = new System.Drawing.Pen(System.Drawing.Color.Black, 3);

AddCircularArcGraph(P2, P1, size\_val);

double a = P1.X - P4.X;

double b = P1.Y - P4.Y;

double c = P2.X - P3.X;

double d = P2.Y - P3.Y; ;

double atanA = Math.Atan2(a, b);

double atanB = Math.Atan2(c, d);

//double angle = (atanA - atanB) \* (-180 / Math.PI);

//double angle = (atanB) \* (-180 / Math.PI);

double angle1 = (atanA) \* (-180 / Math.PI);

double angle2 = (atanB) \* (-180 / Math.PI);

double angle = -(angle1 - angle2);

TextBox txt = new TextBox();

txt.Text = angle.ToString();

Canvas.SetLeft(txt,P1.X+0.1);

Canvas.SetTop(txt, P1.Y+0.1);

canvas1.Children.Add(txt);

Here are some screenshots of my project:

